# School of Engineering, Design and Built Environment

# Electronic Undergraduate Handbook 2021

Western Sydney University

ISSN 1444-7770


Units, courses, and arrangements for courses as stated in the postgraduate and undergraduate electronic handbooks (and any other Western Sydney University publications or announcements) are an expression of intent only and are not to be taken as a firm offer or undertaking.

The University reserves the right to discontinue or vary its units, courses and announcements at any time without notice.

Information contained in this electronic handbook is correct at the time of production (November 2021), unless otherwise noted.

**CRICOS Provider Code 00917K**

In accordance with the Education Services for Overseas Students (ESOS) Act 2000, the University of Western Sydney is registered on the Commonwealth Register of Institutions and Courses for Overseas Students (CRICOS), Provider Code 00917K.

Overseas students studying in Australia must comply with the requirements of the ESOS Act and the National Code. They should consult the Federal Government's Australian International Education webpage for the description of the ESOS legislation and other relevant information. The University's International Postgraduate and Undergraduate Prospectuses, and other promotional material specifically prepared for overseas students, also provide information about CRICOS registered courses and conditions relating to study in Australia.

# About the School of Engineering, Design and Built Environment Electronic Undergraduate Handbook

## Sessions and dates

There are two main sessions in 2021: Autumn and Spring. Weeks shown in the dateline refer to the session weeks for these main sessions.

The dateline is available at: https://www.westernsydney.edu.au/currentstudents/current_students/dates/2021_academic_year_dateline.

## Unit outlines

Brief outlines of the units listed in the course section are provided in the second half of this electronic handbook.

The unit outlines give a brief overview of each unit. For some units this information is not available. Please check the Western Sydney University website for more recent information. Details of textbooks, assessment methods, tutorial, group work and practical requirements are in the Learning Guide.

Current information on unit (subject) offerings can be found at: https://hbook.westernsydney.edu.au/.

## Unit not listed?

If the unit you are looking for is not in the alphabetical units section, consult your course coordinator for details or search the Handbook for updated details on all units offered in the current year at https://hbook.westernsydney.edu.au/.

## Prerequisites, co-requisites and assumed knowledge

Students wishing to enrol in a unit for which they do not have the prerequisites or assumed knowledge are advised to discuss their proposed enrolment with an academic adviser.

Where it is necessary to limit the number of students who can enrol in a unit through shortage of space, equipment, library resources, and so on, or to meet safety requirements, preference will be given to students who have completed the unit recommended sequence in the course.

## Electives and cross-discipline study

Electives are available in many courses. These may be selected from pools of electives listed under various courses.

Western Sydney University also actively encourages students to take elective units in disciplines other than their major area of study. Students should seek advice from their course coordinator in the first instance.

## How to use this electronic book

The first part of this electronic book contains information about current and continuing courses offered by the School of Engineering, Design and Built Environment and the Graduate Research School. The next part contains details on current and continuing postgraduate specialisations in these courses, and the final part has details of all units within in the courses and specialisations.

Courses are arranged mainly alphabetically. If you know the course code, but not the name, consult the COURSE CODE INDEX.

Units are arranged alphabetically. If you know the code, but not the name, consult the UNIT CODE INDEX at the back of the electronic book.

## Check the website for updates

Every effort is taken to ensure that the information contained in this electronic book is correct at time of production. The latest information on curriculum offerings can be found at: https://hbook.westernsydney.edu.au/./

## Terminology changes

The University has had terminology changes from October 2021, for example:

- Course is now Program
- Unit is now Subject
- Specialisation is now Field of Study

For more information about the new terminology, please refer to https://wsu.service-now.com/staff?id=kb_article&sysparm_article=KB0017552

# Contents

# GRADUATE RESEARCH SCHOOL

## Bachelor of Applied Leadership and Critical Thinking

### *3725.1*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course was 2015 or later.

The Bachelor of Applied Leadership and Critical Thinking (BALCT) is not a stand-alone degree, but is designed to be undertaken in combination with any Western Sydney bachelor degree. It focuses on ethical leadership, creativity, entrepreneurship and innovation, capacity to deal with complexities, relationship and critical thinking skills. The Academy's three pillars of academic rigour, professional and personal development and community engagement provide the perfect base upon which to offer this innovative degree. These characteristics and aptitudes are what the employer of tomorrow will be seeking in a graduate. Students enrolled in this degree will think from multiple perspectives, see and create opportunities, and bring creative, cooperative, empathetic and ethical leadership to his or her future role in the workplace – even if that role is, as yet, unimagined.

### Study Mode

Three years full-time or the equivalent part-time. Note: This includes two years equivalent Advanced Standing for prior undergraduate degree.

### Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Multi Modal |
| Parramatta Campus - Victoria Road | Part Time | Multi Modal |

### Advanced Standing

Advanced Standing will be granted for a maximum of 160 credit points. At least 80 credit points must be completed while enrolled in the Bachelor of Applied Leadership and Critical Thinking.

### Inherent requirements

There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

### Admission

Assumed knowledge: two units of HSC English.

This course is made available to high-achieving students only. To be eligible for admission to the BALCT, a student must attain a minimum ATAR of 85, or the minimum ATAR for their primary undergraduate degree, whichever is the higher.

Students must also maintain a grade point average of 5 or above throughout the duration of their study.

Current Western Sydney University students wishing to enrol must have a minimum GPA for 5 or above.

Non-school leavers must have completed an undergraduate degree with a minimum GPA of 5.

For current Western Sydney University students wishing to enrol please complete the Concurrent Degree Form. Link below:

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

### Special Requirements

Students must have completed all requirements for another bachelor degree in order to graduate with the Bachelor of Applied Leadership and Critical Thinking.

### Course Structure

The Bachelor of Applied Leadership and Critical Thinking (BALCT) is not a stand-alone degree, but is designed to be undertaken in combination with any Western Sydney bachelor degree.

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below and 160 credit points of Advanced Standing.

### Recommended Sequence

### Standard Pathway

**Year 1**

**1H session**

| | |
|---|---|
| **200855.3** | Leadership in a Complex World |
| **301071.3** | Introduction to Critical Thinking |
| **301069.3** | Research Stories |
| **102211.3** | Creativity, Innovation and Design Thinking |

**2H Session**

| | |
|---|---|
| **301072.4** | Innovation Lab |
| **102212.3** | Internship and Community Engagement |
| **102250.3** | Ethical Leadership |
| **301070.3** | Logic, Rhetoric and Argumentation |

### Four Year Accelerated Pathway for Concurrent Enrolment in a Four Year Degree

**Year 1**

**Summer session**

| | |
|---|---|
| **200855.3** | Leadership in a Complex World |

**Year 2**

**Summer session**

**102211.3** Creativity, Innovation and Design Thinking
**301071.3** Introduction to Critical Thinking

**Year 3**

**Summer session**

**102250.3** Ethical Leadership
**301069.3** Research Stories

**Year 4**

**Summer session**

**301070.3** Logic, Rhetoric and Argumentation
**102212.3** Internship and Community Engagement
**301072.4** Innovation Lab

## Five Year Accelerated Pathway for Concurrent Enrolment in a Five Year Degree

**Year 1**

**Summer session**

**200855.3** Leadership in a Complex World

**Year 2**

**Summer session**

**102211.3** Creativity, Innovation and Design Thinking
**301071.3** Introduction to Critical Thinking

**Year 3**

**Summer session**

**102250.3** Ethical Leadership
**301069.3** Research Stories

**Year 4**

**Summer session**

**301070.3** Logic, Rhetoric and Argumentation

**Year 5**

**Summer session**

**102212.3** Internship and Community Engagement
**301072.4** Innovation Lab

# Bachelor of Research Studies

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### *8083.2*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year for this course is 2H 2017 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

The Master of Research is an internationally recognised qualification which will allow students to be globally mobile in advancing their research education, employment opportunities and pathways to further study. It is designed to increase students' preparedness for PhD studies and ultimately for research-orientated careers.

The first year is comprised of advanced Bachelor level studies exposing students to comprehensive research methodology and advanced disciplinary coursework. Students will develop a research proposal, improve their academic literacy skills and engage with issues associated with research ethics and integrity. In the second year students will undertake a supervised year of higher degree research and produce a Masters thesis. The second year also includes a series of workshops and seminars designed to enhance students' research and professional capabilities.

For domestic students, this program attracts Australian Government funding, packaged as a Bachelor of Research Studies/Master of Research to meet regulations.

In Year 1, domestic students are enrolled in the Bachelor of Research Studies as a Commonwealth supported student and are liable for student contribution amounts which can be deferred through the HECS-HELP scheme if they are eligible. In Year 2, domestic students are enrolled in the Master of Research.

Further information about the Master of Research can be found on the Future Students Research Studies pages.

## Study Mode

Two years full-time or four years part-time

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Parramatta Campus - Victoria Road | Part Time | Internal |

## Admission

Admission is determined by the following criteria being met

- A Bachelor's degree or a Master's degree;
- Achievement of a threshold Admission Average Mark (AAM) equal to or above the minimum of 65;
- Applicants who do not meet the AAM equal to or above the minimum of 65 will be considered in exceptional circumstances, and applicants whose most recent qualification is 5+ years old shall provide additional evidence of relevant work experience or professional training, or evidence of seniority and standing in an area of endeavor and provide written support from the potential supervisor. Examples of evidence may include; work as a research assistant or laboratory technician, the writing of policy, consultancy involving the writing of reports, production of creative output, and publication of peer reviewed journal articles. Applications will be reviewed and approved by the relevant HDR Director and the Dean of the GRS;

- A statement that outlines a tentative research area.

Additionally for International students an English proficiency requirement of IELTS 6.5 overall (minimum 6.0 in each band) or equivalent.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and the University.

## Course Structure

Year 1 of this course will also be studied by International students enrolled in 8084 Master of Research (High Cost) and 8085 Master of Research (Low Cost).

After completion of Year 1, domestic students will be transferred to either 8084 Master of Research (High Cost) or 8085 Master of Research (Low Cost), depending on their research discipline area.

Qualification for the award of Master of Research requires the successful completion of 160 credit points. All students will complete 80 credit points of coursework units and 80 credit points of higher degree by research.

**All students must enrol in and complete the 30 credit points of prescribed Core units.**

## Core units

| | |
|---|---|
| **800218.2** | Researcher Development 1: Reading, Writing, and the Business of Research |
| **800219.2** | Writing Beyond the Academy: Knowledge Translation and Public Audience Communication |
| **800220.3** | Researcher Development 2: Proposing and Justifying Research |

### Equivalent Core Units

The core units listed below count towards completion of this course for students who passed these units in 2019 or earlier.

800166 - Research Design 1: Theories of Enquiry

800167 - Research Literacies

800169 - Research Design 2: Practices of Research

### Students must also complete

- 50 credit points of specialisation cluster units. Students will choose 40 credit points of discipline-specific units from within their cluster and are encouraged to choose 10 credit points from an alternate cluster, however this is not mandatory. Students are required to complete 50 credit points of cluster units in total. The three cluster discipline areas are Humanities, Arts and Social Sciences (HASS), Science, Technology, Engineering and Mathematics (STEM), and Health and Medicine, as shown below.

- 80 credit points of higher degree research.

Students may exit with the Bachelor of Research Studies (exit only) after Year 1 and the successful completion of 80 credit points, with advanced standing of 160 credit points from their previous undergraduate qualification being granted.

## Humanities, Arts and Social Sciences (HASS) Cluster

Please note: units will be offered subject to demand and availability

### Graduate Research School

| | |
|---|---|
| **800228.1** | Research Internship and Engagement |

### School of Humanities and Communication Arts

### Research Methods based Units

| | |
|---|---|
| **102426.1** | Digital Humanities Research Methods (PG) |

### Disciplinary Content Units

| | |
|---|---|
| **102582.1** | Philosophy of History and Politics |
| **102584.1** | The Image of Thought: Art, Film and Philosophy |
| **102601.1** | Understanding Race |
| **102602.1** | Gender and Genre |

### Hybrid - Disciplinary Content and Research Methods

| | |
|---|---|
| **102661.1** | How to Write History |
| **102662.1** | New Genres in Research Writing |
| **102412.1** | Global Digital Futures |
| **102298.1** | The Cutting Edge: Advanced Studies in Humanities and Communication Arts |
| **102339.3** | Environmental Humanities |
| **102340.1** | Engaging Discursive Fields |
| **102342.1** | In the Realms of the Sensory: Ecologies of Word, Sound and Image |
| **102341.1** | Debates in Global History |
| **102581.1** | Literary Theory |
| **102583.1** | History of Ideas |
| **102585.1** | What is Islam? |

### Creative Writing

### Disciplinary Content Units

| | |
|---|---|
| **102499.1** | Writing Process |
| **102500.2** | Writing and Form |

### Hybrid - Disciplinary Content and Research Methods

| | |
|---|---|
| **102497.2** | Writing and Ideas |
| **102498.2** | Writing Practice and Tradition |
| **102501.2** | Writing, Sounds, Images, Texts |

### Convergent Media

### Hybrid - Disciplinary Content and Research Methods

| | |
|---|---|
| **101962.1** | Researching Convergent Media |

### Continental Philosophy

### Disciplinary Content Units

| | |
|---|---|
| **102381.1** | Ethics |
| **102384.1** | Political Philosophy |
| **102616.1** | Philosophy and Literature |

**Hybrid - Disciplinary Content and Research Methods**

| | |
|---|---|
| 102380.1 | Philosophical Aesthetics |
| 102383.1 | Topics in the History of Philosophy |
| 102379.1 | Special Topics in Philosophy |
| 102615.1 | Theoretical Philosophy |
| 102618.1 | Practical Philosophy |
| 102619.1 | Philosophy of Nature |
| 102620.1 | Philosophy, History and Interpretation |

**Creative Arts**

**Disciplinary Content Units**

| | |
|---|---|
| 102376.1 | Creativity: Theory and Practice |

**Hybrid - Disciplinary Content and Research Methods**

| | |
|---|---|
| 102375.1 | Research Methods in the Creative Arts |
| 102728.1 | Research into Practice: bridging the clinician-researcher divide in applied and creative therapies |

**Linquistics and TESOL**

**Research Methods based Units**

| | |
|---|---|
| 101854.1 | Language and Linguistics Research Methods |
| 102621.2 | Formal and Functional Grammar |

**Hybrid - Disciplinary Content and Research Methods**

| | |
|---|---|
| 101825.3 | English Linguistics for TESOL |
| 102325.1 | Advanced Academic English Skills |
| 100919.3 | Investigating Second Language Acquisition |
| 102525.1 | Bilingualism and Education |

**Social Sciences and Psychology**

**Research Methods based Units**

| | |
|---|---|
| 102253.2 | Digital Social Research in Action |

**Hybrid - Disciplinary Content and Research Methods**

| | |
|---|---|
| 102180.3 | Translation from Theory and Research to Policy |
| 102176.2 | Theories of Difference and Diversity |
| 102194.3 | Social Research in the Digital World |
| 102853.1 | Cool Green Cities |

**Urban Studies**

**Hybrid - Disciplinary Content and Research Methods**

| | |
|---|---|
| 101633.3 | Managing Cities: History and Theory |
| 102069.2 | Heritage and Planning |
| 101315.4 | Financing Cities in the Global Economy |
| 101634.5 | Planning and Environmental Regulation |

**Development, Security and Sustainability**

**Hybrid - Disciplinary Content and Research Methods**

| | |
|---|---|
| 101895.2 | Political Economy of Development |
| 101896.2 | Development and Security |
| 101636.3 | Developing Sustainable Places |
| 102577.2 | Humanitarian and Development Agendas and Progress |

**Criminology**

**Hybrid - Disciplinary Content and Research Methods**

| | |
|---|---|
| 102198.2 | Transnational Crime |
| 102200.2 | Global Criminology and Human Rights |
| 102199.2 | Violence, Culture and Criminal Justice |

**Religion and Society**

**Hybrid - Disciplinary Content and Research Methods**

| | |
|---|---|
| 102201.2 | Contemporary Theories of Religion and Society |
| 102202.2 | Religion and Law in Contemporary Public Discourse |

**Humanitarian and Development Studies**

**Hybrid - Disciplinary Content and Research Methods**

| | |
|---|---|
| 101896.2 | Development and Security |
| 102576.2 | Global Health, Migration and Development |
| 102577.2 | Humanitarian and Development Agendas and Progress |
| 102574.2 | Public Health in Complex Emergencies (Advanced) |
| 102575.2 | Emergency and Disaster Management |

**Institute for Culture and Society**

**Hybrid - Disciplinary Content and Research Methods**

| | |
|---|---|
| 800216.1 | Researching Post-Capitalist Possibilities (PhD Summer School) |
| 102295.2 | Space, Place and the Field |
| 800196.1 | Rethinking Culture and Society |

**School of Education**

**Research Methods/Disciplinary Content**

| | |
|---|---|
| 102152.3 | Social Ecology |
| 102160.1 | Education Policy, Practice and Global Knowledge Co-construction |
| 102166.1 | Person-Centred Practice |
| 102158.2 | Learning and Teaching in Challenging Contexts |
| 102159.2 | Designing Curriculum Futures |
| 102165.1 | At the cultural interface - learning two ways |
| 101658.1 | Transformative Learning |
| 100701.1 | Leadership, Mentoring and Professional Growth |
| 102148.1 | Engaging Communities |
| 102156.1 | Disability in Context |
| 102509.2 | Computational Thinking across the STEM Curriculum |
| 102161.2 | Leading Change |

**Hybrid - Disciplinary Content and Research Methods**

| | |
|---|---|
| 102168.1 | Principles and Practices of Evaluation |

**School of Business**

Business students are required to undertake 30 credit points of research methods electives

**Research Methods based Units**

| | |
|---|---|
| 200897.2 | Advanced Analysis and Interpretation |
| 200898.3 | Seminal Papers in Business |
| 200896.3 | Business Analysis Seminars |

Business students may then select up to 20 credit points of cluster elective units

**Disciplinary Content Units**

| | |
|---|---|
| 200848.4 | Governance, Ethics and Social Entrepreneurship |
| 200828.1 | Diversity, Labour Markets and Workforce Planning |
| 200845.2 | Innovation Through Digital Technology |
| 200719.2 | Industrial Relations and Workplace Change |
| 51211.3 | International Finance |
| 200852.3 | Innovation, Creativity and Foresight |
| 200849.2 | New Venture Finance |
| 200894.1 | Property Development |
| 200722.2 | Strategic Employment Relations |
| 200401.4 | Accounting Theory and Applications |

**Hybrid - Disciplinary Content and Research Methods**

| | |
|---|---|
| 51054.4 | Financial Modelling |
| 51212.4 | Security Analysis and Portfolio Theory |
| 200329.5 | Supply Chain Management |

**School of Law**

| | |
|---|---|
| 200957.3 | Bioethics in Perspective |
| 200907.4 | International Environmental Law and Policy |
| 200948.1 | International Banking and Finance Law |
| 200949.1 | International Climate Change Law |
| 200980.1 | Security of Ideas |
| 200953.1 | Human Rights in Practice and Theory |
| 200951.1 | International Law of Ocean Governance |
| 200961.2 | International Human Rights Law |
| 200962.2 | International Criminal Law and Justice |
| 200963.2 | International Space Law - Commercial Aspects |
| 200964.1 | Principles of International Law |

## Science, Technology, Engineering & Mathematics (STEM) Cluster

Please note: units will be offered subject to demand and availability

**School of Computer, Data and Mathematical Sciences**

**Research Methods/Disciplinary Content - Computing**

| | |
|---|---|
| 301363.1 | Advanced Cloud Computing |
| 301196.2 | Advanced Topics in Artificial Intelligence |
| 300694.4 | Advanced Topics in ICT |
| 300252.4 | Advanced Topics in Networking |
| 301042.2 | Cloud Computing |
| 301175.2 | Internet of Things |
| 300599.5 | Advanced Robotics |
| 301038.3 | Programming Proficiency |
| 301312.1 | Applied Machine Learning |

**Research Methods/Disciplinary Content - Data Science**

| | |
|---|---|
| 301044.2 | Data Science |

**Research Methods/Disciplinary Content - Mathematics**

| | |
|---|---|
| 301177.2 | Mathematical Proof and Reasoning |
| 301106.2 | Mathematical Investigations |
| 301176.2 | Advanced Mathematical Investigations |

**Research Methods based Units**

| | |
|---|---|
| 301387.1 | Research Preparation in Post Graduate Studies |

**Hybrid - Disciplinary Content and Research Methods**

| | |
|---|---|
| 301236.2 | Advanced Topics in Cybersecurity |
| 301365.1 | Probabilistic Graphical Models |

**School of Engineering, Design and Built Environment**

**Disciplinary Content Units**

| | |
|---|---|
| 301002.3 | Specialised Software Applications |
| 301003.3 | Sustainable Systems |
| 300197.5 | Power System Planning and Economics |
| 301024.3 | Advanced Numerical Methods in Engineering |
| 300594.6 | Advanced Structural Analysis |
| 300595.5 | Advanced Water Engineering |
| 300604.5 | Advanced Geotechnical Engineering |
| 300939.4 | Sustainability and Risk Engineering (PG) |
| 301008.3 | Advanced Composite Structures |
| 301009.3 | Advanced Timber Structures |
| 301010.3 | Advanced Applied Mechanics |
| 301011.4 | Advanced Highway Infrastructure |
| 301012.3 | Water Resources Systems Analysis |
| 300515.6 | Instrumentation and Measurement (PG) |
| 301013.3 | Advanced Statistical Hydrology |
| 301015.3 | Deep Foundations |
| 301012.3 | Water Resources Systems Analysis |
| 300939.4 | Sustainability and Risk Engineering (PG) |
| 301018.3 | Mechanical System Design |
| 301017.3 | Advanced Waste Management |
| 300599.5 | Advanced Robotics |
| 301019.3 | Advanced Dynamic Systems |
| 300600.5 | Mechatronic System Design |
| 301020.3 | Advanced Mobile Robotics |
| 301021.3 | Advanced Thermal and Fluid Engineering |
| 301022.3 | Advanced Computer Aided Engineering |
| 301023.3 | Advanced Computational Fluid Dynamics |
| 301024.3 | Advanced Numerical Methods in Engineering |
| 300196.5 | Personal Communication Systems |
| 300197.5 | Power System Planning and Economics |
| 301025.3 | Advanced Power Quality |
| 301026.3 | Advanced Smart Grids and Distributed Generation |
| 300515.6 | Instrumentation and Measurement (PG) |
| 300601.5 | Advanced Electrical Machines and Drives |
| 300596.5 | Advanced Signal Processing |
| 300603.5 | Advanced Control Systems |
| 301019.3 | Advanced Dynamic Systems |
| 300173.5 | Advanced Data Networks |

**School of Science**

**Hybrid - Disciplinary Content and Research Methods**

**401266.2** Experimental Design and Analysis PG A
**401267.2** Experimental Design and Analysis PG B
**401203.2** Applications of Magnetic Resonance from Cancer to Neuroanatomy
**301247.3** A Cosmic Perspective
**301248.3** Space Instrumentation, Technology and Communication
**301249.2** Space Science, Planetary Science and Meteorology

**The MARCS Institute for Brain, Behaviour and Development**

**Hybrid - Disciplinary Content and Research Methods**

**800192.1** Neuroscience Methods
**800173.1** Cognitive Science: Research and Application
**800171.1** Learning and Processing Human Language

**Hawkesbury Institute for the Environment**

**Research Methods based Units**

**800186.1** Emerging Technologies for Biological Science

**Hybrid - Disciplinary Content and Research Methods**

**800170.1** Ecosystems in a Changing World
**800195.2** Researching our Changing Environment

## Health and Medicine Cluster

Please note: units will be offered subject to demand and availability

**School of Nursing and Midwifery**

**Nursing and Midwifery**

**Research Methods based Units**

**401168.1** Evidence Based Health Care
**401085.2** Scholarship for Practice Change in Health Care
**401086.1** Writing for Publication

**Disciplinary Content Units**

**400220.2** Contemporary Professional Practice in Mental Health Nursing
**400238.3** Policy, Power and Politics in Health Care Provision
**400777.5** Leadership for Quality and Safety in Health Care
**400774.2** Perspectives on Nursing
**400210.2** Health Promotion and the Nurse

**School of Health Sciences**

**Research Methods based Units**

**401077.2** Introduction to Biostatistics

**Disciplinary Content Units**

**401414.1** Advanced Sport and Exercise Science

**Hybrid - Disciplinary Content and Research Methods**

**401076.2** Introduction to Epidemiology

**School of Medicine**

**Research Methods based Units**

**401075.2** Major Incident Management

**Disciplinary Content Units**

**401175.1** Analytic Approaches in Epidemiology
**401174.1** Epidemiology of Non-Communicable Diseases
**401173.2** Introduction to Clinical Epidemiology
**401179.2** Data Management and Programming for Epidemiology

**Hybrid - Disciplinary Content and Research Methods**

**401176.1** Statistical Methods in Epidemiology
**401178.1** Controversies in Epidemiology

**Translational Health Research Institute (THRI)**

**Research Methods**

**800215.1** Applied research with marginalised populations and sensitive health topics

**NICM Health Research Institute**

**800225.1** Clinical Research in Health Science

## Specialisation Units

The specialisation units listed below count towards completion of this course for students who passed these units in 2021 or earlier.

401291 - Advanced Sport and Exercise Science
301016 - Advanced Water and Wastewater Treatment
102220 - Applied Methods in Literary Studies and Creative Writing
102222 - Applied Practice in Literary Studies and Creative Writing
401167 - Applied Research in Health Care
101897 - Development for Equality
400975 - Ethics in Health Research
401162 - Experimental Design and Analysis (PG)
800213 - Fieldwork in Complex and Hostile Places
102336 - Functional Grammar
301118 - Genomic Data Science
102698 - Green Urbanscapes: Bio-Physical Functions and Services
800176 - Internship and Community Engagement (PG)
102181 - Nation, Power and Difference
301037 - Scientific Informatics

401164 - Transferable Research Skills

## Bachelor of Research Studies (exit only)

### *8087.2*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year for this course is 2H 2017 or later.

This course is an exit point from course 8083 Bachelor of Research Studies. Students may exit with this award after Year 1 and the successful completion of 80 credit points, with advanced standing of 160 credit points from their previous undergraduate qualification being granted.

### Study Mode
One year full-time.

### Location

| Campus | Attendance | Mode |
|---|---|---|
| Bankstown Campus | Full Time | Internal |
| Bankstown Campus | Part Time | Internal |
| Campbelltown Campus | Full Time | Internal |
| Campbelltown Campus | Part Time | Internal |
| Hawkesbury Campus | Full Time | Internal |
| Hawkesbury Campus | Part Time | Internal |
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Parramatta Campus - Victoria Road | Part Time | Internal |
| Penrith Campus | Full Time | Internal |
| Penrith Campus | Part Time | Internal |

### Admission
This course is an exit point only from 8083 Bachelor of Research Studies.

Please refer to the course entry for 8083 Bachelor of Research Studies for details of the course structure.

## Bachelor of Research Studies (Planning)

### *8119.1*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year for this course is 1H 2019 or later.

The Master of Research (Planning) is an internationally recognised qualification that provides graduates of this degree with the professional and scholarly education to take a leadership role in urban and regional planning and policy development.

The first year combines coursework training in comprehensive research methodology with an advanced specialisation in urban and regional planning. In the second-year students will undertake a supervised year of higher degree research and produce a Master's thesis. The second year also includes a series of workshops and seminars designed to enhance students' research and professional capabilities.

For domestic students, this program attracts Australian Government funding, packaged as a Bachelor of Research Studies (Planning)/Master of Research (Planning) to meet regulations.

In Year 1, domestic students are enrolled in the Bachelor of Research Studies (Planning) as a Commonwealth supported student and are liable for student contribution amounts which can be deferred through the HECS-HELP scheme if they are eligible. In Year 2, domestic students are enrolled in the Master of Research (Planning).

Further information about the Master of Research (Planning) can be found on the Future Students Research Studies pages.

### Study Mode
Two years full-time or four years part-time.

### Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Parramatta Campus - Victoria Road | Part Time | Internal |
| Parramatta City Campus-Macquarie Street | Full Time | Internal |
| Parramatta City Campus-Macquarie Street | Part Time | Internal |

### Admission
Admission is determined by the following criteria being met

- A Bachelor's degree or a Master's degree in a cognate discipline such as Planning, Architecture, Engineering, property, Urban Studies, landscape Architecture, Geography, Environmental Management.
- Achievement of a threshold Admission Average Mark (AAM) equal to or above the minimum of 65.
- Demonstrated professional experience in a related discipline to be considered at the discretion of the Dean, Graduate Studies for applicants whose most recent qualification is 5+ years old and
- A statement that outlines a tentative research area.

Additionally for International students and for domestic students who have a qualification in a medium other than English, an English proficiency requirement of IELTS 6.5 overall (minimum 6.0 in each band) or equivalent.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and the University.

### Course Structure
Year 1 of this course will also be studied by International students enrolled in 8120 - Master of Research (Planning).

After completion of Year 1, domestic students will be transferred to 8120 - Master of Research (Planning).

Qualification for the award of Master of Research (Planning) requires the successful completion of 160 credit points. All students will complete 80 credit points of coursework units and 80 credit points of higher degree by research.

All students must enrol in and complete the 80 credit points of prescribed core units.

## Core units

| | |
|---|---|
| 101636.3 | Developing Sustainable Places |
| 101315.4 | Financing Cities in the Global Economy |
| 101633.3 | Managing Cities: History and Theory |
| 101634.5 | Planning and Environmental Regulation |
| 101314.4 | Urban Management Practice: Governance and Power in the City |
| 800218.2 | Researcher Development 1: Reading, Writing, and the Business of Research |
| 800219.2 | Writing Beyond the Academy: Knowledge Translation and Public Audience Communication |
| 800220.3 | Researcher Development 2: Proposing and Justifying Research |

## Recommended Sequence

Students must undertake the following sequence of units according to whether they begin the course at the start or middle of the year

## Full-time

## Start Year

### 1H session

| | |
|---|---|
| 800218.2 | Researcher Development 1: Reading, Writing, and the Business of Research |
| 800219.2 | Writing Beyond the Academy: Knowledge Translation and Public Audience Communication |
| 101633.3 | Managing Cities: History and Theory |
| 101634.5 | Planning and Environmental Regulation |

### 2H session

| | |
|---|---|
| 800220.3 | Researcher Development 2: Proposing and Justifying Research |
| 101315.4 | Financing Cities in the Global Economy |
| 101636.3 | Developing Sustainable Places |
| 101314.4 | Urban Management Practice: Governance and Power in the City |

## Mid Year

### 2H session

| | |
|---|---|
| 800218.2 | Researcher Development 1: Reading, Writing, and the Business of Research |
| 101315.4 | Financing Cities in the Global Economy |
| 101636.3 | Developing Sustainable Places |
| 101314.4 | Urban Management Practice: Governance and Power in the City |

### 1H session

| | |
|---|---|
| 800220.3 | Researcher Development 2: Proposing and Justifying Research |
| 800219.2 | Writing Beyond the Academy: Knowledge Translation and Public Audience Communication |
| 101633.3 | Managing Cities: History and Theory |
| 101634.5 | Planning and Environmental Regulation |

## Part-time

## Start Year

### Year 1

### 1H session

| | |
|---|---|
| 800218.2 | Researcher Development 1: Reading, Writing, and the Business of Research |
| 101633.3 | Managing Cities: History and Theory |

### 2H session

| | |
|---|---|
| 101315.4 | Financing Cities in the Global Economy |
| 101636.3 | Developing Sustainable Places |

### Year 2

### 1H session

| | |
|---|---|
| 800219.2 | Writing Beyond the Academy: Knowledge Translation and Public Audience Communication |
| 101634.5 | Planning and Environmental Regulation |

### 2H session

| | |
|---|---|
| 800220.3 | Researcher Development 2: Proposing and Justifying Research |
| 101314.4 | Urban Management Practice: Governance and Power in the City |

## Mid Year

### Year 1

### 2H session

| | |
|---|---|
| 800218.2 | Researcher Development 1: Reading, Writing, and the Business of Research |
| 101636.3 | Developing Sustainable Places |

### 1H session

| | |
|---|---|
| 800219.2 | Writing Beyond the Academy: Knowledge Translation and Public Audience Communication |
| 101633.3 | Managing Cities: History and Theory |

### Year 2

### 2H session

| | |
|---|---|
| 101315.4 | Financing Cities in the Global Economy |
| 101314.4 | Urban Management Practice: Governance and Power in the City |

### 1H session

| | |
|---|---|
| 800220.3 | Researcher Development 2: Proposing and Justifying Research |

**101634.5** Planning and Environmental Regulation

Students may exit with the Bachelor of Research Studies (exit only) after Year 1 and the successful completion of 80 credit points, with advanced standing of 160 credit points from their previous undergraduate qualification being granted.

## Equivalent Core Units

The core units listed below count towards completion of this course for students who passed these units in 2019 or earlier.

800166 - Research Design 1: Theories of Enquiry

800167 - Research Literacies

800169 - Research Design 2: Practices of Research

# SCHOOL OF ENGINEERING, DESIGN AND BUILT ENVIRONMENT

## Bachelor of Architectural Design

### *3753.1*

The Bachelor of Architectural Design provides students with a combination of skills and knowledge required by contemporary architects, aligning with the Architects Accreditation Council of Australia (AACA) National Standard of Competency for Architects in the areas of design, documentation, project delivery and practice management across five knowledge domains; regulatory, social and ethical, environmentally sustainable, communication and disciplinary. The course focuses on producing graduates who can synthesise and evaluate information from across associated disciplines, undertake architectural design and apply design thinking to complex projects in a global marketplace.

**Parts of this course may be taught at the Parramatta City - Hassall St campus or at the Parramatta South campus.**

### Additional Course Information

Students enrolled in the Bachelor of Architectural Design should anticipate expenses of approximately $200 per semester for model-making materials and large format plotting costs. Additionally, it is strongly recommended all students have their own laptop when commencing the course (minimum 8GB RAM, multi-core processor, graphics card) but no later than the start of Semester 3. Laptop specifications and other required equipment will be provided upon admission to the course.

### Study Mode

Three years full-time or six years part-time.

### Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta City Campus-Macquarie Street | Full Time | Internal |
| Parramatta City Campus-Macquarie Street | Part Time | Internal |

### Admission

Recommended ATAR: 85 or equivalent

Assumed knowledge: HSC English Standard (or higher), and Science and/or Mathematics (Band 4 or above).

Recommended studies: Art, design technology (drafting/ CAD), and/or professional studies.

#### Alternate Entry

Where academic requirements are not met, entry by portfolio demonstrating creative ability is also possible. Portfolios will be assessed by the School of Built Environment on a qualitative basis.

PDF portfolio required for all international applicants.

#### Portfolio (PDF only) Formatting and Content Requirements

- Maximum 10 page PDF file showing visual evidence of creative ability. Images should be labelled and dated, with brief descriptions of the work to clarify as required (max 25 words per image). Creative production need not be limited to ‘architectural’ works but can include: photography, sculpture, freehand drawing, mechanical drafting or CAD modelling, woodwork or technical arts, music scores, creative writing, dramatic performance or dance, and other forms of creative or professional endeavour.
- Maximum 5MB file size
- Colour or black and white
- A4 portrait or landscape
- No embedded hyperlinks. Static files only. No security or password protection on the file
- Cover sheet with your name, email address, and phone number and 100 word maximum description of the creative content, explanation of any exceptional circumstances, and articulation of why the field of architecture is of interest
- Save the PDF file using the following name format: B_Arch_Design_SURNAME_FIRSTNAME_portfolio.pdf

For example, B_Arch_Design_SMITH_JOHN_portfolio.pdf

You must upload your portfolio to your UAC application or via direct application through the Western Sydney portal. Offers are made on specific dates throughout the year.

For UAC applications visit

For Western Sydney portal applications visit

Do NOT email your portfolios to WSU.

All work submitted to be applicants own work.

#### Additional Information

To be eligible for admission you must have achieved a minimum ATAR or equivalent of 85.00.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English.

Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website.

International applicants must apply directly to the University via the International Office.

International students applying to the University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Note Regarding Professional Accreditation

The program is designed to meet all the requirements of the Architects Accreditation Council of Australia and in conjunction with the proposed Master of Architecture (Urban Transformation) program. The professional pathway to registration in architecture in Australia requires a minimum 5 year sequence including a three year Bachelors, a 2 year Master of Architecture and a nominal 2 year (3300 hrs) professional practice internship under the supervision of a registered practising architect of which 1650 hours can be during their study years. Successful completion of the Bachelor of Architectural Design will enable students to apply for entry into the Master of Architecture (Urban Transformation) program at Western Sydney University and may be eligible to apply to other accredited architecture program providers dependant on their entry requirements. Students who do not wish to proceed to the Masters course will still obtain a qualification that will assist with employment in the broad industry as part of building design teams and other allied disciplines in creative arts and professional services.

## Special Requirements

Students are required to obtain a General Construction Induction Card ("white card") to facilitate construction site visits as part of the course. This can be obtained independently or through a coordinated effort of program staff during new student orientation. Detailed information will be provided to students. It is expected Induction Cards will be obtained during the first year of study, and will be a requirement to enrol in Year 2.

## Course Structure

Qualification for this award requires the successful completion of 240 credit points as per the recommended sequence below.

Students must complete:

- Eight 10 credit points core units
- Six 20 credit points core studio units
- Four elective units

**Parts of these units may be taught at the Parramatta City - Hassall St campus or at the Parramatta South campus.**

## Recommended Sequence Start Year Intake

### Year 1

#### Autumn session

| | |
|---|---|
| 301280.2 | Human Centred Design Research Methods |
| 301283.2 | Design Graphics: Presenting Innovation |
| 301197.3 | Architecture Studio - Fundamentals of Analogue Design |

#### Spring session

| | |
|---|---|
| 301062.3 | Environmental Building Design |
| 301198.4 | Architecture Studio - Fundamentals of Digital Design |
| 301226.2 | Residential Building |

### Year 2

#### Autumn session

| | |
|---|---|
| 101589.3 | Cities: Introduction to Urban Studies |
| 301199.3 | Architecture Studio - Rethinking the Sub-urban |

And one elective

#### Spring session

| | |
|---|---|
| 301200.3 | Architecture Studio - Rethinking Urbanism |
| 301227.2 | Non-Residential Building |

And one elective

### Year 3

#### Autumn session

| | |
|---|---|
| 200471.6 | Construction Technology 5 (Envelope) |
| 301201.2 | Architecture Studio - Global Cities |

And one elective

#### Spring session

| | |
|---|---|
| 101646.3 | Analysis of Spatial Data |
| 301202.2 | Architecture Studio - The Infrastructural |

And one elective

## Recommended Sequence Mid-Year Intake

### Year 1

#### Spring session

| | |
|---|---|
| 301062.3 | Environmental Building Design |
| 301226.2 | Residential Building |
| 301198.4 | Architecture Studio - Fundamentals of Digital Design |

#### Autumn session

| | |
|---|---|
| 301280.2 | Human Centred Design Research Methods |
| 301283.2 | Design Graphics: Presenting Innovation |
| 301197.3 | Architecture Studio - Fundamentals of Analogue Design |

### Year 2

#### Spring session

| | |
|---|---|
| 301227.2 | Non-Residential Building |
| 301200.3 | Architecture Studio - Rethinking Urbanism |

And one elective

#### Autumn session

| | |
|---|---|
| 101589.3 | Cities: Introduction to Urban Studies |
| 301199.3 | Architecture Studio - Rethinking the Sub-urban |

And one elective

**Year 3**

**Spring session**

**101646.3** Analysis of Spatial Data
**301202.2** Architecture Studio - The Infrastructural

And one elective

**Autumn session**

**200471.6** Construction Technology 5 (Envelope)
**301201.2** Architecture Studio - Global Cities

And one elective

**Replaced Units**

The units listed below count towards completion of this course for students who passed these units in 2019 or earlier.

301030 - Introduction to Industrial Design Methods

301074 - Graphics 1: 2D and 3D Industrial Design Communication

300706 - Building 1

300707 - Building 2

## Sub-major Elective Spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

# Bachelor of Building Design Management

## *3727.1*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year for this course is 2016 or later.

Over four years, this course develops the skills necessary for a role in the integrated design and delivery of building projects. Students develop skills in building design along with an understanding of 'buildability' issues, accurate cost forecasting, risk management and sustainable project delivery. The ability to work as a part of a multi-disciplinary project team and to negotiate favourable outcomes in complex project environments is fostered through simulations of real-life building projects. Students will acquire a comprehensive overview of construction project delivery. All aspects of building design are included: commencing with an initial design concept; extending to design brief formation; project documentation; quality control management during the building process; and finally leading to project handover. Students will be required to undertake approved practical experience during the course. This experience will support and complement their formal study.

## Study Mode

Four years full-time or eight years part-time. (Please note the mid-year intake is only available at Parramatta-Victoria Road)

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Penrith Campus | Full Time | Internal |

## Advanced Standing

Successful applicants for Advanced Standing may be required to travel to different Western Sydney University campuses to complete the elements of their course.

## Admission

Assumed knowledge: HSC English and Mathematics/ Science.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

## Recommended Sequence

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below.

## Start year Intake (Parramatta-Victoria Road and Penrith campuses)

## Full-time

**Year 1**

**Autumn session**

**300706.3** Building 1

**300729.3** Graphic Communication and Design
**300975.1** Professional Competencies

From Autumn 2019, students are advised to select the following equivalent unit, 301213 Construction Communication, which will replace 300975 Professional Competencies.

**301213.3** Construction Communication
**301061.3** Construction Work Safety

**Spring session**

**300707.2** Building 2
**200909.2** Enterprise Law
**200101.7** Accounting Information for Managers
**301062.3** Environmental Building Design

**Year 2**

**Autumn session**

**300720.3** Construction Technology 1 (Civil)
**200486.3** Quantity Surveying 1

From Autumn 2019, students are advised to select the following equivalent unit, 301208 Building Measurement, which will replace 200486 Quantity Surveying 1.

**301208.3** Building Measurement
**300723.4** Development Control

And one elective

**Spring session**

**300721.5** Construction Technology 2 (Substructure)
**200468.2** Estimating 1

From Spring 2019, students are advised to select the following equivalent unit, 301207 Building Estimates and Tendering, which will replace 200468 Estimating 1.

**301207.3** Building Estimates and Tendering
**301085.3** Built Heritage

And one elective

**Year 3**

**Autumn session**

**200502.6** Construction Technology 3 (Concrete Construction)
**300727.4** Project Management
**301086.3** Design Brief Formulation

And one elective

**Spring session**

**200470.7** Construction Technology 4 (Steel Construction)
**300886.3** Construction in Practice 1
**301087.3** Building Design Process

And one elective

## Non-honours Stream

**Year 4**

**Autumn session**

**200471.6** Construction Technology 5 (Envelope)
**200504.5** Construction Economics
**301099.3** Building Design Project 1

**Spring session**

**300725.5** Construction Technology 6 (Services)
**200484.7** Construction in Practice 3
**301100.3** Building Design Project 2

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Autumn session**

**200471.6** Construction Technology 5 (Envelope)
**200504.5** Construction Economics
**301101.3** Building Design Project 1 (Honours)

**Spring session**

**300725.5** Construction Technology 6 (Services)
**200484.7** Construction in Practice 3
**301102.3** Building Design Project 2 (Honours)

## Industry Experience

All students enrolled in Bachelor of Building Design Management must obtain, through their own initiative, 1200 hours of industry related employment prior to graduation.

To facilitate the recording of such experience it will be necessary to enrol in 300724 Industry Based Learning and have an Industry Experience Diary signed off by the Academic Course Advisor.

**300724.4** Industry Based Learning

## Optional Electives

**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Mid-year Intake (Parramatta-Victoria Road campus only)

## Full-time

### Year 1

#### Spring session

**301213.3** Construction Communication
**300706.3** Building 1
**300707.2** Building 2
**200101.7** Accounting Information for Managers

#### Autumn session

**300729.3** Graphic Communication and Design
**301061.3** Construction Work Safety
**200909.2** Enterprise Law
**300720.3** Construction Technology 1 (Civil)

### Year 2

#### Spring session

**301062.3** Environmental Building Design
**300721.5** Construction Technology 2 (Substructure)
**301085.3** Built Heritage

And one elective

#### Autumn session

**301208.3** Building Measurement
**200502.6** Construction Technology 3 (Concrete Construction)
**301086.3** Design Brief Formulation

And one elective

### Year 3

#### Spring session

**200470.7** Construction Technology 4 (Steel Construction)
**300886.3** Construction in Practice 1
**301207.3** Building Estimates and Tendering
**301087.3** Building Design Process

#### Autumn session

**300727.4** Project Management
**300723.4** Development Control
**200471.6** Construction Technology 5 (Envelope)

And one elective

## Non-honours Stream

### Year 4

#### Spring session

**300725.5** Construction Technology 6 (Services)
**200484.7** Construction in Practice 3
**301099.3** Building Design Project 1

#### Autumn session

**200504.5** Construction Economics
**301100.3** Building Design Project 2

And one elective

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated Guidelines for the admission criteria.

### Year 4 (Honours stream)

#### Spring session

**300725.5** Construction Technology 6 (Services)
**200484.7** Construction in Practice 3
**301101.3** Building Design Project 1 (Honours)

#### Autumn session

**200504.5** Construction Economics
**301102.3** Building Design Project 2 (Honours)

And one elective

## Industry Experience

All students enrolled in Bachelor of Building Design Management must obtain, through their own initiative, 1200 hours of industry related employment prior to graduation.

To facilitate the recording of such experience it will be necessary to enrol in 300724 Industry Based Learning and have an Industry Experience Diary signed off by the Academic Course Advisor.

**300724.4** Industry Based Learning

## Optional Electives

**301159.3** Modern Construction Projects
**301158.3** Modern Construction Enterprises
**301089.3** Special Technical Project

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Sub-majorElective Spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

# Bachelor of Building Design Management

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## *3727.2*

Students should follow the course structure for the course version relevant to the year they commenced. This version

applies to students whose commencement year in this course is 2020 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

Over four years, this course develops the skills necessary for a role in the integrated design and delivery of building projects. All aspects of building design are included: from initial design concept, extending to design brief formation, project documentation, quality control management during the building process and project handover. Students will develop an understanding of 'buildability' issues, accurate cost forecasting, risk management and sustainable project delivery. Students will also develop skills needed to work in a multi-disciplinary project team and negotiate favourable outcomes in complex project environments through simulations of real-life building projects and approved practical experiences.

## Study Mode

Four years full-time or eight years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Penrith Campus | Full Time | Internal |

## Admission

Assumed knowledge: HSC English and Mathematics/ Science.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to the University via the International Office.

International students applying to the University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

## Recommended Sequence

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below.

## Start year Intake

## Full-time

### Year 1

#### Autumn session

| | |
|---|---|
| 301226.2 | Residential Building |
| 301228.2 | Drawing and CAD |
| 301213.3 | Construction Communication |
| 301061.3 | Construction Work Safety |

#### Spring session

| | |
|---|---|
| 301227.2 | Non-Residential Building |
| 200909.2 | Enterprise Law |
| 301219.2 | Building Science |
| 301062.3 | Environmental Building Design |

### Year 2

#### Autumn session

| | |
|---|---|
| 301220.2 | Civil and Substructure |
| 301208.3 | Building Measurement |
| 300723.4 | Development Control |

And one elective

#### Spring session

| | |
|---|---|
| 200101.7 | Accounting Information for Managers |
| 301207.3 | Building Estimates and Tendering |
| 301085.3 | Built Heritage |

And one elective

### Year 3

#### Autumn session

| | |
|---|---|
| 301221.1 | Building Superstructure |
| 301229.1 | Construction Project Management |
| 301086.3 | Design Brief Formulation |

And one elective

#### Spring session

| | |
|---|---|
| 200292.2 | Building Law |
| 301230.1 | Construction Scheduling |
| 301087.3 | Building Design Process |

And one elective

### Year 4

#### Autumn session

| | |
|---|---|
| 301231.1 | Residential Building Project |
| 301159.3 | Modern Construction Projects |

Choose one of the following 20 credit point units

**301099.3** Building Design Project 1
**301101.3** Building Design Project 1 (Honours)

**Spring session**

**301232.1** Complex Building Project
**301158.3** Modern Construction Enterprises

Choose one of the following 20 credit point units

**301100.3** Building Design Project 2
**301102.3** Building Design Project 2 (Honours)

## Industry Experience

All students enrolled in Bachelor of Building Design Management must obtain, through their own initiative, 1200 hours of industry related employment prior to graduation.

**300724.4** Industry Based Learning

## Sub-major Elective Spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

# Bachelor of Building Design Management

***3727.3***

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2021 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

Over four years, this course develops the skills necessary for a role in the integrated design and delivery of building projects. All aspects of building design are included: from initial design concept, extending to design brief formation, project documentation, quality control management during the building process and project handover. Students will develop an understanding of 'buildability' issues, accurate cost forecasting, risk management and sustainable project delivery. Students will also develop skills needed to work in a multi-disciplinary project team and negotiate favourable outcomes in complex project environments through simulations of real-life building projects and approved practical experiences.

There is an embedded honours stream in this course in the 4th year. Students are invited to enrol into the honours stream after consideration of certain criteria - such as GPA and overall marks in the first three years - with the opportunity to graduate with honours listed on their testamur.

## Study Mode

Four years full-time or eight years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Parramatta Campus - Victoria Road | Part Time | Internal |

## Accreditation

The Bachelor of Building Design Management is accredited by the Chartered Institute of Building.

## Inherent requirements

There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

## Admission

Assumed knowledge: HSC English and Mathematics/ Science.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to the University via the International Office.

International students applying to the University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

## Recommended Sequence

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below.

## Start year Intake

## Full-time

**Year 1**

**Autumn session**

**301226.2** Residential Building

**301228.2** Drawing and CAD
**301213.3** Construction Communication
**301061.3** Construction Work Safety

**Spring session**

**301227.2** Non-Residential Building
**301224.1** Contract Administration
**301219.2** Building Science
**301062.3** Environmental Building Design

**Year 2**

**Autumn session**

**301220.2** Civil and Substructure
**300723.4** Development Control

And two electives or Major units

**Spring session**

**200101.7** Accounting Information for Managers
**301085.3** Built Heritage

And two electives or Major units

**Year 3**

**Autumn session**

**301221.1** Building Superstructure
**301086.3** Design Brief Formulation

And two electives or Major units

**Spring session**

**200292.2** Building Law
**301087.3** Building Design Process

And two electives or Major units

**Year 4**

**Autumn session**

**301231.1** Residential Building Project
**301159.3** Modern Construction Projects

Choose one of the following 20 credit point units

**301099.3** Building Design Project 1
**301101.3** Building Design Project 1 (Honours)

**Spring session**

**301232.1** Complex Building Project
**301158.3** Modern Construction Enterprises

Choose one of the following 20 credit point units

**301100.3** Building Design Project 2
**301102.3** Building Design Project 2 (Honours)

## Industry Experience

All students enrolled in Bachelor of Building Design Management must obtain, through their own initiative, 1200 hours of industry related employment prior to graduation.

**300724.4** Industry Based Learning

## Majors

**M3127.1** Architecture

## Major and Sub-major Elective Spaces

Elective units may be used toward obtaining an additional approved major (80 credit points) or sub-major (40 credit points).

Western Sydney University offers majors and sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

# Bachelor of Construction Management

## *2607.7*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2015 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course is aimed at providing the skills and abilities necessary to perform competently at a professional level in the building industry, in one or more of the following roles: Construction Managers, Project Managers, Building Supervisors, Estimators, Quantity Surveyors and Building Researchers.

Students will develop specialised skills in construction management. The Construction Management program is widely recognised for delivering the full suite of theoretical, practical, and hands-on experience in the area of construction management. Students will study four concentrated areas related to the delivery of construction projects. These are construction technology; construction economics; construction law; and construction resource management. Additionally, students will be required to undertake a total of 1,200 hours approved practical experience during the course.

There are a number of opportunities during the course for obtaining a cadetship in the building industry in areas including building surveying, construction economics, and construction management.

## Study Mode

Four years full-time or part-time equivalent.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Penrith Campus | Full Time | Internal |

## Advanced Standing

Advanced standing is available to students who have completed the following courses at TAFE. Diploma of Building Studies, Diploma of Quantity Surveying, Diploma

of Building Surveying, Diploma of Civil Engineering, Diploma of Structural Engineering, Diploma of Architectural Technology or relevant Diploma.

## Accreditation

The Bachelor of Construction Management is accredited with the Australian Institute of Building. Graduates are eligible for Probationer membership with advancement to Associate membership of the Australian Institute of Quantity Surveyors (AIQS) after Assessment of Professional Competence.

## Admission

Assumed knowledge required: HSC Mathematics, Physics and English.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office. International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

## Academic Course Advisor

Qualification for this award requires the successful completion of 320 credit points which include units in the recommended sequence below. Electives within the sequence may be used towards obtaining an approved submajor for this award.

## Recommended Sequence

## Full-time

### Year 1

#### Autumn session

| | |
|---|---|
| **300706.3** | Building 1 |
| **300729.3** | Graphic Communication and Design |
| **300975.1** | Professional Competencies |
| **300016.4** | Design Science |

From Autumn 2018, students are advised that 301061 Construction Work Safety will be accepted as a replacement for Design Science. Students are encouraged to complete 301061 but may graduate having completed either unit.

#### Spring session

| | |
|---|---|
| **300707.2** | Building 2 |
| **200184.3** | Introduction to Business Law |
| **200101.7** | Accounting Information for Managers |
| **200571.4** | Management Dynamics |

### Year 2

#### Autumn session

| | |
|---|---|
| **300720.3** | Construction Technology 1 (Civil) |
| **200486.3** | Quantity Surveying 1 |
| **200472.5** | Material Science in Construction |
| **300723.4** | Development Control |

#### Spring session

| | |
|---|---|
| **300721.5** | Construction Technology 2 (Substructure) |
| **200468.2** | Estimating 1 |
| **300885.3** | Building Regulations Studies |

Elective 1

### Year 3

#### Autumn session

| | |
|---|---|
| **200502.6** | Construction Technology 3 (Concrete Construction) |
| **200485.2** | Decision Making for Construction Professionals |
| **300727.4** | Project Management |
| **300728.5** | Construction Planning |

#### Spring session

| | |
|---|---|
| **200470.7** | Construction Technology 4 (Steel Construction) |
| **300886.3** | Construction in Practice 1 |
| **300053.6** | Professional Practice |
| **200292.2** | Building Law |

## Non-Honours Stream

### Year 4

#### Autumn session

| | |
|---|---|
| **200471.6** | Construction Technology 5 (Envelope) |
| **200504.5** | Construction Economics |
| **300536.6** | Major Project in Construction |

Elective 3

#### Spring session

| | |
|---|---|
| **300725.5** | Construction Technology 6 (Services) |
| **200484.7** | Construction in Practice 3 |

Elective 2

Elective 4

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated Guidelines for the admission criteria.

**Year 4 (Honours stream - H3000)**

**Autumn session**

| | |
|---|---|
| **200471.6** | Construction Technology 5 (Envelope) |
| **200504.5** | Construction Economics |
| **300675.4** | Honours Thesis |

From Autumn 2019, students are advised to take 301160 Construction Management Honours Thesis and 1 elective instead of 300675.

**Spring session**

| | |
|---|---|
| **300725.5** | Construction Technology 6 (Services) |
| **200484.7** | Construction in Practice 3 |
| **300675.4** | Honours Thesis |

From Autumn 2019, students are advised to take 301160 Construction Management Honours Thesis and 1 elective instead of 300675.

## Sub-major in Construction Economics

To graduate with a Sub-major in Construction Economics students must successfully complete four units in place of the elective units.

| | |
|---|---|
| **SM3029.1** | Construction Economics |

**From 2020, students are advised to select SM3094.**

| | |
|---|---|
| **SM3094.1** | Construction Economics |

## Industrial Experience

All students enrolled in Bachelor of Construction Management must obtain, through their own initiative, 1200 hours of construction management related employment before being eligible for graduation.

To facilitate the recording of such experience it will be necessary to enrol in 300724 Industry Based Learning and have an Industry Experience Diary signed off by the Course Coordinator.

| | |
|---|---|
| **300724.4** | Industry Based Learning |

## Sub-major elective spaces

Examples of sub majors that students could complete

| | |
|---|---|
| **SM2050.1** | Property Investment |
| **SM1093.1** | Geography and Urban Studies |

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

# Bachelor of Construction Management

## *2607.8*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2016 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course is aimed at providing the skills and abilities necessary to perform competently at a professional level in the building industry, in one or more of the following roles: Construction Managers, Project Managers, Building Supervisors, Estimators, Quantity Surveyors and Building Researchers.

Students will develop specialised skills in construction management. The Construction Management program is widely recognised for delivering the full suite of theoretical, practical, and hands-on experience in the area of construction management. Students will study four concentrated areas related to the delivery of construction projects. These are construction technology; construction economics; construction law; and construction resource management. Additionally, students will be required to undertake a total of 1,200 hours approved practical experience during the course.

There are a number of opportunities during the course for obtaining a cadetship in the building industry in areas including building surveying, construction economics, and construction management.

## Study Mode

Four years full-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Penrith Campus | Full Time | Internal |

## Accreditation

The Bachelor of Construction Management is accredited with the Australian Institute of Building. Graduates are eligible for Probationer membership with advancement to Associate membership of the Australian Institute of Quantity Surveyors (AIQS) after Assessment of Professional Competence.

## Admission

Assumed knowledge required: HSC Mathematics, Physics and English.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).

International applicants must apply directly to Western Sydney University via the International Office.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 320 credit points which include units in the recommended sequence below. Electives within the sequence may be used towards obtaining an approved Sub-major for this award.

## Recommended Sequence

## Full-time

**Year 1**

**Autumn session**

**300706.3** Building 1
**300729.3** Graphic Communication and Design
**300975.1** Professional Competencies
**300016.4** Design Science

From Autumn 2018, students are advised that 301061 Construction Work Safety will be accepted as a replacement for Design Science. Students are encouraged to complete 301061 but may graduate having completed either unit.

**Spring session**

**300707.2** Building 2
**200909.2** Enterprise Law
**200101.7** Accounting Information for Managers
**200912.1** Enterprise Leadership

**Year 2**

**Autumn session**

**300720.3** Construction Technology 1 (Civil)
**200486.3** Quantity Surveying 1
**200472.5** Material Science in Construction
**300723.4** Development Control

**Spring session**

**300721.5** Construction Technology 2 (Substructure)
**200468.2** Estimating 1
**300885.3** Building Regulations Studies

And one elective

**Year 3**

**Autumn session**

**200502.6** Construction Technology 3 (Concrete Construction)
**301105.3** Negotiation in the Built Environment
**300727.4** Project Management
**300728.5** Construction Planning

**Spring session**

**200470.7** Construction Technology 4 (Steel Construction)
**300886.3** Construction in Practice 1
**300053.6** Professional Practice
**200292.2** Building Law

## Non-Honours Stream

**Year 4**

**Autumn session**

**200471.6** Construction Technology 5 (Envelope)
**200504.5** Construction Economics
**300536.6** Major Project in Construction

And one elective

**Spring session**

**300725.5** Construction Technology 6 (Services)
**200484.7** Construction in Practice 3

And two electives

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated Guidelines for the admission criteria.

**Year 4 (Honours stream - H3000)**

**Autumn session**

**200471.6** Construction Technology 5 (Envelope)
**200504.5** Construction Economics
**300675.4** Honours Thesis

From Autumn 2019, students are advised to take 301160 Construction Management Honours Thesis and 1 elective instead of 300675.

**Spring session**

**300725.5** Construction Technology 6 (Services)
**200484.7** Construction in Practice 3
**300675.4** Honours Thesis

From Autumn 2019, students are advised to take 301160 Construction Management Honours Thesis and 1 elective instead of 300675.

## Sub-major in Construction Economics

To graduate with a Sub-major in Construction Economics students must successfully complete four units in place of the elective units.

**SM3029.1** Construction Economics

**From 2020, students are advised to select SM3094.**

**SM3094.1** Construction Economics

## Industrial Experience

All students enrolled in Bachelor of Construction Management must obtain, through their own initiative, 1200 hours of construction management related employment before being eligible for graduation.

To facilitate the recording of such experience it will be necessary to enrol in 300724 Industry Based Learning and have an Industry Experience Diary signed off by the Course Coordinator.

**300724.4** Industry Based Learning

## Optional Electives

**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Sub-major elective spaces

Examples of sub majors that students could complete

**SM2050.1** Property Investment
**SM1093.1** Geography and Urban Studies

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective sub-major via MySR.

# Bachelor of Construction Management

***2607.9***

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2017 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course is aimed at providing the skills and abilities necessary to perform competently at a professional level in the building industry, in one or more of the following roles: Construction Managers, Project Managers, Building Supervisors, Estimators, Quantity Surveyors and Building Researchers.

Students will develop specialised skills in construction management. The Construction Management program is widely recognised for delivering the full suite of theoretical, practical, and hands-on experience in the area of construction management. Students will study four concentrated areas related to the delivery of construction projects. These are construction technology; construction economics; construction law; and construction resource management. Additionally, students will be required to undertake a total of 1,200 hours approved practical experience during the course.

There are a number of opportunities during the course for obtaining a cadetship in the building industry in areas including building surveying, construction economics, and construction management.

## Study Mode

Four years full-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Penrith Campus | Full Time | Internal |

## Advanced Standing

**Successful applicants for Advanced Standing may be required to travel to different Western Sydney University campuses to complete the elements of their course.**

## Accreditation

The Bachelor of Construction Management is accredited with the Australian Institute of Building. Graduates are eligible for Probationer membership with advancement to member grades of the Australian Institute of Quantity Surveyors (AIQS) after Assessment of Professional Competence.

## Admission

Assumed knowledge required: HSC Mathematics, Physics and English.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).

International applicants must apply directly to the Western Sydney University via the International Office.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 320 credit points which include units in the recommended sequence below. Electives within the sequence may be used towards obtaining an approved Sub-major for this award.

## Recommended Sequence

## Full-time

### Year 1

#### Autumn session

**300706.3** Building 1
**300729.3** Graphic Communication and Design
**300975.1** Professional Competencies
**301061.3** Construction Work Safety

#### Spring session

**300707.2** Building 2
**200909.2** Enterprise Law

**200101.7** Accounting Information for Managers
**200912.1** Enterprise Leadership

**Year 2**

**Autumn session**

**300720.3** Construction Technology 1 (Civil)
**200486.3** Quantity Surveying 1
**200472.5** Material Science in Construction
**300723.4** Development Control

**Spring session**

**300721.5** Construction Technology 2 (Substructure)
**200468.2** Estimating 1
**300885.3** Building Regulations Studies

And one elective

**Year 3**

**Autumn session**

**200502.6** Construction Technology 3 (Concrete Construction)
**301105.3** Negotiation in the Built Environment
**300727.4** Project Management
**300728.5** Construction Planning

**Spring session**

**200470.7** Construction Technology 4 (Steel Construction)
**300886.3** Construction in Practice 1
**300053.6** Professional Practice
**200292.2** Building Law

## Non-Honours Stream

**Year 4**

**Autumn session**

**200471.6** Construction Technology 5 (Envelope)
**200504.5** Construction Economics
**300536.6** Major Project in Construction

And one elective

**Spring session**

**300725.5** Construction Technology 6 (Services)
**200484.7** Construction in Practice 3

And two electives

## Honours Stream

**Year 4**

**1H session**

**301160.4** Construction Management Honours Thesis

**Autumn session**

**200471.6** Construction Technology 5 (Envelope)
**200504.5** Construction Economics

And one elective

**2H session**

**301160.4** Construction Management Honours Thesis

**Spring session**

**300725.5** Construction Technology 6 (Services)
**200484.7** Construction in Practice 3

And one elective

## Sub-major in Construction Economics

To graduate with a Sub-major in Construction Economics students must successfully complete four units in place of the elective units.

**SM3029.1** Construction Economics

**From 2020, students are advised to select SM3094.**

**SM3094.1** Construction Economics

## Industrial Experience

All students enrolled in Bachelor of Construction Management must obtain, through their own initiative, 1200 hours of construction management related employment prior to undertaking their final year of study.

To facilitate the recording of such experience it will be necessary to enrol in 300724 Industry Based Learning and have an Industry Experience Diary signed off by the Course Coordinator.

**300724.4** Industry Based Learning

## Optional Electives

**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Examples of sub majors that students could complete

**SM2050.1** Property Investment
**SM1093.1** Geography and Urban Studies

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective sub-major via MySR.

# Bachelor of Construction Management

## *2607.10*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2018 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course is aimed at providing the skills and abilities necessary to perform competently at a professional level in the building industry, in one or more of the following roles: Construction Managers, Project Managers, Building Supervisors, Estimators, Quantity Surveyors and Building Researchers.

Students will develop specialised skills in construction management. The Construction Management program is widely recognised for delivering the full suite of theoretical, practical, and hands-on experience in the area of construction management. Students will study four concentrated areas related to the delivery of construction projects. These are construction technology; construction economics; construction law; and construction resource management. Additionally, students will be required to undertake a total of 1,200 hours approved practical experience during the course.

There are a number of opportunities during the course for obtaining a cadetship in the building industry in areas including building surveying, construction economics, and construction management.

## Study Mode

Four years full-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Penrith Campus | Full Time | Internal |

## Advanced Standing

Successful applicants for Advanced Standing may be required to travel to different Western Sydney University campuses to complete the elements of their course.

## Accreditation

The Bachelor of Construction Management is accredited with the Australian Institute of Building. Graduates are eligible for Probationer membership with advancement to member grades of the Australian Institute of Quantity Surveyors (AIQS) after Assessment of Professional Competence.

## Admission

Assumed knowledge required: HSC Mathematics, Physics and English.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to the University via the International Office.

International students applying to the University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 320 credit points which include units in the recommended sequence below. Electives within the sequence may be used towards obtaining an approved sub-major for this award.

## Recommended Sequence

## Full-time

### Year 1

#### Autumn session

**300706.3** Building 1
**300729.3** Graphic Communication and Design
**300975.1** Professional Competencies

From Autumn 2019, students are advised to select the following equivalent unit, 301213 Construction Communication, which will replace 300975 Professional Competencies.

**301213.3** Construction Communication
**301061.3** Construction Work Safety

#### Spring session

**300707.2** Building 2
**200909.2** Enterprise Law
**200101.7** Accounting Information for Managers
**200912.1** Enterprise Leadership

### Year 2

#### Autumn session

**300720.3** Construction Technology 1 (Civil)
**200486.3** Quantity Surveying 1

From Autumn 2019, students are advised to select the following equivalent unit, 301208 Building Measurement, which will replace 200486 Quantity Surveying 1.

**301208.3** Building Measurement
**200472.5** Material Science in Construction
**300723.4** Development Control

**Spring session**

**300721.5** Construction Technology 2 (Substructure)
**200468.2** Estimating 1

From Spring 2019, students are advised to select the following equivalent unit, 301207 Building Estimates and Tendering, which will replace 200468 Estimating 1.

**301207.3** Building Estimates and Tendering
**300885.3** Building Regulations Studies

And one elective

**Year 3**

**Autumn session**

**200502.6** Construction Technology 3 (Concrete Construction)
**301105.3** Negotiation in the Built Environment
**300727.4** Project Management
**300728.5** Construction Planning

**Spring session**

**200470.7** Construction Technology 4 (Steel Construction)
**300886.3** Construction in Practice 1
**300053.6** Professional Practice
**200292.2** Building Law

## Non-Honours Stream

**Year 4**

**Autumn session**

**200471.6** Construction Technology 5 (Envelope)
**200504.5** Construction Economics
**300536.6** Major Project in Construction

And one elective

**Spring session**

**300725.5** Construction Technology 6 (Services)
**200484.7** Construction in Practice 3

And two electives

## Honours Stream

**Year 4**

**1H session**

**301160.4** Construction Management Honours Thesis

**Autumn session**

**200471.6** Construction Technology 5 (Envelope)
**200504.5** Construction Economics

And one elective

**2H session**

**301160.4** Construction Management Honours Thesis

**Spring session**

**300725.5** Construction Technology 6 (Services)
**200484.7** Construction in Practice 3

And one elective

## Majors

Elective units may be used toward obtaining an approved Major (80 credit points).

**MT3036.1** Building Surveying
**MT3037.1** Quantity Surveying

## Sub-major in Construction Economics

**SM3094.1** Construction Economics

To graduate with a sub-major in Construction Economics students must successfully complete four of the following six specialist units.

Choose four of

**200503.4** Construction Information Systems
**300726.4** Estimating 2
**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects
**200487.5** Quantity Surveying 2
**300748.4** Quality and Value Management

## Industrial Experience

All students enrolled in Bachelor of Construction Management must obtain, through their own initiative, 1200 hours of construction management related employment prior to undertaking their final year of study.

To facilitate the recording of such experience it will be necessary to enrol in 300724 Industry Based Learning and have an Industry Experience Diary signed off by the Course Coordinator.

**300724.4** Industry Based Learning

## Optional Electives

**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Sub-major Elective Spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Examples of sub majors that students could complete

**SM2050.1** Property Investment
**SM1093.1** Geography and Urban Studies

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective sub-major via MySR.

## Bachelor of Construction Management (Honours)

### *3762.1*

This course will replace 2607 Bachelor of Construction Management from 2020.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course will develop the skills necessary to perform competently at a professional level in the building industry. Students will develop specialised skills in several areas alongside a broad-based view of how the construction industry operates. Four concentrated areas related to the delivery of construction projects will be studied. These are construction technology; construction economics; construction law; and construction resource management. The honours level course will ensure that students can undertake research tasks and make evidence-based decisions which relate to industry problems. Additionally, students will be required to undertake a total of 1,200 hours approved practical experience during the course.

### Study Mode
Four years full-time or eight years part-time.

### Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Penrith Campus | Full Time | Internal |

### Accreditation
The Bachelor of Construction Management (Honours) is accredited with the Australian Institute of Building. Graduates are eligible for Probationer membership with advancement to member grades of the Australian Institute of Quantity Surveyors (AIQS) after Assessment of Professional Competence.

### Admission
Assumed knowledge required: HSC Mathematics and English.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to the University via the International Office.

International students applying to the University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

### Course Structure
Qualification for this award requires the successful completion of 320 credit points which include units in the recommended sequence below. Electives within the sequence may be used towards obtaining an approved Sub-major for this award.

### Recommended Sequence

### Full-time

**Year 1**

**Autumn**

**301226.2** Residential Building
**301228.2** Drawing and CAD
**301213.3** Construction Communication
**301061.3** Construction Work Safety

**Spring**

**301227.2** Non-Residential Building
**301219.2** Building Science
**200909.2** Enterprise Law
**301062.3** Environmental Building Design

**Year 2**

**Autumn**

**301220.2** Civil and Substructure
**301208.3** Building Measurement

And two electives

**Spring**

**200101.7** Accounting Information for Managers
**301207.3** Building Estimates and Tendering

And two electives

**Year 3**

**Autumn**

**301221.1** Building Superstructure
**301229.1** Construction Project Management

And two electives

**Spring**

**200292.2** Building Law
**301230.1** Construction Scheduling

And two electives

**Year 4**

**Autumn**

**200504.5** Construction Economics
**301231.1** Residential Building Project
**301243.1** Construction Research Methods

(Note; 301243 Construction Research Methods is a 20 credit point unit)

**Spring**

**301222.1** Envelope and Services
**301232.1** Complex Building Project

Choose one of

**301223.1** Construction Research Project
**301244.1** Construction Thesis

(Note; 301223 Construction Research Project and 301244 Construction Thesis are 20 credit point units)

## Industrial Experience

All students enrolled in Bachelor of Construction Management (Honours) must obtain, through their own initiative, 1200 hours of construction management related employment prior to undertaking their final year of study.

To facilitate the recording of such experience it will be necessary to enrol in 300724 Industry Based Learning and have an Industry Experience Diary signed off by the Course Coordinator.

**300724.4** Industry Based Learning

## Major elective spaces

Elective units may be used toward obtaining an additional approved major (80 credit points).

**MT3035.1** Quantity Surveying
**MT3036.1** Building Surveying

## Optional Electives

Students may choose eight electives from the following list or any from the specialisations listed above in order to graduate without a key program. Other free electives are also available.

**301233.1** Advanced Building Measurement
**301234.1** Building Cost Studies
**301224.1** Contract Administration
**301225.2** Digital Construction
**300885.3** Building Regulations Studies
**301105.3** Negotiation in the Built Environment
**200292.2** Building Law
**301085.3** Built Heritage
**300723.4** Development Control
**301086.3** Design Brief Formulation
**301087.3** Building Design Process
**300053.6** Professional Practice
**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects

# Bachelor of Construction Management (Honours)

### *3762.2*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2021 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course will graduate students with the skills necessary to perform competently at a professional level in the building industry. Students will develop specialised skills in four concentrated areas alongside a broad-based view of the construction industry and its operations. The four concentrated areas, related to the delivery of construction projects are construction technology; construction economics; construction law; and construction resource management.

The honours component of this course develops higher level research skills as students engage in research tasks and make evidence-based decisions relate to real world industry problems. To ensure students are work ready upon graduation a total of 1,200 hours approved, mandatory practical experience is also completed during the course.

## Study Mode

Four years full-time or eight years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Parramatta Campus - Victoria Road | Part Time | Internal |
| Penrith Campus | Full Time | Internal |
| Penrith Campus | Part Time | Internal |

## Accreditation

The Bachelor of Construction Management (Honours) is accredited with the Australian Institute of Building and the Chartered Institute of Building. Graduates are eligible for Probationer membership with advancement to member grades of the Australian Institute of Quantity Surveyors (AIQS) after Assessment of Professional Competence.

## Inherent requirements

There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

## Admission

Assumed knowledge required: HSC Mathematics and English.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to the University via the International Office.

International students applying to the University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 320 credit points which include units in the recommended sequence below. Electives within the sequence may be used towards obtaining an approved Sub-major for this award.

## Recommended Sequence

## Full-time

**Year 1**

**Autumn**

| | |
|---|---|
| **301226.2** | Residential Building |
| **301228.2** | Drawing and CAD |
| **301213.3** | Construction Communication |
| **301061.3** | Construction Work Safety |

**Spring**

| | |
|---|---|
| **301227.2** | Non-Residential Building |
| **301219.2** | Building Science |
| **301224.1** | Contract Administration |
| **301062.3** | Environmental Building Design |

Western Sydney University students who maintain a minimum GPA of 6 and have completed the first year core units are eligible to transfer into the second year of 3782 Bachelor of Construction Management Advanced (Honours) provided they also get selected to a cadetship arrangement with an approved industry partner to undertake specific WIL units in this advanced course.

**Year 2**

**Autumn**

| | |
|---|---|
| **301220.2** | Civil and Substructure |
| **301208.3** | Building Measurement |

And two electives

**Spring**

| | |
|---|---|
| **200101.7** | Accounting Information for Managers |
| **301207.3** | Building Estimates and Tendering |

And two electives

**Year 3**

**Autumn**

| | |
|---|---|
| **301221.1** | Building Superstructure |
| **301229.1** | Construction Project Management |

And two electives

**Spring**

| | |
|---|---|
| **200292.2** | Building Law |
| **301230.1** | Construction Scheduling |

And two electives

**Year 4**

**Autumn**

| | |
|---|---|
| **200504.5** | Construction Economics |
| **301231.1** | Residential Building Project |
| **301243.1** | Construction Research Methods |

(Note; 301243 Construction Research Methods is a 20 credit point unit)

**Spring**

| | |
|---|---|
| **301222.1** | Envelope and Services |
| **301232.1** | Complex Building Project |

Choose one of

| | |
|---|---|
| **301223.1** | Construction Research Project |
| **301244.1** | Construction Thesis |

(Note; 301223 Construction Research Project and 301244 Construction Thesis are 20 credit point units)

## Industrial Experience

All students enrolled in Bachelor of Construction Management (Honours) must obtain, through their own initiative, 1200 hours of construction management related employment prior to undertaking their final year of study.

To facilitate the recording of such experience it will be necessary to enrol in 300724 Industry Based Learning and have an Industry Experience Diary signed off by the Course Coordinator.

| | |
|---|---|
| **300724.4** | Industry Based Learning |

## Major elective spaces

Elective units may be used toward obtaining an additional approved major (80 credit points).

| | |
|---|---|
| **MT3035.1** | Quantity Surveying |
| **MT3036.1** | Building Surveying |

## Optional Electives

Students may choose eight electives from the following list or any from the specialisations listed above in order to graduate without a key program. Other free electives are also available.

**301233.1** Advanced Building Measurement
**301234.1** Building Cost Studies
**301224.1** Contract Administration
**301225.2** Digital Construction
**300885.3** Building Regulations Studies
**301105.3** Negotiation in the Built Environment
**200292.2** Building Law
**301085.3** Built Heritage
**300723.4** Development Control
**301086.3** Design Brief Formulation
**301087.3** Building Design Process
**300053.6** Professional Practice
**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects

# Bachelor of Construction Management Studies (exit only)

### *3697.3*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year for this course is 2018 or later.

This is an early exit course only. Applicants apply to 2769.3 Bachelor of Construction Management Studies/Bachelor of Laws and exit with the Bachelor of Construction Management Studies award.

## Study Mode

Three years full-time or six years part-time.

## Admission

This course is an exit point only from 2769.3 Bachelor of Construction Management Studies/Bachelor of Laws

## Course Structure

To gain early exit from the combined degree, with a Bachelor Construction Management Studies, students are required to complete the 17 construction management studies units and the first eight law units listed in the recommended sequence below.

## Recommended Sequence

## Full-time

**Year 1**

**Autumn session**

**200977.3** Fundamentals of Australian Law
**200010.3** Criminal Law
**300706.3** Building 1
**300729.3** Graphic Communication and Design

**Spring session**

**200978.4** Legal Analysis and Critique
**200008.7** Torts Law
**300707.2** Building 2
**200101.7** Accounting Information for Managers

**Year 2**

**Autumn session**

**200011.2** Contracts
**300720.3** Construction Technology 1 (Civil)
**200486.3** Quantity Surveying 1

From Autumn 2019, students are advised to enrol in the following equivalent unit, 301208 Building Measurement, will replace 200486 Quantity Surveying

**301208.3** Building Measurement
**300723.4** Development Control

**Spring session**

**200811.6** Alternative Dispute Resolution
**300721.5** Construction Technology 2 (Substructure)
**200468.2** Estimating 1

From Spring 2019, students are advised to select the following equivalent unit, 301207 Building Estimates and Tendering, which will replace 200468 Estimating 1.

**301207.3** Building Estimates and Tendering
**300885.3** Building Regulations Studies

**Year 3**

**Autumn session**

**200020.5** Professional Responsibility and Legal Ethics
**200502.6** Construction Technology 3 (Concrete Construction)
**300727.4** Project Management
**300728.5** Construction Planning

**Spring session**

**200984.1** Government and Public Law
**200470.7** Construction Technology 4 (Steel Construction)
**300536.6** Major Project in Construction
**200484.7** Construction in Practice 3

And

**300724.4** Industry Based Learning

(1200 hours) (0 credit points)

# Bachelor of Construction Management Studies (exit only)

### *3697.4*

Students should follow the course structure for the course version relevant to the year they commenced. This version

applies to students whose commencement year for this course is 2020 or later.

This is an early exit course only. Applicants apply to 2769.4 - Bachelor of Construction Management Studies/Bachelor of Laws and exit with the Bachelor of Construction Management Studies award.

## Study Mode

Three years full-time or six years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Parramatta Campus - Victoria Road | Part Time | Internal |
| Penrith Campus | Full Time | Internal |
| Penrith Campus | Part Time | Internal |

## Admission

This course is an exit point only from 2769.4 Bachelor of Construction Management Studies/Bachelor of Laws

## Course Structure

To gain early exit from the combined degree, with a Bachelor Construction Management Studies, students are required to complete the 17 construction management studies units and the first eight law units listed in the recommended sequence below.

## Recommended Sequence

## Full-time

### Year 1

#### Autumn session

| | |
|---|---|
| 200977.3 | Fundamentals of Australian Law |
| 200010.3 | Criminal Law |
| 301226.2 | Residential Building |
| 301228.2 | Drawing and CAD |

#### Spring session

| | |
|---|---|
| 200978.4 | Legal Analysis and Critique |
| 200008.7 | Torts Law |
| 301227.2 | Non-Residential Building |
| 200101.7 | Accounting Information for Managers |

### Year 2

#### Autumn session

| | |
|---|---|
| 200011.2 | Contracts |
| 301208.3 | Building Measurement |
| 300723.4 | Development Control |

Choose one of

| | |
|---|---|
| 300748.4 | Quality and Value Management |
| 301224.1 | Contract Administration |

#### Spring session

| | |
|---|---|
| 200811.6 | Alternative Dispute Resolution |
| 301220.2 | Civil and Substructure |
| 301207.3 | Building Estimates and Tendering |
| 300885.3 | Building Regulations Studies |

### Year 3

#### Autumn session

| | |
|---|---|
| 200020.5 | Professional Responsibility and Legal Ethics |
| 301221.1 | Building Superstructure |
| 301229.1 | Construction Project Management |
| 301230.1 | Construction Scheduling |

#### Spring session

| | |
|---|---|
| 200984.1 | Government and Public Law |
| 300536.6 | Major Project in Construction |
| 301232.1 | Complex Building Project |

Choose one of

| | |
|---|---|
| 301158.3 | Modern Construction Enterprises |
| 301225.2 | Digital Construction |

and

| | |
|---|---|
| 300724.4 | Industry Based Learning |

(1200 hours) (0 credit points)

# Bachelor of Construction Management Studies (exit only)

## *3697.5*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year for this course is 2021 or later.

This is an early exit course only. Applicants apply to 2769.5 - Bachelor of Construction Management Studies/Bachelor of Laws and exit with the Bachelor of Construction Management Studies award.

## Study Mode

Three years full-time or six years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Parramatta Campus - Victoria Road | Part Time | Internal |
| Penrith Campus | Full Time | Internal |
| Penrith Campus | Part Time | Internal |

## Course Structure

To gain early exit from the combined degree, with a Bachelor Construction Management Studies, students are required to complete the 17 construction management studies units and the first eight law units listed in the recommended sequence below.

## Recommended Sequence

## Full-time

**Year 1**

**Autumn session**

| | |
|---|---|
| **200977.3** | Fundamentals of Australian Law |
| **200010.3** | Criminal Law |
| **301226.2** | Residential Building |
| **301228.2** | Drawing and CAD |

**Spring session**

| | |
|---|---|
| **200978.4** | Legal Analysis and Critique |
| **200008.7** | Torts Law |
| **301227.2** | Non-Residential Building |
| **200101.7** | Accounting Information for Managers |

**Year 2**

**Autumn session**

| | |
|---|---|
| **200011.2** | Contracts |
| **301208.3** | Building Measurement |
| **300723.4** | Development Control |
| **301220.2** | Civil and Substructure |

**Spring session**

| | |
|---|---|
| **200811.6** | Alternative Dispute Resolution |
| **301224.1** | Contract Administration |
| **301207.3** | Building Estimates and Tendering |
| **300885.3** | Building Regulations Studies |

**Year 3**

**Autumn session**

| | |
|---|---|
| **200020.5** | Professional Responsibility and Legal Ethics |
| **301221.1** | Building Superstructure |
| **301229.1** | Construction Project Management |
| **301231.1** | Residential Building Project |

**Spring session**

| | |
|---|---|
| **200984.1** | Government and Public Law |
| **301222.1** | Envelope and Services |
| **301232.1** | Complex Building Project |
| **301230.1** | Construction Scheduling |

and

| | |
|---|---|
| **300724.4** | Industry Based Learning |

(1200 hours) (0 credit points)

# Bachelor of Construction Technology

## *3692.3*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2017 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course provides the skills and abilities necessary to perform competently at a professional level in the residential construction industry, in one or more of the following roles: Site Manager, Building Supervisor, Estimator and Building Surveyor. Students will develop specialised skills in construction management. The Construction Technology program is widely recognised for delivering the full suite of theoretical, practical, and hands-on experience in the area of residential construction. Students will study four concentrated areas related to the delivery of residential construction projects. These are construction technology; construction economics; construction law; and construction resource management. There may be a number of opportunities during the course to obtain a cadetship in the building industry in areas including project home building, building surveying and residential development. The three year Bachelor of Construction Technology program may be used as a pathway to the four year Bachelor of Construction Management program which meets the Australian Institute of Building (AIB) professional accreditation requirements.

## Study Mode

Three years full-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Penrith Campus | Full Time | Internal |

## Advanced Standing

Successful applicants for Advanced Standing may be required to travel to different Western Sydney University campuses to complete the elements of their course.

## Admission

Assumed knowledge required: Normal Western Sydney University ATAR score with HSC 2 unit Mathematics, Physics and English for entry into first year.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below.

## Recommended Sequence

**Year 1**

**Autumn session**

**300706.3** Building 1
**300729.3** Graphic Communication and Design
**300975.1** Professional Competencies

From Autumn 2019, students are advised to select the following equivalent unit, 301213 Construction Communication, which will replace 300975 Professional Competencies.

**301213.3** Construction Communication
**301061.3** Construction Work Safety

**Spring session**

**200909.2** Enterprise Law
**200101.7** Accounting Information for Managers
**300707.2** Building 2
**200912.1** Enterprise Leadership

**Year 2**

**Autumn session**

**300720.3** Construction Technology 1 (Civil)
**200486.3** Quantity Surveying 1

From Autumn 2019, students are advised to select the following equivalent unit, 301208 Building Measurement, which will replace 200486 Quantity Surveying 1.

**301208.3** Building Measurement
**200472.5** Material Science in Construction
**300723.4** Development Control

**Spring session**

**300721.5** Construction Technology 2 (Substructure)
**200468.2** Estimating 1

From Spring 2019, students are advised to select the following equivalent unit, 301207 Building Estimates and Tendering, which will replace 200468 Estimating 1.

**301207.3** Building Estimates and Tendering
**300885.3** Building Regulations Studies

And Elective 1

**Year 3**

**Autumn session**

**301105.3** Negotiation in the Built Environment
**300727.4** Project Management
**300728.5** Construction Planning

And Elective 2

**Spring session**

**300886.3** Construction in Practice 1
**300053.6** Professional Practice
**200292.2** Building Law

And Elective 3

**Please note**

Students may choose electives from any of The University`s courses, including the following units

**Elective 1 Options**

Choose one of

**200503.4** Construction Information Systems
**301062.3** Environmental Building Design

**Elective 2 Options**

**200502.6** Construction Technology 3 (Concrete Construction)
**300748.4** Quality and Value Management

**Elective 3 Options**

Choose one of

**200470.7** Construction Technology 4 (Steel Construction)
**200487.5** Quantity Surveying 2

Bachelor of Construction Technology students wishing to continue on to gain Bachelor of Construction Management are required to undertake the following electives

**200502.6** Construction Technology 3 (Concrete Construction)
**200470.7** Construction Technology 4 (Steel Construction)

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

# Bachelor of Construction Technology

### *3692.4*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2020 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course provides the skills and abilities necessary to perform competently at a professional level in the construction industry in many roles including; Site Manager,

Building Supervisor, Estimator and Building Surveyor. The Construction Technology program is widely recognised for delivering the full suite of theoretical, practical, and hands-on experience in the area of residential construction. Students will study four concentrated areas related to the delivery of projects; construction technology, construction economics, construction law and construction resource management. This program may be used as a pathway to the four-year Bachelor of Construction Management program which meets the Australian Institute of Building (AIB) professional accreditation requirements.

## Study Mode

Three years full-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Penrith Campus | Full Time | Internal |

## Admission

Assumed knowledge required: Normal Western Sydney University ATAR score with HSC 2 unit Mathematics, Physics and English for entry into first year.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to the University via the International Office.

International students applying to the University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below.

## Recommended Sequence

### Year 1

#### Autumn session

| | |
|---|---|
| 301226.2 | Residential Building |
| 301228.2 | Drawing and CAD |
| 301213.3 | Construction Communication |
| 301061.3 | Construction Work Safety |

#### Spring session

| | |
|---|---|
| 200909.2 | Enterprise Law |
| 301062.3 | Environmental Building Design |
| 301227.2 | Non-Residential Building |
| 301219.2 | Building Science |

### Year 2

#### Autumn session

| | |
|---|---|
| 301220.2 | Civil and Substructure |
| 301208.3 | Building Measurement |
| 300723.4 | Development Control |

And one elective

#### Spring session

| | |
|---|---|
| 200101.7 | Accounting Information for Managers |
| 301207.3 | Building Estimates and Tendering |
| 300885.3 | Building Regulations Studies |

And one elective

### Year 3

#### Autumn session

| | |
|---|---|
| 301105.3 | Negotiation in the Built Environment |
| 301229.1 | Construction Project Management |
| 301221.1 | Building Superstructure |

And one elective

#### Spring session

| | |
|---|---|
| 301230.1 | Construction Scheduling |
| 300053.6 | Professional Practice |
| 200292.2 | Building Law |

And one elective

#### Please note

Students may choose electives from any course at Western Sydney University

# Bachelor of Construction Technology

## *3692.5*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2021 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course provides the skills and abilities necessary to perform competently at a professional level in the construction industry in many roles including; Site Manager, Building Supervisor, Estimator and Building Surveyor. The Construction Technology program is widely recognised for delivering the full suite of theoretical, practical, and hands-on experience in the area of residential construction.

Students will study four concentrated areas related to the delivery of projects; construction technology, construction economics, construction law and construction resource management. This program may be used as a pathway to the four-year Bachelor of Construction Management program which meets the Australian Institute of Building (AIB) professional accreditation requirements.

## Study Mode

Three years full-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Penrith Campus | Full Time | Internal |

## Inherent requirements

There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

## Admission

Assumed knowledge required: Normal Western Sydney University ATAR score with HSC 2 unit Mathematics, Physics and English for entry into first year.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to the University via the International Office.

International students applying to the University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below.

## Recommended Sequence

### Year 1

#### Autumn session

| | |
|---|---|
| 301226.2 | Residential Building |
| 301228.2 | Drawing and CAD |
| 301213.3 | Construction Communication |
| 301061.3 | Construction Work Safety |

#### Spring session

| | |
|---|---|
| 301224.1 | Contract Administration |
| 301062.3 | Environmental Building Design |
| 301227.2 | Non-Residential Building |
| 301219.2 | Building Science |

### Year 2

#### Autumn session

| | |
|---|---|
| 301220.2 | Civil and Substructure |
| 301208.3 | Building Measurement |
| 300723.4 | Development Control |

And one elective

#### Spring session

| | |
|---|---|
| 200101.7 | Accounting Information for Managers |
| 301207.3 | Building Estimates and Tendering |
| 300885.3 | Building Regulations Studies |

And one elective

### Year 3

#### Autumn session

| | |
|---|---|
| 301105.3 | Negotiation in the Built Environment |
| 301229.1 | Construction Project Management |
| 301221.1 | Building Superstructure |

And one elective

#### Spring session

| | |
|---|---|
| 301230.1 | Construction Scheduling |
| 300053.6 | Professional Practice |
| 200292.2 | Building Law |

And one elective

#### Please note

Students may choose electives from any course at Western Sydney University

# Bachelor of Design and Technology

## *3729.2*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2018 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course prepares students for a career in industrial design and/or industrial graphics. This is achieved by providing a sound knowledge of units in a broad range of design disciplines, including design methodology, design innovation, product design, ergonomics, manufacturing technology and design, management, 2D and 3D CAD. Students interested in a teaching career in Design and

Technology may take the Master of Teaching degree after completing their Design and Technology degree.

The program provides an array of three majors (Graphics and Visualisation, Design Management and Entrepreneurship, and Design-Led Innovation and Management) and five sub-majors (Visualisation, Human Interaction, Industrial Manufacturing, Design Management, Responsible Design and Sustainability). The course pathway is transformative by practice on progressive priorities of product, process, people and place. In first year, it introduces students to the basic skills of making products, design thinking and literacy, physical and digital methods, professional standards, and essential foundation knowledge of science and mathematics for industrial design. In second year, the program takes students deeper into the profession by working on design process through design management, visualisation, human-computer interaction and sustainable design. In third year, the program brings students to consolidate competencies and expertise by focusing on people, place and socio-cultural context as critical components of the design problem. Students are expected to complete an incremental process of industrial experience by this year. They are also required to undertake a sub-major from different streams within the program to complete the course.

## Study Mode

Three years full-time or six years part-time.

## Advanced Standing

Successful applicants for Advanced Standing may be required to travel to different Western Sydney University campuses to complete the elements of their course.

## Accreditation

Graduates are eligible for membership of the Design Institute of Australia (DIA).

## Admission

Assumed knowledge: any two units of English plus at least two units of Design, Design and Technology, Visual Arts, Digital Multimedia, Engineering, or Business Studies.

Alternate Entry

Entry by interview in which personal aptitude, professional experience, and educational qualifications are taken into consideration supported by a portfolio of works. After applicants have applied they are required to book an interview and download a questionnaire at this University's online booking system.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below.

To be eligible to graduate from this course, students are required to complete a sub-major from the list below.

## Start year Intake

### Year 1

#### Autumn session

| | |
|---|---|
| **301030.3** | Introduction to Industrial Design Methods |
| **300016.4** | Design Science |
| **301073.2** | Design Studio 1: Patterns and Products |
| **301074.3** | Graphics 1: 2D and 3D Industrial Design Communication |

#### Spring session

| | |
|---|---|
| **301075.3** | Design Studio 2: Form and Production |
| **301076.3** | Graphics 2: Visual Simulation |
| **301095.2** | Sustainable Design 1: Materials and Technology |
| **301077.2** | Mathematics for Industrial Design |

### Year 2

#### Autumn session

| | |
|---|---|
| **301078.2** | Design Studio 3: Design, Process and Function |
| **301079.3** | Graphics 3: 3D Engineering Specifications and Visualisation |
| **300570.4** | Human-Computer Interaction |

And one majorsub-major alternate unit or elective

#### Spring session

| | |
|---|---|
| **301080.2** | Design Studio 4: Innovation through Systems Thinking |
| **301081.3** | Sustainable Design 2: Product Service Systems |
| **301082.2** | Design Management 2: Operation and Supply Chain |

And one major/sub-major alternate unit or elective

### Year 3

#### Autumn session

| | |
|---|---|
| **301083.3** | Design Studio 5: Symbol and Meaning Making |
| **300014.4** | Design Management 3: Organisational Skills for Designers |

And two major/sub-major alternate units or electives

**Spring session**

**301084.3** Design Studio 6: Ambience, Place and Behaviour
**301090.2** Contextual Inquiry

And two major/sub-major alternate units or electives

**Industrial Experience**

**300775.3** Industrial Experience

## Mid-year Intake

**Year 1**

**Spring session**

**301075.3** Design Studio 2: Form and Production
**301076.3** Graphics 2: Visual Simulation
**301095.2** Sustainable Design 1: Materials and Technology
**301077.2** Mathematics for Industrial Design

**Autumn session**

**301030.3** Introduction to Industrial Design Methods
**301079.3** Graphics 3: 3D Engineering Specifications and Visualisation
**301073.2** Design Studio 1: Patterns and Products
**301074.3** Graphics 1: 2D and 3D Industrial Design Communication

**Year 2**

**Spring session**

**301080.2** Design Studio 4: Innovation through Systems Thinking
**301081.3** Sustainable Design 2: Product Service Systems
**301082.2** Design Management 2: Operation and Supply Chain

And one major/sub-major alternate unit or elective

**Autumn session**

**301078.2** Design Studio 3: Design, Process and Function
**300016.4** Design Science
**300570.4** Human-Computer Interaction

And one major/sub-major alternate unit or elective

**Industrial Experience**

**300775.3** Industrial Experience

**Year 3**

**Spring session**

**301084.3** Design Studio 6: Ambience, Place and Behaviour
**301090.2** Contextual Inquiry

And two major/sub-major alternate units or electives

**Autumn session**

**301083.3** Design Studio 5: Symbol and Meaning Making
**300014.4** Design Management 3: Organisational Skills for Designers

And two major/sub-major alternate units or electives

## Majors and Sub-majors

The Bachelor of Design and Technology is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific Majors and Sub-majors.

## Majors

**M3091.1** Visualisation and Graphics
**M3092.1** Design Management and Entrepreneurship
**M3093.1** Design-led Innovation and Management

**Note: From 2020 students are advised to select from the following Majors**

**M3123.1** Visualisation and Graphics
**M3124.1** Design Management and Entrepreneurship
**M3125.1** Design-led Innovation & Management

## Sub-majors

**SM3084.1** Visualisation
**SM3085.1** Human-Computer Interaction
**SM3086.1** Industrial Manufacturing
**SM3087.1** Design Management
**SM3088.1** Responsible Design and Sustainability

**Note: From 2020 students are advised to select from the following Sub-Majors**

**SM3107.1** Visualisation
**SM3085.1** Human-Computer Interaction
**SM3108.1** Industrial Manufacturing
**SM3109.1** Design Management
**SM3110.1** Responsible Design and Sustainability

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

# Bachelor of Design and Technology

### *3729.3*

Students should follow the course structure for the course version relevant to the year they commenced. This version

applies to students whose commencement year in this course is 2020 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This degree prepares students for careers in product design, design visualisation and design innovation. This is achieved through learning a broad range of design disciplines, design methodologies, human factors in design, emergent technologies, design management,2D and 3D CAD. Students develop skills in making products using design literacies, physical and digital methods, knowledge of professional standards, and essential foundation knowledge for design practice. Students acquire a deeper professional understanding by working on design process through new design form exploration, applied sustainability methods, contextual research, advanced prototyping and self-selected flexible specialisations. Throughout the course students incorporate people, place and socio-cultural contexts as critical components of a design problem.

## Study Mode

Three years full-time or six years part-time.

## Accreditation

Graduates are eligible for membership of the Design Institute of Australia (DIA).

## Admission

Assumed knowledge: any two units of English plus at least two units of Design, Design and Technology, Visual Arts, Digital Multimedia, Engineering, or Business Studies.

Alternate Entry

Entry by interview in which personal aptitude, professional experience, and educational qualifications are taken into consideration supported by a portfolio of works. After applicants have applied they are required to book an interview and download a questionnaire at this University's online booking system.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Students may be required to travel to different Western Sydney University campuses to complete the elements of their course.

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below.

To be eligible to graduate from this course, students are required to complete a sub-major from the list below.

## Start year Intake

### Year 1

#### Autumn session

| | |
|---|---|
| **301280.2** | Human Centred Design Research Methods |
| **301281.2** | Designing for Circular Economy |
| **301282.2** | Co-Designing Change with Local Communities |
| **301283.2** | Design Graphics: Presenting Innovation |

#### Spring session

| | |
|---|---|
| **301284.2** | Designing for User Experience (UX) |
| **301285.2** | Drawing Skills for Design Thinking |
| **301286.2** | Designing for People: Applied Ergonomics |
| **301287.2** | Design Graphics: Engineering Documentation |

### Year 2

#### Autumn session

| | |
|---|---|
| **301288.2** | Sustainable Materials and Smart Manufacturing |
| **301289.2** | Design Semantics: Exploring Product Form |
| **301290.2** | Design Graphics: Communication for Manufacture |

And one sub-major or elective unit

#### Spring session

| | |
|---|---|
| **301292.2** | Biomechanics in Product Innovation |
| **301293.2** | Designing for Circular Economy (Advanced) |

And two sub-major or elective units

From 2021, 301291 Design Research Methods (Advanced) is only offered in Autumn. Students should now select this unit in the following Autumn session.

### Year 3

#### Autumn session

| | |
|---|---|
| **301294.3** | Studio: Interdisciplinary Global |
| **301291.3** | Design Research Methods (Advanced) |

And two major, sub-major or Elective units

#### Spring session

| | |
|---|---|
| **301295.1** | Studio: Design Synthesis Capstone |

From Spring 2021, 301295 is replaced by 301402 Studio: Design Synthesis Capstone. Students are advise to select 301402.

**301402.1** Studio: Design Synthesis Capstone

And one sub-major or elective unit

And one elective unit

**Industrial Experience**

**301296.2** Mentored Practice in Design Innovation

From Spring 2021, 301296 is replaced by 301401 Mentored Practice in Design Innovation. Students are advise to select 301401.

**301401.1** Mentored Practice in Design Innovation

## Mid-year Intake

**Year 1**

**Spring session**

**301284.2** Designing for User Experience (UX)
**301285.2** Drawing Skills for Design Thinking
**301286.2** Designing for People: Applied Ergonomics
**301287.2** Design Graphics: Engineering Documentation

**Autumn session**

**301280.2** Human Centred Design Research Methods
**301281.2** Designing for Circular Economy
**301283.2** Design Graphics: Presenting Innovation
**301290.2** Design Graphics: Communication for Manufacture

**Year 2**

**Spring session**

**301292.2** Biomechanics in Product Innovation

And two sub-major or elective units

And one elective unit

**Autumn session**

**301282.2** Co-Designing Change with Local Communities
**301288.2** Sustainable Materials and Smart Manufacturing
**301289.2** Design Semantics: Exploring Product Form

And one sub-major or elective unit

**Year 3**

**Spring session**

**301295.1** Studio: Design Synthesis Capstone

From Spring 2021, 301295 is replaced by 301402 Studio: Design Synthesis Capstone. Students are advise to select 301402.

**301402.1** Studio: Design Synthesis Capstone
**301293.2** Designing for Circular Economy (Advanced)

And two sub-major or elective units

From 2021, 301291 Design Research Methods (Advanced) is only offered in Autumn. Students should now select this unit in the following Autumn session.

**Autumn session**

**301294.3** Studio: Interdisciplinary Global
**301291.3** Design Research Methods (Advanced)

One sub-major or elective unit

**Industrial Experience**

**301296.2** Mentored Practice in Design Innovation

From Spring 2021, 301296 is replaced by 301401 Mentored Practice in Design Innovation. Students are advise to select 301401.

**301401.1** Mentored Practice in Design Innovation

## Sub-majors

The Bachelor of Design and Technology is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific Sub-majors.

## Sub-majors

**SM3103.1** Digital Innovation
**SM3104.1** Design Practice
**SM3105.1** Strategic Design Management
**SM3106.1** Sustainable Futures

# Bachelor of Design and Technology

***3729.4***

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2021 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

The Design and Technology degree provides a sound knowledge in a broad range of work-ready design skills, including thinking methods, drawing skills for creativity, design innovation, product design, human factors, design management, and 2D and 3D CAD. This course can lead to multiple career outcomes, including product design, packaging, 3D modelling, rapid prototyping with 3D printing, design for sustainability, new product-oriented Start-Up, or secondary school teaching (with additional qualifications). Specialisation study includes Design Practice, Graphic Design, Cultural Studies, UX, Manufacturing, and Sustainable Futures. Students wishing to become industrial designers can articulate in the fourth year of the Bachelor of Industrial Design.

**Parts of this course may be taught at the Parramatta City - Hassall St campus or at the Parramatta South campus.**

## Study Mode

Three years full-time or six years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta City Campus-Macquarie Street | Full Time | Internal |
| Parramatta City Campus-Macquarie Street | Part Time | Internal |

## Accreditation

Graduates are eligible for membership of the Design Institute of Australia (DIA)

## Admission

Assumed knowledge: any two units of English plus at least two units of Design, Design and Technology, Visual Arts, Digital Multimedia, Engineering, or Business Studies.

Alternate Entry

Entry by interview in which personal aptitude, professional experience, and educational qualifications are taken into consideration supported by a portfolio of works. After applicants have applied they are required to book an interview and download a questionnaire at this University's online booking system.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International students applying to the University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website

International Office

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University

## Course Structure

Students may be required to travel to different Western Sydney University campuses to complete the elements of their course.

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below.

**Parts of these units may be taught at the Parramatta City - Hassall St campus or at the Parramatta South campus.**

## Start year Intake

### Year 1

#### Autumn session

| | |
|---|---|
| 301280.2 | Human Centred Design Research Methods |
| 301281.2 | Designing for Circular Economy |
| 301282.2 | Co-Designing Change with Local Communities |
| 301283.2 | Design Graphics: Presenting Innovation |

#### Spring session

| | |
|---|---|
| 301284.2 | Designing for User Experience (UX) |
| 301285.2 | Drawing Skills for Design Thinking |
| 301286.2 | Designing for People: Applied Ergonomics |
| 301287.2 | Design Graphics: Engineering Documentation |

### Year 2

#### Autumn session

| | |
|---|---|
| 301288.2 | Sustainable Materials and Smart Manufacturing |
| 301289.2 | Design Semantics: Exploring Product Form |
| 301290.2 | Design Graphics: Communication for Manufacture |

And one Major, Sub-Major or Alternate units

#### Spring session

| | |
|---|---|
| 301292.2 | Biomechanics in Product Innovation |
| 301301.2 | Design Thinking for Successful Brands and Products |

And two Major, Sub-Major or Alternate units

### Year 3

#### Autumn session

| | |
|---|---|
| 301294.3 | Studio: Interdisciplinary Global |

And three Major, Sub-Major or Alternte units

#### Spring session

| | |
|---|---|
| 301402.1 | Studio: Design Synthesis Capstone |
| 301306.2 | Simulation in Virtual and Augmented Realities |

And two Major, Sub-Major or Alternate units

#### Autumn Alternate Unit Pool

| | |
|---|---|
| 301308.2 | Design Practice: Sustainable Manufacturing |
| 101755.2 | From Ochre to Acrylics to New Technologies |
| 101751.2 | Contextualising Indigenous Australia (Day Mode) |
| 200863.1 | Leadership and Entrepreneurship |
| 101184.4 | Psychology: Human Behaviour |
| 101569.3 | Sustainable Futures |
| 301291.3 | Design Research Methods (Advanced) |

**Spring Alternate Unit Pool**

| | |
|---|---|
| 301293.2 | Designing for Circular Economy (Advanced) |
| 301165.3 | Incubator 1: Innovation and Creativity for Entrepreneurship |
| 301401.1 | Mentored Practice in Design Innovation |
| 301309.2 | Design Practice: Sustainable Components |
| 301304.2 | Start-Up Product Launch |
| 301062.3 | Environmental Building Design |

## Full-Time Mid-year Intake

**Year 1**

**Spring session**

| | |
|---|---|
| 301284.2 | Designing for User Experience (UX) |
| 301285.2 | Drawing Skills for Design Thinking |
| 301286.2 | Designing for People: Applied Ergonomics |
| 301287.2 | Design Graphics: Engineering Documentation |

**Autumn session**

| | |
|---|---|
| 301280.2 | Human Centred Design Research Methods |
| 301281.2 | Designing for Circular Economy |
| 301283.2 | Design Graphics: Presenting Innovation |
| 301290.2 | Design Graphics: Communication for Manufacture |

**Year 2**

**Spring session**

| | |
|---|---|
| 301292.2 | Biomechanics in Product Innovation |
| 301301.2 | Design Thinking for Successful Brands and Products |

And two Major, Sub-Major or Alternate units

**Autumn session**

| | |
|---|---|
| 301282.2 | Co-Designing Change with Local Communities |
| 301288.2 | Sustainable Materials and Smart Manufacturing |
| 301289.2 | Design Semantics: Exploring Product Form |

And one Major, Sub-Major orAlternatie units

**Year 3**

**Spring session**

| | |
|---|---|
| 301402.1 | Studio: Design Synthesis Capstone |
| 301306.2 | Simulation in Virtual and Augmented Realities |

And two Major, Sub-Majoror Alternate units

**Autumn Session**

| | |
|---|---|
| 301294.3 | Studio: Interdisciplinary Global |

And three Major, Sub-Major or Alternate units

**Autumn Aternate Unit Pool**

| | |
|---|---|
| 301308.2 | Design Practice: Sustainable Manufacturing |
| 101755.2 | From Ochre to Acrylics to New Technologies |
| 101751.2 | Contextualising Indigenous Australia (Day Mode) |
| 200862.1 | Creating Change and Innovation |
| 200863.1 | Leadership and Entrepreneurship |
| 101184.4 | Psychology: Human Behaviour |
| 101569.3 | Sustainable Futures |
| 301291.3 | Design Research Methods (Advanced) |

**Spring Alternate Unit Pool**

| | |
|---|---|
| 301293.2 | Designing for Circular Economy (Advanced) |
| 301165.4 | Incubator 1: Innovation and Creativity for Entrepreneurship |
| 301401.1 | Mentored Practice in Design Innovation |
| 301309.2 | Design Practice: Sustainable Components |
| 301304.2 | Start-Up Product Launch |
| 301062.3 | Environmental Building Design |

**Majors and Sub-majors**

The Bachelor of Design and Technology is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

| | |
|---|---|
| **M3129.1** | Design Practice |
| **M3126.1** | Technology Entrepreneurship |
| **SM3111.1** | Design Practice |
| **SM3112.1** | Sustainable Futures |
| **SM3094.1** | Construction Economics |
| **SM1049.1** | Indigenous Australian Studies |
| **SM1068.1** | Social Ecology |
| **SM1070.1** | Cultural and Social Analysis |
| **SM2052.1** | Business Studies for Secondary Teaching |
| **SM1118.1** | Graphic Design |

## Bachelor of Engineering

### *3621.7*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2013 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course has two intakes - Start year (Autumn) and Mid year (Spring). Students will need to check the entry relevant to their intake

The Bachelor of Engineering course is a four year course. It has a common first year program for all engineering disciplines and it also shares two units with the Bachelor of Industrial Design and three units with the Bachelor of Construction Management, exposing students to a wide range of experiences in the first year. Students have the opportunity to focus on an area of speciality by undertaking a key program in the disciplines of Civil, Computer, Construction, Electrical, Environmental, Mechanical, Robotics & Mechatronics, and Telecommunications. Sub-majors can be chosen from a range that will compliment

their specialist discipline. Students also have an opportunity to broaden their experience by choosing sub-majors from other disciplines or alternately outside the School. An honours stream is offered, based on meritorious performance over the first three years of the course.

## Study Mode

Four years full-time or part-time equivalent.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Penrith Campus | Full Time | Internal |

## Accreditation

The course has been designed to meet the requirements of Engineers Australia at the level of Professional Engineer.

## Inherent requirements

There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

## Admission

Assumed knowledge required: Mathematics at Band 5 or higher, any two units of Science and any two units of English.

Recommended studies: Physics and HSC Mathematics extension 1 or HSC Mathematics Extension 2.

Background knowledge on calculus and physics is desirable.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office. International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

## Academic Course Advisor

Dr Pan Hu is the Academic Course Advisor for Key Programs in Civil and Construction at Penrith and Sydney City Campuses.

Dr Won Hee Kang is the Academic Course Advisor for Key Programs in Civil and Construction at Parramatta South Campus.

Dr Qi Cheng is the Academic Course Advisor for Key Programs in Electrical at Parramatta, Penrith and Sydney City Campuses.

Dr Leo Zhang is the Academic Course Advisor for Key Programs in Mechanical and Mechatronic at Parramatta, Penrith and Sydney City Campuses.

## Recommended Sequence

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequences below.

## Full-time - Autumn intake

**Year 1**

**Autumn session**

| | |
|---|---|
| **200237.5** | Mathematics for Engineers 1 |
| **300464.2** | Physics and Materials |
| **300027.4** | Engineering Computing |
| **300674.2** | Engineering, Design and Construction Practice |

**Spring session**

| | |
|---|---|
| **200238.3** | Mathematics for Engineers 2 |
| **300463.4** | Fundamentals of Mechanics |
| **300021.4** | Electrical Fundamentals |
| **300462.3** | Engineering and Design Concepts |

**Year 2 - Year 4**

**Students must then select one of the following Key Programs**

| | |
|---|---|
| **KT3043.1** | Civil |
| **KT3026.1** | Construction |
| **KT3102.1** | Electrical |
| **KT3042.1** | Mechanical |
| **KT3045.1** | Robotics and Mechatronics |

**The following Key Programs are not available from 2014**

| | |
|---|---|
| **KT3046.1** | Computer |
| **KT3089.1** | Environmental |
| **KT3103.1** | Telecommunications |

## Recommended Sequence

## Full-time - Spring Intake

The sequence of units for Year 1 Spring Intake is different for each Key Program. Please see details under each Key Program link above.

## Sub-majors

The following Sub-majors are available to all undergraduate students apart from students studying the same Key Program discipline. However, some of the units in the Sub-majors may need prerequisites, which could restrict their selection to Engineering students. Please seek advice from the Academic Course Advisor.

| | |
|---|---|
| **SM3621CIVE.1** | Civil Engineering |
| **SM3032.1** | Computer Engineering |
| **SM3033.1** | Construction |

| | |
|---|---|
| **SM3621ECOE.1** | Ecological Engineering |
| **SM3034.1** | Electrical Engineering |
| **SM3035.1** | Environmental Engineering |
| **SM3621R&M.1** | Robotics and Mechatronics |
| **SM3621SOE.1** | Soil Engineering |
| **SM3621STRE.1** | Structural Engineering |
| **SM3621WATE.1** | Water Engineering |

### Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

## Bachelor of Engineering

### *3689.1*

This course has two intakes - Start year (Autumn) and Mid year (Spring). Students will need to check the entry relevant to their intake.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

The Bachelor of Engineering is a four year degree program with common first year structure. The program has been designed to meet Engineers Australia professional accreditation requirements. It allows students the opportunity to choose a discipline area by selecting a key program in Civil, Construction, Electrical, Mechanical, and Robotic & Mechatronic engineering. In addition, students can specialise by selecting a sub-major from a wide range of recommended unit sets that will compliment their chosen discipline. An honours stream is available to students during fourth year of their study; students will be invited to undertake honours thesis based on overall academic performance in the first three years of their engineering study.

### Study Mode

Four years full-time or part-time equivalent.

### Location

| Campus | Attendance | Mode |
|---|---|---|
| Penrith Campus | Full Time | Internal |

### Accreditation

Graduates of this program are eligible to apply for full membership of Engineers Australia. They are eligible to apply for Chartered Professional Engineering registration upon successful completion of required engineering practice period specified by Engineers Australia.

### Inherent requirements

There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

### Admission

Recommended studies: Physics and HSC Mathematics extension 1 or HSC Mathematics Extension 2.

Assumed knowledge required: Two units of Science, two units of English and Mathematics (not General Mathematics) at Band 5 or higher.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office. International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

### Course Structure

### Academic Course Advisor

Dr Pan Hu is the Academic Course Advisor for Key Programs in Civil and Construction at Penrith and Sydney City Campuses.

Dr Won Hee Kang is the Academic Course Advisor for Key Programs in Civil and Construction at Parramatta South Campus.

Dr Qi Cheng is the Academic Course Advisor for Key Programs in Electrical at Parramatta, Penrith and Sydney City Campuses.

Dr Leo Zhang is the Academic Course Advisor for Key Programs in Mechanical and Mechatronic at Parramatta, Penrith and Sydney City Campuses.

### Recommended Sequence

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequences below.

### Full-time - Autumn intake

#### Year 1

##### Autumn session

All students undertaking the Bachelor of Engineering study at Western Sydney University are required to enroll in 300743 Mathematics for Engineers Preliminary and undertake a diagnostic test at the beginning of their study. The diagnostic test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether a student will remain in 300743 Mathematics for Engineers Preliminary or be transferred by

the School to 200237 Mathematics for Engineers 1. Students remaining in 300743 Mathematics for Engineers Preliminary will be required to complete 200237 Mathematics for Engineers 1 during second semester and be encouraged to complete 200238 Mathematics for Engineers 2 during the Western Sydney University Summer session.

| | |
|---|---|
| **200237.5** | Mathematics for Engineers 1 |
| **300027.4** | Engineering Computing |
| **300963.3** | Engineering Physics |
| **300964.3** | Introduction to Engineering Practice |

**Spring session**

| | |
|---|---|
| **200238.3** | Mathematics for Engineers 2 |
| **300021.4** | Electrical Fundamentals |
| **300463.4** | Fundamentals of Mechanics |
| **300965.3** | Engineering Materials |

**Year 2 - Year 4**

Students must then select one of the following key programs:

| | |
|---|---|
| **KT3113.1** | Civil |
| **KT3114.1** | Construction |
| **KT3115.1** | Electrical |
| **KT3116.1** | Mechanical |
| **KT3117.1** | Robotics and Mechatronics |

## Bachelor of Engineering

### *3689.2*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2015 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

The Bachelor of Engineering is a four year degree program with common first year structure. The program has been designed to meet Engineers Australia professional accreditation requirements. It allows students the opportunity to choose a discipline area by selecting a key program in Civil, Construction, Electrical, Mechanical, and Robotic & Mechatronic engineering. In addition, students can specialise by selecting a sub-major from a wide range of recommended unit sets that will compliment their chosen discipline. An honours stream is available to students during fourth year of their study; students will be invited to undertake honours thesis based on overall academic performance in the first three years of their engineering study.

### Study Mode

Four years full-time or part-time equivalent.

### Location

| Campus | Attendance | Mode |
|---|---|---|
| Penrith Campus | Full Time | Internal |

### Accreditation

Graduates of this program are eligible to apply for full membership of Engineers Australia. They are eligible to apply for Chartered Professional Engineering registration upon successful completion of required engineering practice period specified by Engineers Australia.

### Inherent requirements

There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

### Admission

Recommended studies: Physics and HSC Mathematics extension 1 or HSC Mathematics Extension 2.

Assumed knowledge required: Two units of Science, two units of English and Mathematics (not General Mathematics) at Band 5 or higher.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

### Course Structure

### Academic Course Advisor

Dr Pan Hu is the Academic Course Advisor for Key Programs in Civil and Construction at Penrith and Sydney City Campuses.

Dr Won Hee Kang is the Academic Course Advisor for Key Programs in Civil and Construction at Parramatta South Campus.

Dr Qi Cheng is the Academic Course Advisor for Key Programs in Electrical at Parramatta, Penrith and Sydney City Campuses.

Dr Leo Zhang is the Academic Course Advisor for Key Programs in Mechanical and Mechatronic at Parramatta, Penrith and Sydney City Campuses.

## Recommended Sequence

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequences below.

## Full-time - Autumn intake

### Year 1

#### Autumn session

All students undertaking the Bachelor of Engineering are required to enroll in 300743 Mathematics for Engineers Preliminary and undertake a diagnostic test at the beginning of their study. The diagnostic test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether a student will remain in 300743 Mathematics for Engineers Preliminary or be transferred by the School to 200237 Mathematics for Engineers 1. Students remaining in 300743 Mathematics for Engineers Preliminary will be required to complete 200237 Mathematics for Engineers 1 during second semester and be encouraged to complete 200238 Mathematics for Engineers 2 during the Summer session.

| | |
|---|---|
| **200237.5** | Mathematics for Engineers 1 |
| **300027.4** | Engineering Computing |
| **300963.3** | Engineering Physics |
| **300964.3** | Introduction to Engineering Practice |

#### Spring session

| | |
|---|---|
| **200238.3** | Mathematics for Engineers 2 |
| **300021.4** | Electrical Fundamentals |
| **300463.4** | Fundamentals of Mechanics |
| **300965.3** | Engineering Materials |

### Year 2 - Year 4

Students must then select one of the following key programs:

| | |
|---|---|
| **KT3113.1** | Civil |
| **KT3114.1** | Construction |
| **KT3115.1** | Electrical |
| **KT3116.1** | Mechanical |
| **KT3117.1** | Robotics and Mechatronics |

# Bachelor of Engineering Advanced (Honours)

## *3690.4*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is Spring 2017 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

The Bachelor of Engineering Advanced (Honours) is a four year honours degree program with common first year structure. The program has been designed to meet Engineers Australia professional accreditation requirements. Students have the opportunity to focus on a discipline area by selecting a key program in Civil, Construction, Electrical, Mechanical, and Robotic & Mechatronic engineering. In addition, students can specialise by selecting a sub-major from a wide range of recommended unit sets that will complement their chosen discipline. Honours class will be awarded at completion of four years of study, based on the overall academic performance during the study period. Students in this program will need to maintain at least credit average GPA throughout their study; those not meeting this academic performance requirement will be transferred to Bachelor of Engineering (Honours) program.

## Study Mode

Four years full-time study or eight years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Penrith Campus | Full Time | Internal |

## Advanced Standing

Successful applicants for Advanced Standing may be required to travel to different Western Sydney University campuses to complete the elements of their course.

## Accreditation

This course has Full Accreditation at the level of Professional Engineer at Penrith campus and Provisional Accreditation at the level of Professional Engineer at Parramatta South and Sydney City Campuses. Graduates of this program are eligible to apply for full membership of Engineers Australia. They are eligible to apply for Chartered Professional Engineering registration upon successful completion of required engineering practice period specified by Engineers Australia.

## Inherent requirements

There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

## Admission

Recommended studies: Physics and HSC Mathematics Extension 1 or HSC Mathematics Extension 2.

Assumed knowledge required: Two units of Science, two units of English and Mathematics at Band 5 or higher.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying

directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

## Academic Course Advisor

Dr Pan Hu is the Academic Course Advisor for Key Programs in Civil and Construction at Penrith and Sydney City Campuses.

Dr Won Hee Kang is the Academic Course Advisor for Key Programs in Civil and Construction at Parramatta South Campus.

Dr Qi Cheng is the Academic Course Advisor for Key Programs in Electrical at Parramatta, Penrith and Sydney City Campuses.

Dr Leo Zhang is the Academic Course Advisor for Key Programs in Mechanical and Mechatronic at Parramatta, Penrith and Sydney City Campuses.

## Recommended Sequence

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below.

## Full-time

**Year 1**

**Autumn session**

| | |
|---|---|
| **200237.5** | Mathematics for Engineers 1 |
| **300027.4** | Engineering Computing |
| **300963.3** | Engineering Physics |
| **300964.3** | Introduction to Engineering Practice |

**Spring session**

| | |
|---|---|
| **200238.3** | Mathematics for Engineers 2 |
| **300021.4** | Electrical Fundamentals |
| **300463.4** | Fundamentals of Mechanics |
| **300965.3** | Engineering Materials |

**Year 2 - Year 4**

Students must then select one of the following key programs

Students may transfer to 3740 Bachelor of Engineering (Honours) or 3691 Bachelor of Engineering Science at the end of Year 2 of study.

Note: Only the Years 1 and 2 units will be offered at Parramatta Campus - Victoria Road in 2018.

| | |
|---|---|
| **KT3118.1** | Civil |
| **KT3152.1** | Construction |
| **KT3120.1** | Electrical |
| **KT3140.1** | Mechanical |
| **KT3141.1** | Robotics and Mechatronics |

# Bachelor of Engineering (Honours)

### *3740.1*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2016 or later.

The Bachelor of Engineering (Honours) is a four year degree program with common first year structure. The program has been designed to meet Engineers Australia professional accreditation requirements – Competency Stage 1 Professional Engineers and Australian Quality Frameworks (AQF) Level 8. It allows students the opportunity to choose a discipline area by selecting a key program in Civil, Construction, Electrical, Mechanical, and Robotic & Mechatronic engineering. In addition, students can specialise by selecting a sub-major from a wide range of recommended alternate unit sets that will complement their chosen discipline.

## Study Mode

Four years full-time or eight years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Penrith Campus | Full Time | Internal |

## Accreditation

Graduates of this program are eligible to apply for full membership of Engineers Australia. They are eligible to apply for Chartered Professional Engineering registration upon successful completion of required engineering practice period specified by Engineers Australia.

## Inherent requirements

There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

## Admission

Recommended studies: Physics and HSC Mathematics Extension 1 or HSC Mathematics Extension 2.

Assumed knowledge required: Two units of Science, two units of English and Mathematics (not General Mathematics) at Band 5 or higher.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying

directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office. International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

## Academic Course Advisor

Dr Pan Hu is the Academic Course Advisor for Key Programs in Civil and Construction at Penrith and Sydney City Campuses.

Dr Won Hee Kang is the Academic Course Advisor for Key Programs in Civil and Construction at Parramatta South Campus.

Dr Qi Cheng is the Academic Course Advisor for Key Programs in Electrical at Parramatta, Penrith and Sydney City Campuses.

Dr Leo Zhang is the Academic Course Advisor for Key Programs in Mechanical and Mechatronic at Parramatta, Penrith and Sydney City Campuses.

## Recommended Sequence

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequences below.

## Full-time Autumn intake

## Year 1

**Autumn session**

All students undertaking the Bachelor of Engineering (Honours) are required to enrol in 300743 Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study. The readiness test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether a student will remain in 300743 Mathematics for Engineers Preliminary or be transferred by the School to 200237 Mathematics for Engineers 1. Students remaining in 300743 Mathematics for Engineers Preliminary will be required to complete 200237 Mathematics for Engineers 1 during second semester and will be encouraged to complete 200238 Mathematics for Engineers 2 during the Summer session.

| | |
|---|---|
| **300743.4** | Mathematics for Engineers Preliminary |

Or

| | |
|---|---|
| **200237.5** | Mathematics for Engineers 1 |
| **300027.4** | Engineering Computing |
| **300963.3** | Engineering Physics |
| **300964.3** | Introduction to Engineering Practice |

**Spring session**

| | |
|---|---|
| **200238.3** | Mathematics for Engineers 2 |
| **300021.4** | Electrical Fundamentals |
| **300463.4** | Fundamentals of Mechanics |
| **300965.3** | Engineering Materials |

## Year 2 - Year 4

Students must then select one of the following key programs

**Penrith and Parramatta campuses**

**Note: Only the Year 1 units listed above will be offered at Parramatta campus in 2017.**

| | |
|---|---|
| **KT3135.1** | Civil |
| **KT3136.1** | Construction |
| **KT3137.1** | Electrical |
| **KT3138.1** | Mechanical |
| **KT3139.1** | Robotics and Mechatronics |

**Sydney City campus**

| | |
|---|---|
| **KT3135.1** | Civil |
| **KT3137.1** | Electrical |
| **KT3138.1** | Mechanical |

# Bachelor of Engineering (Honours)

***3740.2***

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2017 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

The Bachelor of Engineering (Honours) is a four year degree program with common first year structure. The program has been designed to meet Engineers Australia professional accreditation requirements – Competency Stage 1 Professional Engineers and Australian Quality Frameworks (AQF) Level 8. It allows students the opportunity to choose a discipline area by selecting a key program in Civil, Construction, Electrical, Mechanical, and Robotic and Mechatronic engineering. In addition, students can specialise by selecting a sub-major from a wide range of recommended alternate unit sets that will complement their chosen discipline.

## Study Mode

Four years full-time or eight years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Parramatta Campus - Victoria Road | Part Time | Internal |

| Campus | Attendance | Mode |
|---|---|---|
| Penrith Campus | Full Time | Internal |
| Sydney City Campus | Full Time | Internal |

## Advanced Standing

Successful applicants for Advanced Standing may be required to travel to different Western Sydney University campuses to complete the elements of their course.

## Accreditation

This course has Full Accreditation at the level of Professional Engineer at Penrith campus and Provisional Accreditation at the level of Professional Engineer at Parramatta South and Sydney City Campuses. Graduates of this program are eligible to apply for full membership of Engineers Australia. They are eligible to apply for Chartered Professional Engineering registration upon successful completion of required engineering practice period specified by Engineers Australia.

## Inherent requirements

There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

## Admission

Recommended studies: Physics and HSC Mathematics Extension 1 or HSC Mathematics Extension 2.

Assumed knowledge required: Two units of Science, two units of English and Mathematics (not General Mathematics) at Band 5 or higher.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office. International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

## Academic Course Advisor

Dr Pan Hu is the Academic Course Advisor for Key Programs in Civil and Construction at Penrith and Sydney City Campuses.

Dr Won Hee Kang is the Academic Course Advisor for Key Programs in Civil and Construction at Parramatta South Campus.

Dr Qi Cheng is the Academic Course Advisor for Key Programs in Electrical at Parramatta, Penrith and Sydney City Campuses.

Dr Leo Zhang is the Academic Course Advisor for Key Programs in Mechanical and Mechatronic at Parramatta, Penrith and Sydney City Campuses.

## Recommended Sequence

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequences below.

## Sydney City Campus

## Full-time Autumn Intake - Parramatta and Penrith Campuses

## Year 1

**Autumn session**

All students undertaking the Bachelor of Engineering (Honours) are required to enrol in 300743 Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study. The readiness test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether a student will remain in 300743 Mathematics for Engineers Preliminary or be transferred by the School to 200237 Mathematics for Engineers 1. Students remaining in 300743 Mathematics for Engineers Preliminary will be required to complete 200237 Mathematics for Engineers 1 during second semester and will be encouraged to complete 200238 Mathematics for Engineers 2 during the Summer session.

| | |
|---|---|
| **300743.4** | Mathematics for Engineers Preliminary |

Or

| | |
|---|---|
| **200237.5** | Mathematics for Engineers 1 |
| **300027.4** | Engineering Computing |
| **300963.3** | Engineering Physics |
| **300964.3** | Introduction to Engineering Practice |

**Spring session**

| | |
|---|---|
| **200238.3** | Mathematics for Engineers 2 |
| **300021.4** | Electrical Fundamentals |
| **300463.4** | Fundamentals of Mechanics |
| **300965.3** | Engineering Materials |

## Year 2 - Year 4

Students must then select one of the following key programs

Students may transfer to 3691 Bachelor of Engineering Science at the end of Year 2 of study.

**Penrith and Parramatta Campuses**

Note: Only the Years 1, 2 and 3 units will be offered at Parramatta Campus - Victoria Road in 2019.

| | |
|---|---|
| **KT3135.1** | Civil |
| **KT3151.1** | Construction |
| **KT3137.1** | Electrical |
| **KT3138.1** | Mechanical |
| **KT3139.1** | Robotics and Mechatronics |

**Sydney City campus**

| | |
|---|---|
| **KT3135.1** | Civil |
| **KT3137.1** | Electrical |
| **KT3138.1** | Mechanical |

## Bachelor of Engineering (Honours)

### *3740.3*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is Spring 2019 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

The Bachelor of Engineering (Honours) is a four-year fulltime undergraduate engineering course. The course is designed to meet Engineers Australia professional accreditation requirements – Competency Stage 1 Professional Engineers and Australian Quality Frameworks (AQF) Level 8.

Students have opportunities to choose a discipline area by selecting a key program in Civil, Construction, Electrical, Mechanical, and Robotic & Mechatronic Engineering. In addition, students can specialise by selecting one sub-major from recommended specialisation elective unit sets that will complement their chosen discipline. Meanwhile free elective units help students broaden their learning by developing knowledge and skills from other disciplines and professional fields for future.

### Study Mode

Four years full-time or eight years part-time.

### Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Parramatta Campus - Victoria Road | Part Time | Internal |
| Penrith Campus | Full Time | Internal |
| Penrith Campus | Part Time | Internal |
| Sydney City Campus | Full Time | Internal |

### Accreditation

This course has full Accreditation at the level of Professional Engineer at Penrith campus and Provisional Accreditation at the level of Professional Engineer at Parramatta South for all five specialisations (Civil, Construction, Electrical, Mechanical and Robotics & Mechatronics) and Sydney City Campuses for three specialisations (Civil, Electrical and Mechanical only). Graduates of this program are eligible to apply for full membership of Engineers Australia. They are eligible to apply for Chartered Professional Engineering registration upon successful completion of required engineering practice period specified by Engineers Australia.

### Inherent requirements

There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

### Admission

Recommended studies: Physics and HSC Mathematics Extension 1 or HSC Mathematics Extension 2.

Assumed knowledge required: Two units of Science, two units of English and Mathematics (not General Mathematics) at Band 5 or higher.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office. International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

### Course Structure

### Academic Course Advisor

Dr Pan Hu is the Academic Course Advisor for Key Programs in Civil and Construction at Penrith campus.

Dr Won Hee Kang is the Academic Course Advisor for Key Programs in Civil and Construction at Parramatta South campus.

Dr Qi Cheng is the Academic Course Advisor for Key Programs in Electrical at Parramatta, Penrith and Sydney City Campuses.

Dr Leo Zhang is the Academic Course Advisor for Key Programs in Mechanical and Mechatronic at Parramatta and Penrith campus.

Dr Ankit Agarwalis the Academic Course Advisor for Key Programs in Civil ar Sydney City campus.

Mr Peter Lendrum is the Academic Course Advisor for Key Programs in Electrical and Mechanical at Sydney City campus.

## Recommended Sequence

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequences below.

## Sydney City Campus

## Full-time Autumn intake - Parramatta and Penrith Campuses

## Year 1

**Autumn session**

*** All students undertaking the Bachelor of Engineering (Honours) are required to enrol in 300743 Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study.**

The readiness test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether a student will remain in 300743 Mathematics for Engineers Preliminary or be transferred by the School to 200237 Mathematics for Engineers 1.

Students remaining in 300743 Mathematics for Engineers Preliminary will be required to complete 200237 Mathematics for Engineers 1 during second semester and will be encouraged to complete 200238 Mathematics for Engineers 2 during the Summer session.

**300743.4** Mathematics for Engineers Preliminary

Or

**200237.5** Mathematics for Engineers 1
**300027.4** Engineering Computing
**300963.3** Engineering Physics
**300964.3** Introduction to Engineering Practice

**Spring session**

**200238.3** Mathematics for Engineers 2
**300463.4** Fundamentals of Mechanics

Students wishing to select Civil, Construction or Mechanical Key Program choose

**300965.3** Engineering Materials

And one elective

Students wishing to select Electrical or Robotics and Mechatronics Key Program choose

**300021.4** Electrical Fundamentals

And one elective

**Students doing General Engineering via UAC**

Students will do all eight common fundamental units in the first year and then one of two units - 300021 Electrical Fundamentals and 300965 Engineering Materials will be counted as a free elective unit when they choose the specialisation at the end of the first year.

## Year 2 - Year 4

Students must then select one of the following key programs

Students may transfer to 3691 Bachelor of Engineering Science at the end of Year 2 of study.

**Penrith and Parramatta campuses**

**KT3159.1** Civil
**KT3161.1** Electrical
**KT3162.1** Mechanical
**KT3163.1** Robotics and Mechatronics
**KT3160.1** Construction

From 2020, KT3160 will be replaced by KT3166 Construction

**KT3166.1** Construction

**Sydney City campus**

**KT3159.1** Civil
**KT3161.1** Electrical
**KT3162.1** Mechanical

## Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Indigenous Studies as listed above and Sustainability.

Students can apply for an elective sub-major via MySR.

# Bachelor of Engineering Science

### *3691.5*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is Spring 2018 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

The Bachelor of Engineering Science is a three year degree program with common first year structure. Students have the opportunity to focus on a discipline area by selecting a key program in Civil, Construction, Electrical, Mechanical, and Robotic & Mechatronic engineering. The program has been developed with the view of enabling graduates to practice as an engineering technologist in their chosen field. The three year Bachelor of Engineering Science program may be used as a pathway to the four year Bachelor of Engineering program that meets

Engineers Australia professional accreditation requirements; an academic performance criteria will be the eligibility criteria for such transfer.

## Study Mode
Three years full-time or six years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Parramatta Campus - Victoria Road | Part Time | Internal |
| Penrith Campus | Full Time | Internal |
| Penrith Campus | Part Time | Internal |
| Sydney City Campus | Full Time | Internal |

## Advanced Standing
Successful applicants for Advanced Standing may be required to travel to different Western Sydney University campuses to complete the elements of their course.

## Accreditation
The program has been designed to meet Engineers Australia professional accreditation requirements Competency Stage 1 Engineering Technologist and Australian Quality Frameworks (AQF) Level 7.

## Inherent requirements
There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

## Admission
Recommended studies: Physics and HSC Mathematics.

Assumed Knowledge: Two units of Science, two units of English and Mathematics (not General Mathematics) at Band 4 or higher.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

## Academic Course Advisor
Dr Pan Hu is the Academic Course Advisor for Key Programs in Civil and Construction at Penrith and Sydney City Campuses.

Dr Won Hee Kang is the Academic Course Advisor for Key Programs in Civil and Construction at Parramatta South Campus.

Dr Qi Cheng is the Academic Course Advisor for Key Programs in Electrical at Parramatta, Penrith and Sydney City Campuses.

Dr Hui Xie is the Academic Course Advisor for Key Programs in Mechanical and Mechatronics at Parramatta campus

Dr Leo Zhang is the Academic Course Advisor for Key Programs in Mechanical and Mechatronic at Penrith and Sydney City Campuses.

## Recommended Sequence
Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequences below.

## Sydney City Campus

## Full-time Autumn Intake - Parramatta and Penrith Campuses

### Year 1

#### Autumn session

| | |
|---|---|
| **300027.4** | Engineering Computing |
| **300963.3** | Engineering Physics |
| **300964.3** | Introduction to Engineering Practice |

Choose one of

| | |
|---|---|
| **300743.4** | Mathematics for Engineers Preliminary |
| **200237.5** | Mathematics for Engineers 1 |

Note: All students are required to enrol in 300743 Mathematics for Engineers Preliminary first and undertake a readiness test at the beginning of their study.

This test will be conducted at the beginning of the first semester of enrolment and the result will determine whether a student will remain in 300743 Mathematics for Engineers Preliminary or be transferred by the School to 200237 Mathematics for Engineers 1.

The students who finish 300743 Mathematics for Engineers Preliminary will then use this unit as an elective.

#### Spring session

| | |
|---|---|
| **300021.4** | Electrical Fundamentals |
| **300463.4** | Fundamentals of Mechanics |
| **300965.3** | Engineering Materials |

Choose one of

| | |
|---|---|
| **200237.5** | Mathematics for Engineers 1 |
| **200238.3** | Mathematics for Engineers 2 |

Note: Students who remained in 300743 Mathematics for Engineers Preliminary during the first semester will be required to complete 200237 Mathematics for Engineers 1 during second semester.

These students must then complete 200238 Mathematics for Engineers 2 during the Summer session.

**Year 2 - Year 3**

Students must then select one of the following key programs

**Penrith and Parramatta Campuses**

| | |
|---|---|
| **KT3123.1** | Civil |
| **KT3153.1** | Construction |
| **KT3125.1** | Electrical |
| **KT3142.1** | Mechanical |
| **KT3127.1** | Robotics and Mechatronics |

**Sydney City Campus**

| | |
|---|---|
| **KT3123.1** | Civil |
| **KT3125.1** | Electrical |
| **KT3142.1** | Mechanical |

# Bachelor of Engineering (Honours)/ Bachelor of Business

## *3728.1*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2016 or later.

The Bachelor of Engineering (Honours)/Bachelor of Business double degree permits students to undertake multi-skilling and offers diverse career paths providing high marketability in multiple engineering and business areas. The Engineering degree provides students with professional skills in each of the five key areas students choose to study. The five engineering key programs are Civil, Construction, Electrical, Mechanical, and Robotics & Mechatronics. Depending on the Business Major selected, employment possibilities are available in conventional engineering industries and also in areas including Applied Finance, Economics, Management, or Marketing. Graduates will be equipped to work as engineers, with a good understanding of business principles and practices.

## Study Mode

Five years full-time or ten years part-time. The Bachelor of Engineering (Honours) is offered on Penrith and Parramatta Campuses. The Bachelor of Business offers a number of its majors at Bankstown, Campbelltown and Parramatta campuses. Students may be required to travel between campuses in order to complete these B Business majors.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Campbelltown Campus | Full Time | Internal |
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Penrith Campus | Full Time | Internal |

## Advanced Standing

**Successful applicants for Advanced Standing may be required to travel to different Western Sydney University campuses to complete the elements of their course.**

## Accreditation

Bachelor of Engineering (Honours): Graduates of this program are eligible to apply for full membership of Engineers Australia. They are eligible to apply for Chartered Professional Engineering registration upon successful completion of required engineering practice period specified by Engineers Australia. Major MT2021 Applied Finance satisfies the educational requirements for membership of the Financial Services Institute of Australasia (Finsia). Major MT2024 Human Resource Management is accredited with the Australian Human Resources Institute (AHRI). Major MT2025 International Business satisfies the educational requirements for membership of the Australian Institute of Export. Major MT2027 Marketing satisfies the educational requirements for recognition as a Certified Practising Marketer and eligibility for membership of the Australian Marketing Institute (AMI).

## Inherent requirements

There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

## Admission

Eligibility for admission to the Bachelor of Engineering (Honours)/Bachelor of Business is based on the following requirements

The following sets of Assumed Knowledge and Recommended Studies apply.

Assumed Knowledge: HSC Mathematics (Band 5 or higher), any two units of science, any two units of English.

Recommended studies: Physics, HSC Mathematics Extension 1 or HSC Mathematics Extension 2.

Practical Experience: A session of industrial experience is required at the end of the third or fourth year.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English.

Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 400 credit points which include the units in the recommended sequence below.

Students who complete this award will graduate with two testamurs

- Bachelor of Engineering (Honours), with the Bachelor of Engineering key program noted on the testamur, and
- Bachelor of Business, with the Bachelor of Business Major noted on the testamur.

## Engineering Component

**Note: Only the Years 1 and 2 Engineering units will be offered at Parramatta Campus - Victoria Road in 2018.**

Students must study seven Engineering Foundation units followed by 15 Engineering Core units and two Engineering Thesis units in one of the following Bachelor of Engineering (Honours) programs.

| | |
|---|---|
| **KT3143.1** | Civil |
| **KT3144.1** | Construction |
| **KT3145.1** | Electrical |
| **KT3146.1** | Mechanical |
| **KT3147.1** | Robotics and Mechatronics |

## Business Component

Core units (compulsory 40 credit points)

| | |
|---|---|
| **200909.2** | Enterprise Law |
| **200910.2** | Financing Enterprises |
| **200911.1** | Enterprise Innovation and Markets |
| **200912.1** | Enterprise Leadership |

Professional units (choose 40 credit points)

The professional units provide a focus on careers. Students are required to complete one unit from each of the four key focus areas: numeracy, career planning, innovation, and enterprise engagement, a total of 40 credit points. Students are advised to choose units that will support careers in one of three areas: Money (for majors in Applied Finance and Economics), Markets (for majors in Hospitality Management, International Business, Marketing and Sport Management), Management (for majors in Human Resource Management and Management). The professional units that are recommended for each of the Bachelor of Business testamur majors are specified in the majors.

Majors - choose 80 credit points from one primary Business major. These are testamur majors.

**Use the links below to each Bachelor of Business Major see the list of Core, Professional and Major units required. Students should follow the recommended sequence listed under each Bachelor of Engineering (Honours) program via the links above and not the recommended sequence listed under each B Bus Major.**

Majors for Careers in Money

| | |
|---|---|
| **MT2021.1** | Applied Finance |
| **MT2022.1** | Economics |

Majors for Careers in Markets

| | |
|---|---|
| **MT2023.1** | Hospitality Management |
| **MT2025.1** | International Business |
| **MT2027.1** | Marketing |
| **MT2029.1** | Sport Management |

Majors for Careers in Management

| | |
|---|---|
| **MT2024.1** | Human Resource Management |
| **MT2026.1** | Management |

# Bachelor of Engineering (Honours)/ Bachelor of Business

***3728.2***

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2018 or later.

The Bachelor of Engineering (Honours)/Bachelor of Business double degree permits students to undertake multi-skilling and offers diverse career paths providing high marketability in multiple engineering and business areas. The Engineering degree provides students with professional skills in each of the five key areas students choose to study. The five engineering key programs are Civil, Construction, Electrical, Mechanical, and Robotics & Mechatronics. Depending on the Business Major selected, employment possibilities are available in conventional engineering industries and also in areas including Applied Finance, Economics, Management, or Marketing. Graduates will be equipped to work as engineers, with a good understanding of business principles and practices.

## Study Mode

Five years full-time or ten years part-time. The Bachelor of Engineering (Honours) is offered on Penrith and Parramatta Campuses. The Bachelor of Business offers a number of its majors at Bankstown, Campbelltown and Parramatta campuses. Students may be required to travel between campuses in order to complete these B Business majors.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Campbelltown Campus | Full Time | Internal |
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Penrith Campus | Full Time | Internal |

## Accreditation

Bachelor of Engineering (Honours): This course has Full Accreditation at the level of Professional Engineer at Penrith campus and Provisional Accreditation at the level of Professional Engineer at Parramatta South campus. Graduates of this program are eligible to apply for full membership of Engineers Australia. They are eligible to apply for Chartered Professional Engineering registration upon successful completion of required engineering practice period specified by Engineers Australia. Bachelor of Business: Where the full recommended unit sequence of the major is satisfactorily completed: Major MT2024 Human Resource Management is accredited with the Australian Human Resources Institute (AHRI). Major MT2021 Applied Finance satisfies the educational requirements for membership of the Financial Services Institute of Australasia (Finsia). MT2027 - Marketing satisfies the educational requirements for recognition as a Certified Practising Marketer and eligibility for membership of the Australian Marketing Institute (AMI).

## Inherent requirements

There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

## Admission

Eligibility for admission to the Bachelor of Engineering (Honours)/Bachelor of Business is based on the following requirements:

The following sets of Assumed Knowledge and Recommended Studies apply.

Assumed Knowledge: HSC Mathematics (Band 5 or higher), any two units of science, any two units of English.

Recommended studies: Physics, HSC Mathematics Extension 1 or HSC Mathematics Extension 2.

Practical Experience: A session of industrial experience is required at the end of the third or fourth year.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English.

Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 400 credit points which include the units in the recommended sequence below.

Students who complete this award will graduate with two testamurs

- Bachelor of Engineering (Honours), with the Bachelor of Engineering key program noted on the testamur, and
- Bachelor of Business, with the Bachelor of Business Major noted on the testamur.

## Engineering Component

Students must study seven Engineering Foundation units followed by 15 Engineering Core units and two Engineering Thesis units in one of the following Bachelor of Engineering (Honours) programs.

| | |
|---|---|
| **KT3143.1** | Civil |
| **KT3144.1** | Construction |
| **KT3145.1** | Electrical |
| **KT3146.1** | Mechanical |
| **KT3147.1** | Robotics and Mechatronics |

## Business Component

Core units (compulsory 40 credit points)

| | |
|---|---|
| **200909.2** | Enterprise Law |
| **200910.2** | Financing Enterprises |
| **200911.1** | Enterprise Innovation and Markets |
| **200912.1** | Enterprise Leadership |

Professional units (choose 40 credit points)

The professional units provide a focus on careers. Students are required to complete one unit from each of the four key focus areas: numeracy, career planning, innovation, and enterprise engagement, a total of 40 credit points. Students are advised to choose units that will support careers in one of three areas: Money (for majors in Applied Finance and Economics), Markets (for majors in Hospitality Management, International Business, Marketing and Sport Management), Management (for majors in Human Resource Management and Management). The professional units that are recommended for each of the Bachelor of Business testamur majors are specified in the majors.

Majors - choose 80 credit points from one primary Business major. These are testamur majors.

Use the links below to each Bachelor of Business major see the list of core, professional and major units required. Students should follow the recommended sequence listed under each Bachelor of Engineering (Honours) program via the links above and not the recommended sequence listed under each Bachelor of Business Major.

Majors for Careers in Money

| | |
|---|---|
| **MT2021.1** | Applied Finance |
| **MT2022.1** | Economics |

Majors for Careers in Markets

**MT2035.1** Hospitality Management

Please note MT2035 Hospitality Management will no longer be available from mid year 2021.

**MT2025.1** International Business
**MT2027.1** Marketing
**MT2036.1** Sport Management

Majors for Careers in Management

**MT2024.1** Human Resource Management
**MT2026.1** Management

## Bachelor of Engineering (Honours)/ Bachelor of Business

### *3728.3*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2020 or later.

The Bachelor of Engineering (Honours)/Bachelor of Business double degree permits students to undertake multi-skilling and offers diverse career paths providing high marketability in multiple engineering and business areas. The Engineering degree provides students with professional skills in each of the five key areas students choose to study. The five engineering key programs are Civil, Construction, Electrical, Mechanical, and Robotics & Mechatronics. Depending on the Business Major selected, employment possibilities are available in conventional engineering industries and also in areas including Applied Finance, Economics, Management, or Marketing. Graduates will be equipped to work as engineers, with a good understanding of business principles and practices.

### Study Mode

Five years full-time or ten years part-time. The Bachelor of Engineering (Honours) is offered on Penrith and Parramatta Campuses. The Bachelor of Business offers a number of its majors at Bankstown, Campbelltown and Parramatta campuses. Students may be required to travel between campuses in order to complete these B Business majors.

### Location

| Campus | Attendance | Mode |
|---|---|---|
| Bankstown Campus | Full Time | Internal |
| Bankstown Campus | Part Time | Internal |
| Campbelltown Campus | Full Time | Internal |
| Campbelltown Campus | Part Time | Internal |
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Parramatta Campus - Victoria Road | Part Time | Internal |
| Penrith Campus | Full Time | Internal |
| Penrith Campus | Part Time | Internal |

### Accreditation

Bachelor of Engineering (Honours): This course has Full Accreditation at the level of Professional Engineer at Penrith campus and Provisional Accreditation at the level of Professional Engineer at Parramatta South campus. Graduates of this program are eligible to apply for full membership of Engineers Australia. They are eligible to apply for Chartered Professional Engineering registration upon successful completion of required engineering practice period specified by Engineers Australia. Bachelor of Business: Where the full recommended unit sequence of the major is satisfactorily completed: Major MT2024 Human Resource Management is accredited with the Australian Human Resources Institute (AHRI). Major MT2021 Applied Finance satisfies the educational requirements for membership of the Financial Services Institute of Australasia (Finsia). MT2027 - Marketing satisfies the educational requirements for recognition as a Certified Practising Marketer and eligibility for membership of the Australian Marketing Institute (AMI).

### Inherent requirements

There are inherent requirements for the Bachelor of Engineering that you must meet in order to successfully complete this course. Make sure you read and understand the requirements for your course online.

The School of Business has developed a set of Inherent Requirements for the discipline of Accounting. These requirements are adopted for all School of Business courses. Make sure you read and understand the requirements for your course online.

### Admission

Eligibility for admission to the Bachelor of Engineering (Honours)/Bachelor of Business is based on the following requirements:

Assumed Knowledge: HSC Mathematics (Band 5 or higher), any two units of science, any two units of English.

Recommended studies: Physics, HSC Mathematics Extension 1 or HSC Mathematics Extension 2.

Practical Experience: A session of industrial experience is required at the end of the third or fourth year.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English.

Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 400 credit points which include the units in the recommended sequence below.

Students who complete this award will graduate with two testamurs

• Bachelor of Engineering (Honours), with the Bachelor of Engineering key program noted on the testamur, and

• Bachelor of Business, with the Bachelor of Business Major noted on the testamur.

## Engineering Component

Students must study seven Engineering Foundation units followed by 15 Engineering Core units and two Engineering Thesis units in one of the following Bachelor of Engineering (Honours) programs.

**KT3167.1** Civil
**KT3168.1** Construction
**KT3169.1** Electrical
**KT3170.1** Mechanical
**KT3171.1** Robotics and Mechatronics

## Business Component

Core units (compulsory 40 credit points)

**200909.2** Enterprise Law
**200910.2** Financing Enterprises
**200911.1** Enterprise Innovation and Markets
**200912.1** Enterprise Leadership

Professional units (choose 40 credit points)

The professional units provide a focus on careers. Students are required to complete one unit from each of the four key focus areas: numeracy, career planning, innovation, and enterprise engagement, a total of 40 credit points. Students are advised to choose units that will support careers in one of three areas: Money (for majors in Applied Finance and Economics), Markets (for majors in Hospitality Management, International Business, Marketing and Sport Management), Management (for majors in Human Resource Management and Management). The professional units that are recommended for each of the Bachelor of Business testamur majors are specified in the majors.

Majors - choose 80 credit points from one primary Business major. These are testamur majors.

Use the links below to each Bachelor of Business Major see the list of Core, Professional and Major units required. Students should follow the recommended sequence listed under each Bachelor of Engineering (Honours) program via the links above and not the recommended sequence listed under each B Bus Major.

Majors for Careers in Money

**MT2021.1** Applied Finance
**MT2022.1** Economics

Majors for Careers in Markets

**MT2035.1** Hospitality Management

Please note MT2035 Hospitality Management will no longer be available from mid year 2021.

**MT2025.1** International Business
**MT2027.1** Marketing

Please note: MT2027 Marketing is replaced by MT2040 Marketing for students who commence this course from the 2022 academic year. Continuing students enrolled in MT2027 will be able to remain in and successfully complete the requirements of this specialisation.

**MT2040.1** Marketing
**MT2036.1** Sport Management

Majors for Careers in Management

**MT2024.1** Human Resource Management
**MT2026.1** Management

# Bachelor of Industrial Design

### *3730.1*

This course replaces 3503 Bachelor of Industrial Design from 2016.

The Bachelor of Industrial design program prepares students for the profession with a new culture of learning supported by user/student-centered approach, competency learning, design studio-project based learning, applied design research and innovation. With a shorter time span between thinking and making, our new graduates in industrial design create and innovate by value adding, better experiences and interaction, products, businesses and systems. They are thinker-makers and design entrepreneurs, self-starters and all-rounders that can figure out and problem-solve ambiguity, work independently or in collaboration with others in new product development teams, user experience and interaction, product service systems, production and manufacturing.

The program provides an array of three majors (Graphics and Visualisation, Design Management and Entrepreneurship, and Design-Led Innovation and Management) and five sub-majors (Visualisation, Human Interaction, Industrial Manufacturing, Design Management, Responsible Design and Sustainability). The course pathway is transformative by practice on progressive priorities of product, process, people and place. Students are required to undertake a major and sub-major from different streams to complete the course. The course culminates in a final year industrial design project intending to develop visionary work leading to industry placement, Masters or PhD research.

Common occupations for industrial designers are in technological innovation (i.e. electronic, construction and building, medical and scientific), durable and fast moving consumer goods (i.e. commercial and domestics appliances, white goods, food, tools, packaging), entertainment and games (i.e. games development, model making, film and animation), online and e-learning solutions (i.e. web design, e-commerce, flexible learning), user-centered design (i.e. user experience, graphic user

interface, natural user interface, tangible interaction, human computer interaction, human machine interaction, visualization and simulation), and traditional product and manufacturing (i.e. CAD/CAM, Rapid Prototyping, tooling). Graduates are eligible for membership of the Design Institute of Australia (DIA).

## Study Mode

Four years full-time or eight years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |

## Advanced Standing

**Successful applicants for Advanced Standing may be required to travel to different Western Sydney University campuses to complete the elements of their course.**

## Accreditation

Graduates are eligible for membership of the Design Institute of Australia (DIA)

## Admission

Students applying to the Bachelor of Industrial Design should have an 65 ATAR.

Assumed knowledge of any two units of English plus at least two units of Business Studies, Visual Arts, Physics and Mathematics.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below.

To be eligible to graduate from this course, students are required to complete a Sub-major from the list below.

## Start year intake

### Year 1

#### Autumn session

| | |
|---|---|
| 301030.3 | Introduction to Industrial Design Methods |
| 300016.4 | Design Science |
| 301073.2 | Design Studio 1: Patterns and Products |
| 301074.3 | Graphics 1: 2D and 3D Industrial Design Communication |

#### Spring session

| | |
|---|---|
| 301075.3 | Design Studio 2: Form and Production |
| 301076.3 | Graphics 2: Visual Simulation |
| 301095.2 | Sustainable Design 1: Materials and Technology |
| 301077.2 | Mathematics for Industrial Design |

### Year 2

#### Autumn session

| | |
|---|---|
| 301078.2 | Design Studio 3: Design, Process and Function |
| 301079.3 | Graphics 3: 3D Engineering Specifications and Visualisation |
| 300570.4 | Human-Computer Interaction |

And one Major/Sub-major Alternate unit or Elective

#### Spring session

| | |
|---|---|
| 301080.2 | Design Studio 4: Innovation through Systems Thinking |
| 301081.3 | Sustainable Design 2: Product Service Systems |
| 301082.2 | Design Management 2: Operation and Supply Chain |

And one Major/Sub-major Alternate unit or Elective

### Year 3

#### Autumn session

| | |
|---|---|
| 301083.3 | Design Studio 5: Symbol and Meaning Making |
| 300014.4 | Design Management 3: Organisational Skills for Designers |

And two Major/Sub-major Alternate units or Electives

#### Spring session

| | |
|---|---|
| 301084.3 | Design Studio 6: Ambience, Place and Behaviour |
| 301090.2 | Contextual Inquiry |

And two Major/Sub-major Alternate units or Electives

#### Industrial Experience

| | |
|---|---|
| 300775.3 | Industrial Experience |

**Year 4**

**Autumn session**

**300459.4** Major Project Commencement

And two Alternate units - selected based on final year theme/issue in consultation with the Unit Coordinator.

**Spring session**

**300460.5** Major Project Completion

And one Alternate unit - selected based on final year theme/ issue in consultation with the Unit Coordinator.

## Mid-year intake

**Year 1**

**Spring session**

**301075.3** Design Studio 2: Form and Production
**301076.3** Graphics 2: Visual Simulation
**301095.2** Sustainable Design 1: Materials and Technology
**301077.2** Mathematics for Industrial Design

**Autumn session**

**301030.3** Introduction to Industrial Design Methods
**301079.3** Graphics 3: 3D Engineering Specifications and Visualisation
**301073.2** Design Studio 1: Patterns and Products
**301074.3** Graphics 1: 2D and 3D Industrial Design Communication

**Year 2**

**Spring session**

**301080.2** Design Studio 4: Innovation through Systems Thinking
**301081.3** Sustainable Design 2: Product Service Systems
**301082.2** Design Management 2: Operation and Supply Chain

And one Major/Sub-major Alternate unit or Elective

**Autumn session**

**301078.2** Design Studio 3: Design, Process and Function
**300016.4** Design Science
**300570.4** Human-Computer Interaction

And one Major/Sub-major Alternate unit or Elective

**Industrial Experience**

**300775.3** Industrial Experience

**Year 3**

**Spring session**

**301084.3** Design Studio 6: Ambience, Place and Behaviour
**301090.2** Contextual Inquiry

And two Major/Sub-major Alternate units or Electives

**Autumn session**

**301083.3** Design Studio 5: Symbol and Meaning Making
**300014.4** Design Management 3: Organisational Skills for Designers
**300459.4** Major Project Commencement

**Year 4**

**Spring session**

**300460.5** Major Project Completion

And one Alternate unit - selected based on final year theme/ issue in consultation with the Unit Coordinator.

**Autumn session**

And two Alternate units - selected based on final year theme/issue in consultation with the Unit Coordinator.

And two Major/Sub-major Alternate units or Electives

## Majors and Sub-majors

The Bachelor of Industrial Design is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

## Majors

**M3091.1** Visualisation and Graphics
**M3092.1** Design Management and Entrepreneurship
**M3093.1** Design-led Innovation and Management

## Sub-majors

**SM3084.1** Visualisation
**SM3085.1** Human-Computer Interaction
**SM3086.1** Industrial Manufacturing
**SM3087.1** Design Management
**SM3088.1** Responsible Design and Sustainability

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

# Bachelor of Industrial Design

### *3730.2*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2018 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their

studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

The Bachelor of Industrial design program prepares students for the profession with a new culture of learning supported by user/student-centered approach, competency learning, design studio-project based learning, applied design research and innovation. With a shorter time span between thinking and making, our new graduates in industrial design create and innovate by value adding, better experiences and interaction, products, businesses and systems. They are thinker-makers and design entrepreneurs, self-starters and all-rounders that can figure out and problem-solve ambiguity, work independently or in collaboration with others in new product development teams, user experience and interaction, product service systems, production and manufacturing.

The program provides an array of three majors (Graphics and Visualisation, Design Management and Entrepreneurship, and Design-Led Innovation and Management) and five sub-majors (Visualisation, Human Interaction, Industrial Manufacturing, Design Management, Responsible Design and Sustainability). The course pathway is transformative by practice on progressive priorities of product, process, people and place. Students are required to undertake a major and sub-major from different streams to complete the course. The course culminates in a final year industrial design project intending to develop visionary work leading to industry placement, Masters or PhD research.

Common occupations for industrial designers are in technological innovation (i.e. electronic, construction and building, medical and scientific), durable and fast moving consumer goods (i.e. commercial and domestics appliances, white goods, food, tools, packaging), entertainment and games (i.e. games development, model making, film and animation), online and e-learning solutions (i.e. web design, e-commerce, flexible learning), user-centered design (i.e. user experience, graphic user interface, natural user interface, tangible interaction, human computer interaction, human machine interaction, visualization and simulation), and traditional product and manufacturing (i.e. CAD/CAM, Rapid Prototyping, tooling). Graduates are eligible for membership of the Design Institute of Australia (DIA).

## Study Mode

Four years full-time or eight years part-time.

## Advanced Standing

Successful applicants for Advanced Standing may be required to travel to different Western Sydney University campuses to complete the elements of their course.

## Accreditation

Graduates are eligible for membership of the Design Institute of Australia (DIA)

## Admission

Assumed knowledge: any two units of English plus at least two units of Design, Design and Technology, Visual Arts, Digital Multimedia, Engineering, or Business Studies.

Alternate Entry

Entry by interview in which personal aptitude, professional experience, and educational qualifications are taken into consideration supported by a portfolio of works. After applicants have applied they are required to book an interview and download a questionnaire at this University's online booking system.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below.

To be eligible to graduate from this course, students are required to complete a sub-major from the list below.

## Start year Intake

### Year 1

#### Autumn session

| | |
|---|---|
| **301030.3** | Introduction to Industrial Design Methods |
| **300016.4** | Design Science |
| **301073.2** | Design Studio 1: Patterns and Products |
| **301074.3** | Graphics 1: 2D and 3D Industrial Design Communication |

#### Spring session

| | |
|---|---|
| **301075.3** | Design Studio 2: Form and Production |
| **301076.3** | Graphics 2: Visual Simulation |
| **301095.2** | Sustainable Design 1: Materials and Technology |
| **301077.2** | Mathematics for Industrial Design |

### Year 2

#### Autumn session

| | |
|---|---|
| **301078.2** | Design Studio 3: Design, Process and Function |
| **301079.3** | Graphics 3: 3D Engineering Specifications and Visualisation |

**300570.4** Human-Computer Interaction

And one major/sub-major alternate unit or elective

**Spring session**

**301080.2** Design Studio 4: Innovation through Systems Thinking
**301081.3** Sustainable Design 2: Product Service Systems
**301082.2** Design Management 2: Operation and Supply Chain

And one major/sub-major alternate unit or elective

**Year 3**

**Autumn session**

**301083.3** Design Studio 5: Symbol and Meaning Making
**300014.4** Design Management 3: Organisational Skills for Designers

And two major/sub-major alternate units or electives

**Spring session**

**301084.3** Design Studio 6: Ambience, Place and Behaviour
**301090.2** Contextual Inquiry

And two major/sub-major alternate units or electives

**Industrial Experience**

**300775.3** Industrial Experience

**Year 4**

**Autumn session**

**300459.4** Major Project Commencement

And two alternate units - selected based on final year theme/issue in consultation with the Unit Coordinator.

**Spring session**

**300460.5** Major Project Completion

And one alternate unit - selected based on final year theme/ issue in consultation with the Unit Coordinator.

## Mid-year Intake

**Year 1**

**Spring session**

**301075.3** Design Studio 2: Form and Production
**301076.3** Graphics 2: Visual Simulation
**301095.2** Sustainable Design 1: Materials and Technology
**301077.2** Mathematics for Industrial Design

**Autumn session**

**301030.3** Introduction to Industrial Design Methods
**301079.3** Graphics 3: 3D Engineering Specifications and Visualisation
**301073.2** Design Studio 1: Patterns and Products
**301074.3** Graphics 1: 2D and 3D Industrial Design Communication

**Year 2**

**Spring session**

**301080.2** Design Studio 4: Innovation through Systems Thinking
**301081.3** Sustainable Design 2: Product Service Systems
**301082.2** Design Management 2: Operation and Supply Chain

And one major/sub-major alternate unit or elective

**Autumn session**

**301078.2** Design Studio 3: Design, Process and Function
**300016.4** Design Science
**300570.4** Human-Computer Interaction

And one major/sub-major alternate unit or elective

**Industrial Experience**

**300775.3** Industrial Experience

**Year 3**

**Spring session**

**301084.3** Design Studio 6: Ambience, Place and Behaviour
**301090.2** Contextual Inquiry

And two major/sub-major alternate units or electives

**Autumn session**

**301083.3** Design Studio 5: Symbol and Meaning Making
**300014.4** Design Management 3: Organisational Skills for Designers
**300459.4** Major Project Commencement

**Year 4**

**Spring session**

**300460.5** Major Project Completion

And one alternate unit - selected based on final year theme/ issue in consultation with the Unit Coordinator.

**Autumn session**

And two alternate units - selected based on final year theme/issue in consultation with the Unit Coordinator.

And two major/sub-major alternate units or electives

## Majors and Sub-majors

The Bachelor of Industrial Design is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

## Majors

| | |
|---|---|
| **M3091.1** | Visualisation and Graphics |
| **M3092.1** | Design Management and Entrepreneurship |
| **M3093.1** | Design-led Innovation and Management |

**Note: From 2020 students are advised to select from the following Majors**

| | |
|---|---|
| **M3123.1** | Visualisation and Graphics |
| **M3124.1** | Design Management and Entrepreneurship |
| **M3125.1** | Design-led Innovation & Management |

### Sub-majors

| | |
|---|---|
| **SM3084.1** | Visualisation |
| **SM3085.1** | Human-Computer Interaction |
| **SM3086.1** | Industrial Manufacturing |
| **SM3087.1** | Design Management |
| **SM3088.1** | Responsible Design and Sustainability |

**Note: From 2020 students are advised to select from the following Sub-Majors**

| | |
|---|---|
| **SM3107.1** | Visualisation |
| **SM3085.1** | Human-Computer Interaction |
| **SM3108.1** | Industrial Manufacturing |
| **SM3109.1** | Design Management |
| **SM3110.1** | Responsible Design and Sustainability |

### Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Bachelor of Industrial Design

### *3730.3*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2020 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This degree provides students with the knowledge to create a career as an industrial designer involved in new product development, and collaborative leadership at the forefront of innovation and creativity. Students are engaged in industry-driven curriculum content over four years of study with a focus on the latest advances in sustainable materials, smart manufacturing, sustainability, human factors research, and design innovation in realising breakthrough products and services while improving the quality of life through good design. Specialisations in strategic design management, business model innovation, digital innovation, sustainable futures and design practice, help students who wish to pursue a corporate design role, or build their own start-up business generating new value and driving dynamic careers.

### Study Mode

Four years full-time or eight years part-time.

### Accreditation

Graduates are eligible for membership of the Design Institute of Australia (DIA)

### Admission

Assumed knowledge: any two units of English plus at least two units of Design, Design and Technology, Visual Arts, Digital Multimedia, Engineering, or Business Studies.

Alternate Entry

Entry by interview in which personal aptitude, professional experience, and educational qualifications are taken into consideration supported by a portfolio of works. After applicants have applied they are required to book an interview and download a questionnaire at this University's online booking system.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

### Course Structure

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below.

To be eligible to graduate from this course, students are required to complete a sub-major from the list below.

### Start year Intake

#### Year 1

#### Autumn session

| | |
|---|---|
| **301280.2** | Human Centred Design Research Methods |
| **301281.2** | Designing for Circular Economy |
| **301282.2** | Co-Designing Change with Local Communities |

**301283.2** Design Graphics: Presenting Innovation

**Spring session**

**301284.2** Designing for User Experience (UX)
**301285.2** Drawing Skills for Design Thinking
**301286.2** Designing for People: Applied Ergonomics
**301287.2** Design Graphics: Engineering Documentation

**Year 2**

**Autumn session**

**301288.2** Sustainable Materials and Smart Manufacturing
**301289.2** Design Semantics: Exploring Product Form
**301290.2** Design Graphics: Communication for Manufacture

And one sub-major or elective unit

**Spring session**

**301292.2** Biomechanics in Product Innovation
**301293.2** Designing for Circular Economy (Advanced)

And two sub-major alternate units or electives

From 2021, 301291 Design Research Methods (Advanced) is only offered in Autumn. Students should now select this unit in the following Autumn session.

**Year 3**

**Autumn session**

**301294.3** Studio: Interdisciplinary Global
**301291.3** Design Research Methods (Advanced)

And two sub-major or elective units

**Spring session**

**301295.1** Studio: Design Synthesis Capstone

From Spring 2021, 301295 is replaced by 301402 Studio: Design Synthesis Capstone. Students are advise to select 301402.

**301402.1** Studio: Design Synthesis Capstone

And one sub-major or elective unit

And one elective

**Industrial Experience**

**301296.2** Mentored Practice in Design Innovation

From Spring 2021, 301296 is replaced by 301401 Mentored Practice in Design Innovation. Students are advise to select 301401.

**301401.1** Mentored Practice in Design Innovation

**Year 4**

**Autumn session**

**301297.2** Industrial Design Major Project (Ideation)

Note: 301297 is a 20 credit point unit

And two alternate units - selected based on final year theme/issue in consultation with the Unit Coordinator.

**Spring session**

**301298.1** Industrial Design Major Project (Conclusion)

Note: 301298 is a 20 credit point unit

And two alternate units - selected based on final year theme/issue in consultation with the Unit Coordinator.

## Mid-year Intake

**Year 1**

**Spring session**

**301284.2** Designing for User Experience (UX)
**301285.2** Drawing Skills for Design Thinking
**301286.2** Designing for People: Applied Ergonomics
**301287.2** Design Graphics: Engineering Documentation

**Autumn session**

**301280.2** Human Centred Design Research Methods
**301281.2** Designing for Circular Economy
**301283.2** Design Graphics: Presenting Innovation
**301290.2** Design Graphics: Communication for Manufacture

**Year 2**

**Spring session**

**301292.2** Biomechanics in Product Innovation

And two sub-major or elective units

And one elective unit

**Autumn session**

**301282.2** Co-Designing Change with Local Communities
**301288.2** Sustainable Materials and Smart Manufacturing
**301289.2** Design Semantics: Exploring Product Form

And one sub-major alternate unit or elective

**Year 3**

**Spring session**

**301295.1** Studio: Design Synthesis Capstone

From Spring 2021, 301295 is replaced by 301402 Studio: Design Synthesis Capstone. Students are advise to select 301402.

**301402.1** Studio: Design Synthesis Capstone
**301293.2** Designing for Circular Economy (Advanced)

Two sub-major or elective units

From 2021, 301291 Design Research Methods (Advanced) is only offered in Autumn. Students should now select this unit in the following Autumn session.

**Autumn session**

**301294.3** Studio: Interdisciplinary Global
**301291.3** Design Research Methods (Advanced)

And one sub-major or elective unit

**Industrial Experience**

**301296.2** Mentored Practice in Design Innovation

From Spring 2021, 301296 is replaced by 301401 Mentored Practice in Design Innovation. Students are advise to select 301401.

**301401.1** Mentored Practice in Design Innovation

**Year 4**

**Spring session**

**301298.1** Industrial Design Major Project (Conclusion)

Note: 301298 Industrial Design Major Project (Conclusion) is a 20 credit point unit

And two alternate units - selected based on final year theme/issue in consultation with the Unit Coordinator.

**Autumn session**

**301297.2** Industrial Design Major Project (Ideation)

Note: 301297 is a 20 credit point unit

And two alternate units - selected based on final year theme/issue in consultation with the Unit Coordinator.

## Sub-majors

The Bachelor of Industrial Design is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific Sub-majors.

## Sub-majors

**SM3103.1** Digital Innovation
**SM3104.1** Design Practice
**SM3105.1** Strategic Design Management
**SM3106.1** Sustainable Futures

## Optional Majors

**M3126.1** Technology Entrepreneurship

# Bachelor of Industrial Design

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### *3730.4*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2021 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This degree provides students with the knowledge to create a career as an industrial designer involved in new product development, and collaborative leadership at the forefront of innovation and creativity. Students are engaged in industry-driven curriculum content over four years of study with a focus on the latest advances in sustainable materials, smart manufacturing, sustainability, human factors research, and design innovation in realising breakthrough products and services while improving the quality of life through good design. Specialisations in strategic design management, business model innovation, digital innovation, sustainable futures and design practice, help students who wish to pursue a corporate design role, or build their own start-up business generating new value and driving dynamic careers.

**Parts of this course may be taught at the Parramatta City - Hassall St campus or at the Parramatta South campus.**

## Study Mode

Four years full-time or eight years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta City Campus-Macquarie Street | Full Time | Internal |
| Parramatta City Campus-Macquarie Street | Part Time | Internal |

## Accreditation

Graduates are eligible for membership of the Design Institute of Australia (DIA)

## Admission

Assumed knowledge: any two units of English plus at least two units of Design, Design and Technology, Visual Arts, Digital Multimedia, Engineering, or Business Studies.

Alternate Entry

Entry by interview in which personal aptitude, professional experience, and educational qualifications are taken into consideration supported by a portfolio of works. After applicants have applied they are required to book an interview and download a questionnaire at this University's online booking system

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office. International students applying to The University through the International Office can find details of minimum English

proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below.

## Recommended Sequence

**Parts of these units may be taught at the Parramatta City - Hassall St campus or at the Parramatta South campus.**

## Full-Time Start Intake

### Year 1

#### Autumn session

| | |
|---|---|
| 301280.2 | Human Centred Design Research Methods |
| 301281.2 | Designing for Circular Economy |
| 301282.2 | Co-Designing Change with Local Communities |
| 301283.2 | Design Graphics: Presenting Innovation |

#### Spring session

| | |
|---|---|
| 301284.2 | Designing for User Experience (UX) |
| 301285.2 | Drawing Skills for Design Thinking |
| 301286.2 | Designing for People: Applied Ergonomics |
| 301287.2 | Design Graphics: Engineering Documentation |

### Year 2

#### Autumn session

| | |
|---|---|
| 301288.2 | Sustainable Materials and Smart Manufacturing |
| 301289.2 | Design Semantics: Exploring Product Form |
| 301290.2 | Design Graphics: Communication for Manufacture |

One Major/Sub-Major or Alternate unit

#### Spring session

| | |
|---|---|
| 301292.2 | Biomechanics in Product Innovation |
| 301301.2 | Design Thinking for Successful Brands and Products |
| 301293.2 | Designing for Circular Economy (Advanced) |

One Major/Sub-Major or Alternate unit

### Year 3

#### Autumn session

| | |
|---|---|
| 301294.3 | Studio: Interdisciplinary Global |

Three Major/Sub-Major or Alternate units

#### Spring session

| | |
|---|---|
| 301402.1 | Studio: Design Synthesis Capstone |

Three Major/Sub-Major or Alternate units

### Year 4

#### Autumn session

| | |
|---|---|
| 301297.2 | Industrial Design Major Project (Ideation) |
| 301308.2 | Design Practice: Sustainable Manufacturing |
| 301291.3 | Design Research Methods (Advanced) |

One Alternate unit

#### Spring session

| | |
|---|---|
| 301298.1 | Industrial Design Major Project (Conclusion) |

Note: 301298 is a 20 credit point unit

| | |
|---|---|
| 301401.1 | Mentored Practice in Design Innovation |
| 301309.2 | Design Practice: Sustainable Components |

## Autumn Alternate Unit Pool

| | |
|---|---|
| 101755.2 | From Ochre to Acrylics to New Technologies |

(Indigenous content)

| | |
|---|---|
| 101751.2 | Contextualising Indigenous Australia (Day Mode) |
| 200862.1 | Creating Change and Innovation |
| 200863.1 | Leadership and Entrepreneurship |
| 101184.4 | Psychology: Human Behaviour |
| 101569.3 | Sustainable Futures |
| 301086.3 | Design Brief Formulation |

## Spring Alternate Unit Pool

| | |
|---|---|
| 301302.2 | Design Thinking for Competitive Advantage |
| 301165.3 | Incubator 1: Innovation and Creativity for Entrepreneurship |
| 301304.2 | Start-Up Product Launch |
| 301062.3 | Environmental Building Design |
| 200587.2 | Strategic Management |
| 301306.2 | Simulation in Virtual and Augmented Realities |
| 200862.1 | Creating Change and Innovation |
| 301219.2 | Building Science |

## Full-Time Mid-year Intake

### Year 1

#### Spring session

| | |
|---|---|
| 301284.2 | Designing for User Experience (UX) |
| 301285.2 | Drawing Skills for Design Thinking |
| 301286.2 | Designing for People: Applied Ergonomics |
| 301287.2 | Design Graphics: Engineering Documentation |

#### Autumn session

| | |
|---|---|
| 301280.2 | Human Centred Design Research Methods |
| 301281.2 | Designing for Circular Economy |
| 301283.2 | Design Graphics: Presenting Innovation |

**301290.2** Design Graphics: Communication for Manufacture

**Year 2**

**Spring session**

**301292.2** Biomechanics in Product Innovation
**301301.2** Design Thinking for Successful Brands and Products

Two Major/Sub-Major or Alternate units

**Autumn session**

**301282.2** Co-Designing Change with Local Communities
**301288.2** Sustainable Materials and Smart Manufacturing
**301289.2** Design Semantics: Exploring Product Form

One Major/Sub Major or Alternate unit

**Year 3**

**Spring session**

**301402.1** Studio: Design Synthesis Capstone
**301293.2** Designing for Circular Economy (Advanced)

Two Major/Sub Major or Alternate units

**Autumn session**

**301294.3** Studio: Interdisciplinary Global

Three Major/Sub-Major or Alternte units

**Year 4**

**Spring session**

**301298.1** Industrial Design Major Project (Conclusion)

Note: 301298 Industrial Design Major Project (Conclusion) is a 20 credit point unit

**301401.1** Mentored Practice in Design Innovation
**301309.2** Design Practice: Sustainable Components

**Autumn session**

**301297.2** Industrial Design Major Project (Ideation)
**301308.2** Design Practice: Sustainable Manufacturing
**301291.3** Design Research Methods (Advanced)

One Alternate unit

### Autumn Alternate Unit Pool

**101755.2** From Ochre to Acrylics to New Technologies

(Indigenous content)

**101751.2** Contextualising Indigenous Australia (Day Mode)
**200862.1** Creating Change and Innovation
**200863.1** Leadership and Entrepreneurship
**101184.4** Psychology: Human Behaviour
**101569.3** Sustainable Futures
**301086.3** Design Brief Formulation

### Spring Alternate Unit Pool

**301302.2** Design Thinking for Competitive Advantage
**301165.3** Incubator 1: Innovation and Creativity for Entrepreneurship
**301304.2** Start-Up Product Launch
**301062.3** Environmental Building Design
**200587.2** Strategic Management
**301306.2** Simulation in Virtual and Augmented Realities
**200862.1** Creating Change and Innovation
**301219.2** Building Science

### Major and Sub-majors

The Bachelor of Industrail Design is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

**M3129.1** Design Practice
**M3126.1** Technology Entrepreneurship
**SM3111.1** Design Practice
**SM3112.1** Sustainable Futures
**SM3094.1** Construction Economics
**SM1049.1** Indigenous Australian Studies
**SM1068.1** Social Ecology
**SM1070.1** Cultural and Social Analysis
**SM2052.1** Business Studies for Secondary Teaching
**SM1118.1** Graphic Design

## Bachelor of Industrial Design (Honours)

### *3731.2*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2018 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

The Bachelor of Industrial design program prepares students for the profession with a new culture of learning supported by user/student-centered approach, competency learning, design studio-project based learning, applied design research and innovation. With a shorter time span between thinking and making, our new graduates in industrial design create and innovate by value adding, better experiences and interaction, products, businesses and systems. They are thinker-makers and design entrepreneurs, self-starters and all-rounders that can figure out and problem-solve ambiguity, work independently or in collaboration with others in new product development teams, user experience and interaction, product service systems, production and manufacturing.

The program provides an array of three majors (Graphics and Visualisation, Design Management and Entrepreneurship, and Design-Led Innovation and Management) and five sub-majors (Visualisation, Human Interaction, Industrial Manufacturing, Design Management,

Responsible Design and Sustainability). The course pathway is transformative by practice on progressive priorities of product, process, people and place. Students are required to undertake a major and sub-major from different streams to complete the course. The course culminates in a final year industrial design project intending to develop visionary work leading to industry placement, Masters or PhD research.

Common occupations for industrial designers are in technological innovation (i.e. electronic, construction and building, medical and scientific), durable and fast moving consumer goods (i.e. commercial and domestics appliances, white goods, food, tools, packaging), entertainment and games (i.e. games development, model making, film and animation), online and e-learning solutions (i.e. web design, e-commerce, flexible learning), user-centered design (i.e. user experience, graphic user interface, natural user interface, tangible interaction, human computer interaction, human machine interaction, visualization and simulation), and traditional product and manufacturing (i.e. CAD/CAM, Rapid Prototyping, tooling). Graduates are eligible for membership of the Design Institute of Australia (DIA).

## Study Mode

Four years full-time or eight years part-time.

## Advanced Standing

Successful applicants for Advanced Standing may be required to travel to different Western Sydney University campuses to complete the elements of their course.

## Accreditation

Graduates are eligible for membership of the Design Institute of Australia (DIA)

## Admission

Assumed knowledge: any two units of English plus at least two units of Design, Design and Technology, Visual Arts, Digital Multimedia, Engineering, or Business Studies.

Alternate Entry

Entry by interview in which personal aptitude, professional experience, and educational qualifications are taken into consideration supported by a portfolio of works. After applicants have applied they are required to book an interview and download a questionnaire at this University's online booking system.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below.

To be eligible to graduate from this course, students are required to complete a sub-major from the list below.

## Start year Intake

### Year 1

#### Autumn session

| | |
|---|---|
| **301030.3** | Introduction to Industrial Design Methods |
| **300016.4** | Design Science |
| **301073.2** | Design Studio 1: Patterns and Products |
| **301074.3** | Graphics 1: 2D and 3D Industrial Design Communication |

#### Spring session

| | |
|---|---|
| **301075.3** | Design Studio 2: Form and Production |
| **301076.3** | Graphics 2: Visual Simulation |
| **301095.2** | Sustainable Design 1: Materials and Technology |
| **301077.2** | Mathematics for Industrial Design |

### Year 2

#### Autumn session

| | |
|---|---|
| **301078.2** | Design Studio 3: Design, Process and Function |
| **301079.3** | Graphics 3: 3D Engineering Specifications and Visualisation |
| **300570.4** | Human-Computer Interaction |

And one major/sub-major alternate unit or elective

#### Spring session

| | |
|---|---|
| **301080.2** | Design Studio 4: Innovation through Systems Thinking |
| **301081.3** | Sustainable Design 2: Product Service Systems |
| **301082.2** | Design Management 2: Operation and Supply Chain |

And one major/sub-major alternate unit or elective

### Year 3

#### Autumn session

| | |
|---|---|
| **301083.3** | Design Studio 5: Symbol and Meaning Making |
| **300014.4** | Design Management 3: Organisational Skills for Designers |

And two major/sub-major alternate units or electives

**Spring session**

**301084.3** Design Studio 6: Ambience, Place and Behaviour
**301090.2** Contextual Inquiry

And two major/sub-major alternate units or electives

**Industrial Experience**

**300775.3** Industrial Experience

**Year 4**

**Autumn session**

**300773.3** Industrial Design Project (Commencement)

And one alternate unit - selected based on final year theme/ issue in consultation with the Unit Coordinator

**Spring session**

**300774.4** Industrial Design Project (Completion)

## Mid-year Intake

**Year 1**

**Spring session**

**301075.3** Design Studio 2: Form and Production
**301076.3** Graphics 2: Visual Simulation
**301095.2** Sustainable Design 1: Materials and Technology
**301077.2** Mathematics for Industrial Design

**Autumn session**

**301030.3** Introduction to Industrial Design Methods
**301079.3** Graphics 3: 3D Engineering Specifications and Visualisation
**301073.2** Design Studio 1: Patterns and Products
**301074.3** Graphics 1: 2D and 3D Industrial Design Communication

**Year 2**

**Spring session**

**301080.2** Design Studio 4: Innovation through Systems Thinking
**301081.3** Sustainable Design 2: Product Service Systems
**301082.2** Design Management 2: Operation and Supply Chain

And one major/sub-major alternate unit or elective

**Autumn session**

**301078.2** Design Studio 3: Design, Process and Function
**300016.4** Design Science
**300570.4** Human-Computer Interaction

And one major/sub-major alternate unit or elective

**Industrial Experience**

**300775.3** Industrial Experience

**Year 3**

**Spring session**

**301084.3** Design Studio 6: Ambience, Place and Behaviour
**301090.2** Contextual Inquiry

And two major/sub-major alternate units or electives

**Autumn session**

**301083.3** Design Studio 5: Symbol and Meaning Making
**300773.3** Industrial Design Project (Commencement)

**Year 4**

**Spring session**

**300774.4** Industrial Design Project (Completion)

**Autumn session**

**300014.4** Design Management 3: Organisational Skills for Designers

And one alternate units - selected based on final year theme/issue in consultation with the Unit Coordinator

And two major/sub-major alternate units or electives

## Majors and Sub-majors

The Bachelor of Industrial Design (Honours) is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific Majors and Sub-majors.

## Majors

**M3091.1** Visualisation and Graphics
**M3092.1** Design Management and Entrepreneurship
**M3093.1** Design-led Innovation and Management

**Note: From 2020 students are advised to select from the following Majors**

**M3123.1** Visualisation and Graphics
**M3124.1** Design Management and Entrepreneurship
**M3125.1** Design-led Innovation & Management

## Sub-majors

**SM3084.1** Visualisation
**SM3085.1** Human-Computer Interaction
**SM3086.1** Industrial Manufacturing
**SM3087.1** Design Management
**SM3088.1** Responsible Design and Sustainability

**Note: From 2020 students are advised to select from the following Sub-Majors**

| | |
|---|---|
| **SM3107.1** | Visualisation |
| **SM3085.1** | Human-Computer Interaction |
| **SM3108.1** | Industrial Manufacturing |
| **SM3109.1** | Design Management |
| **SM3110.1** | Responsible Design and Sustainability |

### Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Bachelor of Industrial Design (Honours)

### *3731.3*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2020 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

The Bachelor of Industrial Design (Honours) is a four-year program with specialisations that build significant support for the final year research thesis and applied design research project. The Design Research pathway central to Honours is developed to meet the demands of industry and academia in creating new contributions to the body of knowledge in innovation, systems thinking, design thinking, and social innovation. The curriculum offers structured and self-directed learning across standard class formats, studio-based, blended online and experiential Work Integrated Learning with focus on advanced design research methods drawn from industry-based design practice providing graduates with multi-directional employment pathways.

### Study Mode

Four years full-time or eight years part-time.

### Accreditation

Graduates are eligible for membership of the Design Institute of Australia (DIA)

### Admission

Assumed knowledge: any two units of English plus at least two units of Design, Design and Technology, Visual Arts, Digital Multimedia, Engineering, or Business Studies.

Alternate Entry

Entry by interview in which personal aptitude, professional experience, and educational qualifications are taken into consideration supported by a portfolio of works. After applicants have applied they are required to book an interview and download a questionnaire at this University's online booking system.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

### Course Structure

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below.

To be eligible to graduate from this course, students are required to complete a sub-major from the list below.

### Start year Intake

#### Year 1

#### Autumn session

| | |
|---|---|
| **301280.2** | Human Centred Design Research Methods |
| **301281.2** | Designing for Circular Economy |
| **301282.2** | Co-Designing Change with Local Communities |
| **301283.2** | Design Graphics: Presenting Innovation |

#### Spring session

| | |
|---|---|
| **301284.2** | Designing for User Experience (UX) |
| **301285.2** | Drawing Skills for Design Thinking |
| **301286.2** | Designing for People: Applied Ergonomics |
| **301287.2** | Design Graphics: Engineering Documentation |

#### Year 2

#### Autumn session

| | |
|---|---|
| **301288.2** | Sustainable Materials and Smart Manufacturing |
| **301289.2** | Design Semantics: Exploring Product Form |
| **301290.2** | Design Graphics: Communication for Manufacture |

And one major/sub-major or elective unit

#### Spring session

| | |
|---|---|
| **301292.2** | Biomechanics in Product Innovation |
| **301293.2** | Designing for Circular Economy (Advanced) |

And two sub-major alternate units or electives

From 2021, 301291 Design Research Methods (Advanced) is only offered in Autumn. Students should now select this unit in the following Autumn session.

**Year 3**

**Autumn session**

**301294.3** Studio: Interdisciplinary Global
**301291.3** Design Research Methods (Advanced)

And two sub-major or elective units

**Spring session**

**301295.1** Studio: Design Synthesis Capstone

From Spring 2021, 301295 is replaced by 301402 Studio: Design Synthesis Capstone. Students are advise to select 301402.

**301402.1** Studio: Design Synthesis Capstone

And two sub-major or elective units

**Industrial Experience**

**301296.2** Mentored Practice in Design Innovation

From Spring 2021, 301296 is replaced by 301401 Mentored Practice in Design Innovation. Students are advise to select 301401.

**301401.1** Mentored Practice in Design Innovation

**Year 4**

**Autumn session**

**301299.1** Industrial Design Applied Research Project (Honours)

Note: 301299 Industrial Design Applied Research Project (Honours) is a 20 credit point unit

And two alternate units - selected based on final year theme/issue in consultation with the Unit Coordinator.

**Spring session**

**301300.1** Industrial Design Research Thesis (Honours)

Note: 301300 Industrial Design Research Thesis (Honours) is a 20 credit point unit

And two alternate units - selected based on final year theme/issue in consultation with the Unit Coordinator.

## Mid-year Intake

**Year 1**

**Spring session**

**301284.2** Designing for User Experience (UX)
**301285.2** Drawing Skills for Design Thinking
**301286.2** Designing for People: Applied Ergonomics
**301287.2** Design Graphics: Engineering Documentation

**Autumn session**

**301280.2** Human Centred Design Research Methods
**301281.2** Designing for Circular Economy
**301283.2** Design Graphics: Presenting Innovation
**301290.2** Design Graphics: Communication for Manufacture

**Year 2**

**Spring session**

**301292.2** Biomechanics in Product Innovation

And two sub-major or elective units

And one elective unit

**Autumn session**

**301282.2** Co-Designing Change with Local Communities
**301288.2** Sustainable Materials and Smart Manufacturing
**301289.2** Design Semantics: Exploring Product Form

And one sub-major alternate unit or elective

**Year 3**

**Spring session**

**301295.1** Studio: Design Synthesis Capstone

From Spring 2021, 301295 is replaced by 301402 Studio: Design Synthesis Capstone. Students are advise to select 301402.

**301402.1** Studio: Design Synthesis Capstone
**301293.2** Designing for Circular Economy (Advanced)

Two sub-major or elective units

From 2021, 301291 Design Research Methods (Advanced) is only offered in Autumn. Students should now select this unit in the following Autumn session.

**Autumn session**

**301294.3** Studio: Interdisciplinary Global
**301291.3** Design Research Methods (Advanced)

And one sub-major or elective unit

**Industrial Experience**

**301296.2** Mentored Practice in Design Innovation

From Spring 2021, 301296 is replaced by 301401 Mentored Practice in Design Innovation. Students are advise to select 301401.

**301401.1** Mentored Practice in Design Innovation

**Year 4**

**Spring session**

**301300.1** Industrial Design Research Thesis (Honours)

Note: 301300 Industrial Design Research Thesis (Honours) is a 20 credit point unit

And two alternate units - selected based on final year theme/issue in consultation with the Unit Coordinator.

**Autumn session**

| | |
|---|---|
| **301299.1** | Industrial Design Applied Research Project (Honours) |

Note: 301299 Industrial Design Applied Research Project (Honours) is a 20 credit point unit

And two alternate units - selected based on final year theme/issue in consultation with the Unit Coordinator.

## Sub-majors

The Bachelor of Industrial Design is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific Sub-majors.

## Sub-majors

| | |
|---|---|
| **SM3103.1** | Digital Innovation |
| **SM3104.1** | Design Practice |
| **SM3105.1** | Strategic Design Management |
| **SM3106.1** | Sustainable Futures |

## Optional Majors

| | |
|---|---|
| **M3126.1** | Technology Entrepreneurship |

# Bachelor of Industrial Design (Honours)

## *3731.4*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2021 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

The Bachelor of Industrial Design (Honours) is a four-year program with specialisations that build significant support for the final year research thesis and applied design research project. The Design Research pathway central to Honours is developed to meet the demands of industry and academia in creating new contributions to the body of knowledge in innovation, systems thinking, design thinking, and social innovation. The curriculum offers structured and self-directed learning across standard class formats, studio-based, blended online and experiential Work Integrated Learning with focus on advanced design research methods drawn from industry-based design practice providing graduates with multi-directional employment pathways.

**Parts of this course may be taught at the Parramatta City - Hassall St campus or at the Parramatta South campus.**

## Study Mode

Four years full-time or eight years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta City Campus-Macquarie Street | Full Time | Internal |
| Parramatta City Campus-Macquarie Street | Part Time | Internal |

## Accreditation

Graduates are eligible for membership of the Design Institute of Australia (DIA)

## Admission

Assumed knowledge: any two units of English plus at least two units of Design, Design and Technology, Visual Arts, Digital Multimedia, Engineering, or Business Studies.

Alternate Entry

Entry by interview in which personal aptitude, professional experience, and educational qualifications are taken into consideration supported by a portfolio of works. After applicants have applied they are required to book an interview and download a questionnaire at this University's online booking system.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

International applicants must apply directly to Western Sydney University via the International Office.

International students applying to The University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

## Course Structure

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below.

## Recommended Sequence

**Parts of these units may be taught at the Parramatta City - Hassall St campus or at the Parramatta South campus.**

## Full-Time Start Intake

### Year 1

#### Autumn session

**301280.2** Human Centred Design Research Methods
**301281.2** Designing for Circular Economy
**301282.2** Co-Designing Change with Local Communities
**301283.2** Design Graphics: Presenting Innovation

#### Spring session

**301284.2** Designing for User Experience (UX)
**301285.2** Drawing Skills for Design Thinking
**301286.2** Designing for People: Applied Ergonomics
**301287.2** Design Graphics: Engineering Documentation

### Year 2

#### Autumn session

**301288.2** Sustainable Materials and Smart Manufacturing
**301289.2** Design Semantics: Exploring Product Form
**301290.2** Design Graphics: Communication for Manufacture

One Major/Sub-Major or Alternate unit

#### Spring session

**301292.2** Biomechanics in Product Innovation
**301301.2** Design Thinking for Successful Brands and Products
**301293.2** Designing for Circular Economy (Advanced)

One Major/Sub-Major or Alternate unit

### Year 3

#### Autumn session

**301294.3** Studio: Interdisciplinary Global

Three Major/Sub-Major or Alternate unit

#### Spring session

**301402.1** Studio: Design Synthesis Capstone

Three Major/Sub-Major or Alternate units

### Year 4

#### Honours

#### Autumn session

**301299.1** Industrial Design Applied Research Project (Honours)

Note: 301299 Industrial Design Applied Research Project (Honours) is a 20 credit point unit

**301308.2** Design Practice: Sustainable Manufacturing
**301291.3** Design Research Methods (Advanced)

#### Spring session

**301300.1** Industrial Design Research Thesis (Honours)

Note: 301300 Industrial Design Research Thesis (Honours) is a 20 credit point unit

**301401.1** Mentored Practice in Design Innovation
**301309.2** Design Practice: Sustainable Components

## Autumn Alternate Unit Pool

**101755.2** From Ochre to Acrylics to New Technologies
**101751.2** Contextualising Indigenous Australia (Day Mode)
**200863.1** Leadership and Entrepreneurship
**101184.4** Psychology: Human Behaviour
**101569.3** Sustainable Futures
**301086.3** Design Brief Formulation

## Spring Alternate Unit Pool

**301302.2** Design Thinking for Competitive Advantage
**301165.3** Incubator 1: Innovation and Creativity for Entrepreneurship
**301304.2** Start-Up Product Launch
**301062.3** Environmental Building Design
**200587.2** Strategic Management
**301306.2** Simulation in Virtual and Augmented Realities
**200862.1** Creating Change and Innovation
**301219.2** Building Science

## Full-Time Mid-Year Intake

### Year 1

#### Spring session

**301284.2** Designing for User Experience (UX)
**301285.2** Drawing Skills for Design Thinking
**301286.2** Designing for People: Applied Ergonomics
**301287.2** Design Graphics: Engineering Documentation

#### Autumn session

**301280.2** Human Centred Design Research Methods
**301281.2** Designing for Circular Economy
**301283.2** Design Graphics: Presenting Innovation
**301290.2** Design Graphics: Communication for Manufacture

### Year 2

#### Spring session

**301292.2** Biomechanics in Product Innovation
**301301.2** Design Thinking for Successful Brands and Products
**301293.2** Designing for Circular Economy (Advanced)

One Major/Sub-Majoror Alternate units

**Autumn session**

**301282.2** Co-Designing Change with Local Communities
**301288.2** Sustainable Materials and Smart Manufacturing
**301289.2** Design Semantics: Exploring Product Form

One Major/Sub-Major or Alternate unit

**Year 3**

**Spring session**

**301402.1** Studio: Design Synthesis Capstone

Three Major/Sub-Major or Alternate units

**Autumn session**

**301294.3** Studio: Interdisciplinary Global

Three Major/Sub-Major or Alternate units

**Year 4**

**Honours**

**Spring session**

**301300.1** Industrial Design Research Thesis (Honours)

Note: 301300 Industrial Design Research Thesis (Honours) is a 20 credit point unit

**301401.1** Mentored Practice in Design Innovation
**301309.2** Design Practice: Sustainable Components

**Autumn session**

**301299.1** Industrial Design Applied Research Project (Honours)

Note: 301299 Industrial Design Applied Research Project (Honours) is a 20 credit point unit

**301308.2** Design Practice: Sustainable Manufacturing
**301291.3** Design Research Methods (Advanced)

## Autumn Alternate Unit Pool

**101755.2** From Ochre to Acrylics to New Technologies
**101751.2** Contextualising Indigenous Australia (Day Mode)
**200862.1** Creating Change and Innovation
**200863.1** Leadership and Entrepreneurship
**101184.4** Psychology: Human Behaviour
**101569.3** Sustainable Futures
**301086.3** Design Brief Formulation

## Spring Alternate Unit Pool

**301302.2** Design Thinking for Competitive Advantage
**301165.3** Incubator 1: Innovation and Creativity for Entrepreneurship
**301304.2** Start-Up Product Launch
**301062.3** Environmental Building Design
**200587.2** Strategic Management
**301306.2** Simulation in Virtual and Augmented Realities
**200862.1** Creating Change and Innovation
**301219.2** Building Science

## Majors and Sub-majors

The Bachelor of Industrial Design (Honours) is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

**M3129.1** Design Practice
**M3126.1** Technology Entrepreneurship
**SM3111.1** Design Practice
**SM3112.1** Sustainable Futures
**SM3094.1** Construction Economics
**SM1049.1** Indigenous Australian Studies
**SM1068.1** Social Ecology
**SM1070.1** Cultural and Social Analysis
**SM2052.1** Business Studies for Secondary Teaching
**SM1118.1** Graphic Design

# Diploma in Aerotropolis Industry 4.0 (Mechatronics Skills)/Bachelor of Engineering Science

### *6046.1*

The fourth industrial revolution, also known as Industry 4.0, is affecting almost every industry worldwide and rapidly transforming how businesses operate. The Diploma in Aerotropolis Industry 4.0 (Mechatronics Skills) is designed to equip students with the relevant employability skills required to successfully navigate Aerotropolis Industry 4.0, in addition to equipping students with the skills, knowledge, and attributes required for further studies in Engineering. The Diploma presents students with units from the first year of the Bachelor of Engineering Science degree and the Bachelor of Engineering (Honours). The Diploma is designed to develop student's ability to work autonomously, work within teams, problem solve real-world issues within their field, as well as offering a cultural induction in to the Aerotropolis Industry.

The first year of this course is delivered online by Western Sydney University, The College as an agent of Western Sydney University, in an environment focused specifically on supporting students to make the transition into university study.

A Diploma in Aerotropolis Industry 4.0 (Mechatronics Skills) exit point is available at the end of the first year of the course.

For more information on Western Sydney University, The College, please refer to their web site.

For course advice during your first year of study, please use the contact below under 'Course Advice'. For course advice during your second and subsequent years of study, please use the contact listed for the Bachelor of Bachelor of Engineering Science.

## Study Mode

Three years full-time

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Online | Full Time | Multi Modal |
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Parramatta Campus - Victoria Road | Part Time | Internal |
| Penrith Campus | Full Time | Internal |
| Penrith Campus | Part Time | Internal |

## Inherent requirements

There are inherent requirements for this course that you must meet in order to complete your course and graduate. Make sure you read and understand the requirements for this course online.

## Admission

Completion of Year 12 with specified ATAR to be determined year by year, or completed Certificate III or higher, or equivalent work experience.

Equivalent experience includes

- Minimum of 1-year full time equivalent Trade work experience; or
- 2 years' full time equivalent Professional work experience; or
- 5 years' General work experience.

Applicants seeking admission on the basis of work experience must support their application with a Statement of Service for all work experience listed on the application.

Assumed Knowledge: Two units of Science and two units Mathematics (not General Mathematics).

## Course Structure

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below.

The early exit College Diploma consists of 80 credit points which includes two College Preparatory units

## Recommended sequence

## Western Sydney University The College Units

**Block E**

**500063.2** Introduction to Engineering Practice (UG Cert)

**Block F**

**500064.1** Engineering Computing (UG Cert)

**Block A**

**500065.1** Mathematics for Engineers Preliminary (UG Cert)

**Block B**

500067 - Engineering Physics

**Block C**

**500066.1** Engineering Materials (UG Cert)

**Block D**

500068 - Electrical Fundamentals

**Block E**

500069 - Fundamentals of Mechanics

**Block F**

500070 - Mathematics for Engineers 1

Students may exit at this point and graduate with the Diploma in Aerotropolis Industry 4.0 (Mechatronics Skills) following a passing grade in all of the above units. Students who progress onto Year Two may also be awarded the Diploma if they gain a passing grade in all of the above units.

Students must pass at least 70 credit points of University level units in Year One before progressing to the Year Two units.

## Western Sydney University Units

For course advice during your second and subsequent years of study, please use the contact listed for the Bachelor of Engineering Science

**Year 2 - Year 3**

Students must then select one of the following key programs

**Penrith and Parramatta Campuses**

| | |
|---|---|
| **KT3154.1** | Civil |
| **KT3155.1** | Construction |
| **KT3156.1** | Electrical |
| **KT3157.1** | Mechanical |
| **KT3158.1** | Robotics and Mechatronics |

# Diploma in Aerotropolis Industry 4.0 (Mechatronics Skills) (exit only)

***7178.1***

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

The fourth industrial revolution, also known as Industry 4.0, is affecting almost every industry worldwide and rapidly transforming how businesses operate. The Diploma in Aerotropolis Industry 4.0 (Mechatronics Skills) is designed to equip students with the relevant employability skills required to successfully navigate Aerotropolis Industry 4.0, in addition to equipping students with the skills, knowledge, and attributes required for further studies in Engineering. The Diploma presents students with units from the first year of the Bachelor of Engineering Science degree and the Bachelor of Engineering (Honours). The Diploma is designed to develop student's ability to work autonomously, work within teams, problem solve real-world issues within their field, as well as offering a cultural induction in to the Aerotropolis Industry.

For more information on Western Sydney University, The College, please refer to their web site.

## Study Mode
One year full-time (three terms).

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Online | Full Time | Multi Modal |

## Inherent requirements
The Inherent requirements will be the same as for the current Bachelor of Engineering Science and Bachelor of Engineering (Honours).

## Admission
Completion of Year 12 with specified ATAR to be determined year by year, or completed Certificate III or higher, or equivalent work experience.

Equivalent experience includes:

- Minimum of 1-year full time equivalent Trade work experience; or
- 2 years' full time equivalent Professional work experience; or
- 5 years' General work experience.

Applicants seeking admission on the basis of work experience must support their application with a Statement of Service for all work experience listed on the application.

Assumed Knowledge: Two units of Science and two units Mathematics (not General Mathematics).

For more information on applying please see link to The College admission pages below

## Course Structure
Qualification for this award requires the successful completion of 80 credit points which include the units listed in the recommended sequence below.

## Recommended sequence

**Block D**

**500065.1** Mathematics for Engineers Preliminary (UG Cert)
**500066.1** Engineering Materials (UG Cert)

**Block E**

500067 - Engineering Physics

**Block F**

500068 - Electrical Fundamentals
500069 - Fundamentals of Mechanics

**Block A**

500070 - Mathematics for Engineers 1

**Block B**

**500063.2** Introduction to Engineering Practice (UG Cert)

**Block C**

**500064.1** Engineering Computing (UG Cert)

# Diploma in Building Design Management/ Bachelor of Building Design Management

### *6031.1*

This course develops the skills necessary for a role in the integrated design and delivery of building projects. Students develop skills in building design along with an understanding of 'buildability' issues, accurate cost forecasting, risk management and sustainable project delivery. The ability to work as a part of a multi-disciplinary project team and to negotiate favourable outcomes in complex project environments is fostered through simulations of real-life building projects. Students will acquire a comprehensive overview of construction project delivery. All aspects of building design are included: commencing with an initial design concept; extending to design brief formation; project documentation; quality control management during the building process; and finally leading to project handover. Students will be required to undertake approved practical experience during the course. This experience will support and complement their formal study.

The first year of this course is delivered by Western Sydney University The College as an agent of Western Sydney University via extended face-to-face hours in smaller learning environments.

A Diploma in Building Design Management exit point is also available at the end of the first year of the course.

For more information on Western Sydney University, The College, please refer to their web site.

For course advice during your first year of study, please use the contact below under 'Course Advice'. For course advice during your second and subsequent years of study, please use the contact listed for the Bachelor of Bachelor of Building Design Management.

## Study Mode
Four years full-time or eight years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Parramatta Campus - Victoria Road | Part Time | Internal |
| Penrith Campus | Full Time | Internal |
| The College - Nirimba Education Precinct | Full Time | Internal |

## Admission
For more information on applying please see link to The College admission pages below.

Domestic students are required to have:

- Completed an English unit in the NSW Higher School Certificate, Or

- Competency in English at IELTS 6.0 equivalent (unless a native speaker) Or
- Passed The College English test with 70% or higher Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher.

Met other entry requirements such as:

- An ATAR identified prior to the offer of a place, Or
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

International students must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum 5.5 in each sub band Or
- Completed the College EAP 4 course with a 50% pass Or
- Passed The College English test with 70% or higher Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher for which advanced standing can be applied for.

Academic Entry Requirements vary according to country of origin. However, in general

- Completion of Year 12 or its equivalent is the minimum entry requirement OR
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

## Course Structure

Qualification for this award requires the successful completion of 340 credit points which include the units listed in the recommended sequence below.

The early exit College Diploma consists of 100 credit points which includes three College Preparatory units

## Western Sydney University The College Units

**Nirimba Campus**

**Year 1**

**First Term of Study**

| | |
|---|---|
| **700056.3** | Academic English (WSTC Prep) |
| **700201.3** | Computer Studies (WSTC Prep) |
| **700167.2** | Tertiary Study Skills in Construction Management (WSTC Prep) |
| **700154.2** | Professional Competencies (WSTC) |

From Autumn 2020, students are advised to select the following equivalent unit, 700290 Construction Communication, which will replace 700154 Professional Competencies.

| | |
|---|---|
| **700290.2** | Construction Communication (WSTC) |
| **700070.3** | Building 1 (WSTC) |

**Second Term of Study**

| | |
|---|---|
| **700150.3** | Graphic Communication and Design (WSTC) |

From Spring 2021, students are advised to select the following equivalent unit, 700306 Drawing and CAD (WSTC), which will replace 700150 Graphic Communication and Design (WSTC).

| | |
|---|---|
| **700306.1** | Drawing and CAD (WSTC) |
| **700255.3** | Environmental Building Design (WSTC) |
| **700256.3** | Construction Work Safety (WSTC) |

**Third Term of Study**

| | |
|---|---|
| **700005.7** | Accounting Information for Managers (WSTC) |
| **700254.1** | Enterprise Law (WSTC) |
| **700071.3** | Building 2 (WSTC) |

Students may exit at this point and graduate with the Diploma in Building Design Management following a passing grade in all of the above units. Students who progress onto Year Two may also be awarded the Diploma if they gain a passing grade in all of the above units.

- Students must pass all College Preparatory units before progressing to the Year Two units.
- Students must pass at least 70 credit points of University level units in Year One before progressing to the Year Two units.

## Western Sydney University Units

For course advice during your second and subsequent years of study, please use the contact listed for the Bachelor of Building Design Management.

**Parramatta (Victoria Road) and Penrith Campus**

**Year 2**

**Autumn session**

| | |
|---|---|
| **300720.3** | Construction Technology 1 (Civil) |
| **200486.3** | Quantity Surveying 1 |

From Autumn 2019, students are advised to select the following equivalent unit, 301208 Building Measurement, which will replace 200486 Quantity Surveying 1.

| | |
|---|---|
| **301208.3** | Building Measurement |
| **300723.4** | Development Control |

And one elective

**Spring session**

| | |
|---|---|
| **300721.5** | Construction Technology 2 (Substructure) |
| **200468.2** | Estimating 1 |

From Spring 2019, students are advised to select the following equivalent unit, 301207 Building Estimates and Tendering, which will replace 200468 Estimating 1.

| | |
|---|---|
| **301207.3** | Building Estimates and Tendering |
| **301085.3** | Built Heritage |

And one elective

**Year 3**

**Autumn session**

| | |
|---|---|
| **200502.6** | Construction Technology 3 (Concrete Construction) |

**300727.4** Project Management
**301086.3** Design Brief Formulation

And one elective

**Spring session**

**200470.7** Construction Technology 4 (Steel Construction)
**300886.3** Construction in Practice 1
**301087.3** Building Design Process

And one elective

**Year 4**

**Non-Honours stream**

**Autumn session**

**200471.6** Construction Technology 5 (Envelope)
**200504.5** Construction Economics
**301099.3** Building Design Project 1

**Spring session**

**300725.5** Construction Technology 6 (Services)
**200484.7** Construction in Practice 3
**301100.3** Building Design Project 2

**Year 4**

**Honours stream**

**Autumn session**

**200471.6** Construction Technology 5 (Envelope)
**200504.5** Construction Economics
**301101.3** Building Design Project 1 (Honours)

**Spring session**

**300725.5** Construction Technology 6 (Services)
**200484.7** Construction in Practice 3
**301102.3** Building Design Project 2 (Honours)

## Industry Experience

All students enrolled in Diploma in Building Design Management/Bachelor of Building Design Management must obtain, through their own initiative, 1200 hours of industry related employment prior to graduation.

To facilitate the recording of such experience it will be necessary to enrol in 300724 Industry Based Learning and have an Industry Experience Diary signed off by the Academic Course Advisor.

**300724.4** Industry Based Learning

## Optional Electives

**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Sub-major Elective Spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

# Diploma in Building Design Management/ Bachelor of Building Design Management

## *6031.2*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year for this course is 2021 or later

This course develops the skills necessary for a role in the integrated design and delivery of building projects. Students develop skills in building design along with an understanding of 'buildability' issues, accurate cost forecasting, risk management and sustainable project delivery. The ability to work as a part of a multi-disciplinary project team and to negotiate favourable outcomes in complex project environments is fostered through simulations of real-life building projects. Students will acquire a comprehensive overview of construction project delivery. All aspects of building design are included: commencing with an initial design concept; extending to design brief formation; project documentation; quality control management during the building process; and finally leading to project handover. Students will be required to undertake approved practical experience during the course. This experience will support and complement their formal study.

The first year of this course is delivered by Western Sydney University, The College as an agent of Western Sydney University via extended face-to-face hours in an environment focused specifically on supporting students to make the transition into university study

A Diploma in Building Design Management exit point is also available at the end of the first year of the course.

For more information on Western Sydney University, The College, please refer to their web site.

For course advice during your first year of study, please use the contact below under 'Course Advice'. For course advice during your second and subsequent years of study, please use the contact listed for the Bachelor of Bachelor of Building Design Management.

## Study Mode

Four years full-time or eight years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| The College - Nirimba Education Precinct | Full Time | Internal |

## Admission

For more information on applying please see link to The College admission pages below.

Domestic students are required to have:

- Completed an English unit in the NSW Higher School Certificate, Or
- Competency in English at IELTS 6.0 equivalent (unless a native speaker) Or
- Passed The College English test with 70% or higher Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher.

Met other entry requirements such as:

- An ATAR identified prior to the offer of a place, Or
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

International students must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum 5.5 in each sub band Or
- Completed the College EAP 4 course with a 50% pass Or
- Passed The College English test with 70% or higher Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher for which advanced standing can be applied for.

Academic Entry Requirements vary according to country of origin. However, in general

- Completion of Year 12 or its equivalent is the minimum entry requirement OR
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

For further information regarding English Language Entry Requirements, please see:

## Course Structure

Qualification for this award requires the successful completion of 340 credit points which include the units listed in the recommended sequence below.

The early exit College Diploma consists of 100 credit points which includes two College Preparatory units

## Western Sydney University The College Units

**Nirimba Campus**

**Year 1**

**First Term of Study**

| | |
|---|---|
| 700319.1 | Essential Literacy for Construction Professionals II (WSTC Prep) |
| 700318.2 | Building Calculations (WSTC Prep) |
| 700304.2 | Residential Building (WSTC) |
| 700290.2 | Construction Communication (WSTC) |

**Second Term of Study**

| | |
|---|---|
| 700254.1 | Enterprise Law (WSTC) |
| 700308.1 | Building Science (WSTC) |
| 700306.1 | Drawing and CAD (WSTC) |

**Third Term of Study**

| | |
|---|---|
| 700256.3 | Construction Work Safety (WSTC) |
| 700305.1 | Non-Residential Building (WSTC) |
| 700255.3 | Environmental Building Design (WSTC) |

Students may exit at this point and graduate with the Diploma in Building Design Management following a passing grade in all of the above units. Students who progress onto Year Two may also be awarded the Diploma if they gain a passing grade in all of the above units.

Students must pass all College Preparatory units before progressing to the Year Two units.

Students must pass at least 70 credit points of University level units in Year One before progressing to the Year Two units.

## Western Sydney University Units

For course advice during your second and subsequent years of study, please use the contact listed for the Bachelor of Building Design Management.

**Parramatta (Victoria Road) and Penrith Campus**

**Year 2**

**Autumn session**

| | |
|---|---|
| 301220.2 | Civil and Substructure |
| 301208.3 | Building Measurement |
| 300723.4 | Development Control |

And one elective

**Spring session**

| | |
|---|---|
| 200101.7 | Accounting Information for Managers |
| 301207.3 | Building Estimates and Tendering |
| 301085.3 | Built Heritage |

And one elective

**Year 3**

**Autumn session**

| | |
|---|---|
| 301221.1 | Building Superstructure |
| 301229.1 | Construction Project Management |
| 301086.3 | Design Brief Formulation |

And one elective

**Spring session**

| | |
|---|---|
| 200292.2 | Building Law |
| 301230.1 | Construction Scheduling |
| 301087.3 | Building Design Process |

And one elective

**Year 4**

**Autumn session**

| | |
|---|---|
| 301231.1 | Residential Building Project |
| 301159.3 | Modern Construction Projects |

Choose one of

**301099.3** Building Design Project 1
**301101.3** Building Design Project 1 (Honours)

**Spring session**

**301232.1** Complex Building Project
**301158.3** Modern Construction Enterprises

Choose one of

**301100.3** Building Design Project 2
**301102.3** Building Design Project 2 (Honours)

**Industry Experience**

All students enrolled in Bachelor of Building Design Management must obtain, through their own initiative, 1200 hours of industry related employment prior to graduation.

To facilitate the recording of such experience it will be necessary to enrol in 300724 Industry Based Learning and have an Industry Experience Diary signed off by the Academic Course Advisor.

**300724.4** Industry Based Learning

## Diploma in Construction Management/ Bachelor of Construction Technology

### *6032.1*

For more information on applying please see link to The College admission pages below.

This course provides the skills and abilities necessary to perform competently at a professional level in the residential construction industry, in one or more of the following roles: Site Manager, Building Supervisor, Estimator and Building Surveyor. Students will develop specialised skills in construction management. The Construction Technology program is widely recognised for delivering the full suite of theoretical, practical, and hands-on experience in the area of residential construction. Students will study four concentrated areas related to the delivery of residential construction projects. These are construction technology; construction economics; construction law; and construction resource management. There may be a number of opportunities during the course to obtain a cadetship in the building industry in areas including project home building, building surveying and residential development. The three year Bachelor of Construction Technology program may be used as a pathway to the four year Bachelor of Construction Management program which meets the Australian Institute of Building (AIB) professional accreditation requirements.

The first year of this course is delivered by Western Sydney University The College as an agent of Western Sydney University via extended face-to-face hours in smaller learning environments.

A Diploma in Construction Management exit point is also available at the end of the first year of the course.

For more information on Western Sydney University, The College, please refer to their web site.

For course advice during your first year of study, please use the contact below under 'Course Advice'. For course advice during your second and subsequent years of study, please use the contact listed for the Bachelor of Construction Technology.

### Study Mode

Three years full-time or six years part-time.

### Location

| Campus | Attendance | Mode |
|---|---|---|
| Penrith Campus | Full Time | Internal |
| The College - Nirimba Education Precinct | Full Time | Internal |

### Admission

For more information on applying please see link to The College admission pages below.

Domestic students are required to have:

- Completed an English unit in the NSW Higher School Certificate, Or
- Competency in English at IELTS 6.0 equivalent (unless a native speaker) Or
- Passed The College English test with 70% or higher Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher.

Students are also assumed to have background in Mathematics at a senior high school level and assumed background in Science knowledge, preferably in Physics.

Met other entry requirements such as:

- An ATAR identified prior to the offer of a place, Or
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

International students must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum 5.5 in each sub band Or
- Completed the College EAP 4 course with a 50% pass Or
- Passed The College English test with 70% or higher Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher for which advanced standing can be applied for.

Academic Entry Requirements vary according to country of origin. However, in general

- Completion of Year 12 or its equivalent is the minimum entry requirement Or
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

### Course Structure

Qualification for this award requires the successful completion of 260 credit points which include the units listed in the recommended sequence below.

The early exit College Diploma consists of 100 credit points which includes three College Preparatory units.

## Western Sydney University The College Units

### Nirimba and Penrith Campus

Please note that all campuses may not have intakes each year.

### Year 1

### First Term of Study

| | |
|---|---|
| 700056.3 | Academic English (WSTC Prep) |
| 700167.2 | Tertiary Study Skills in Construction Management (WSTC Prep) |
| 700264.1 | Scientific Methods for Construction Management (WSTC Prep) |
| 700290.2 | Construction Communication (WSTC) |
| 700070.3 | Building 1 (WSTC) |

### Second Term of Study

| | |
|---|---|
| 700005.7 | Accounting Information for Managers (WSTC) |
| 700150.3 | Graphic Communication and Design (WSTC) |

From Spring 2021, students are advised to select the following equivalent unit, 700306 Drawing and CAD (WSTC), which will replace 700150 Graphic Communication and Design (WSTC).

| | |
|---|---|
| 700306.1 | Drawing and CAD (WSTC) |
| 700254.1 | Enterprise Law (WSTC) |

### Third Term of Study

| | |
|---|---|
| 700252.2 | Enterprise Leadership (WSTC) |
| 700071.3 | Building 2 (WSTC) |
| 700256.3 | Construction Work Safety (WSTC) |

Note: Unit 700256 - Construction Work Safety (WSTC). replaces 700126 - Design Science (WSTC) from 2018

Note: Unit 700290 - Construction Communication. replaces 700154 - Professional Competencies (WSTC) from 2020

Students may exit at this point and graduate with the Diploma in Construction Management following a passing grade in all of the above units. Students who progress onto Year Two may also be awarded the Diploma if they gain a passing grade in all of the above units.

- Students must pass all College Preparatory units before progressing to the Year Two units.
- Students must pass at least 70 credit points of University level units in Year One before progressing to the Year Two units.

## Western Sydney University Units

For course advice during your second and subsequent years of study, please use the contact listed for the Bachelor of Construction Technology.

### Penrith Campus

### Year 2

### Autumn session

| | |
|---|---|
| 300720.3 | Construction Technology 1 (Civil) |
| 301208.3 | Building Measurement |
| 200472.5 | Material Science in Construction |
| 300723.4 | Development Control |

### Spring session

| | |
|---|---|
| 300721.5 | Construction Technology 2 (Substructure) |
| 301207.3 | Building Estimates and Tendering |
| 300885.3 | Building Regulations Studies |

And elective 1

### Year 3

### Autumn session

| | |
|---|---|
| 301105.3 | Negotiation in the Built Environment |
| 300727.4 | Project Management |
| 300728.5 | Construction Planning |

And elective 2

### Spring session

| | |
|---|---|
| 300886.3 | Construction in Practice 1 |
| 300053.6 | Professional Practice |
| 200292.2 | Building Law |

And elective 3

### Replaced Units

The units listed below count towards completion of this course for students who passed these units in 2018 or earlier.

200486 - Quantity Surveying 1

200468 - Estimating 1

### Please note

Students may choose electives from any of the University`s courses, including the following units

### Elective 1 Recommendation

Choose one of

| | |
|---|---|
| 200503.4 | Construction Information Systems |
| 301062.3 | Environmental Building Design |

### Elective 2 Recommendation

Choose one of

| | |
|---|---|
| 200502.6 | Construction Technology 3 (Concrete Construction) |
| 300748.4 | Quality and Value Management |

### Elective 3 Recommendation

Choose one of

| | |
|---|---|
| 200470.7 | Construction Technology 4 (Steel Construction) |
| 200487.5 | Quantity Surveying 2 |

# Diploma in Construction Management (exit only)

## *7015.7*

The Diploma in Construction Management is available as an exit point only from 6032 - Diploma in Construction Management/Bachelor of Construction Technology

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year for this course is Term 3, 2016 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

The program is designed to provide students with the first year units included in the Bachelor of Construction Management degree. It presents students with a range of units covering the science, building and management aspects of construction management and aims to prepare students for study beyond the first year of the Bachelor of Construction Management degree. It is delivered in a smaller, more supportive learning environment than usually found in first year undergraduate programs. Students who successfully complete the Diploma in Construction Management will articulate into the Bachelor of Construction Management degree at Western Sydney University with up to one year equivalent of advanced standing.

For more information on Western Sydney University, The College, please refer to their web site.

## Study Mode

One year full-time (three terms)

## Location

| Campus | Attendance | Mode |
|---|---|---|
| The College - Nirimba Education Precinct | Full Time | Internal |

## Admission

**This course is an exit award only**

The aim of these courses is to prepare students for tertiary study in Construction Management. They are accredited by the University, as principal, to enable its agent, The College, to produce students who are fully prepared for study beyond the first year of a tertiary award.

Local students are required to have:

- Completed an English unit in the NSW Higher School Certificate Or
- Competency in English at IELTS 6.0 equivalent (unless a native speaker) Or
- Passed The College English test with 70% or higher Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher for which advanced standing can be applied for.

Students are also assumed to have background in Mathematics at a senior high school level and assumed background in Science knowledge, preferably in Physics.

Met other entry requirements such as:

- An ATAR identified prior to the offer of a place (the ATAR will be set each year at a level below that for admission for the Bachelor of Construction Management) Or
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

International students must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum 5.5 in each sub band Or
- Completed the College EAP 4 course with a 50% pass Or
- Passed The College English test with 70% or higher Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher for which advanced standing can be applied for.

Students are also assumed to have a background in Mathematics at a senior high school level and assumed background in Science knowledge, preferably in Physics.

Academic Entry Requirements vary according to country of origin. However, in general:

- Completion of Year 12 or its equivalent is the minimum entry requirement Or
- Completed the College Foundation Studies course with a Grade Point Average of 5.5 or higher.

## Course Structure

This course is an exit award only

Qualification for this award requires the successful completion of the units listed below.

The early exit College Diploma consists of 100 crecdit points which includes three College Preparatory units.

| | |
|---|---|
| **700005.7** | Accounting Information for Managers (WSTC) |
| **700071.3** | Building 2 (WSTC) |
| **700256.3** | Construction Work Safety (WSTC) |
| **700254.1** | Enterprise Law (WSTC) |
| **700252.2** | Enterprise Leadership (WSTC) |
| **700150.3** | Graphic Communication and Design (WSTC) |
| **700290.2** | Construction Communication (WSTC) |
| **700304.2** | Residential Building (WSTC) |

Students must pass the following preparatory level units for which no advanced standing will be granted in the University degree program

| | |
|---|---|
| **700056.3** | Academic English (WSTC Prep) |
| **700264.1** | Scientific Methods for Construction Management (WSTC Prep) |

Students must also pass the following non-award unit, which does not count for credit towards the Diploma

**700167.2** Tertiary Study Skills in Construction Management (WSTC Prep)

**Replaced Units**

The units listed below count towards completion of this course for students who passed these units in 2019 or earlier.

700154 - Professional Competencies (WSTC)

700126 - Design Science (WSTC)

The units listed below count towards completion of this course for students who passed these units in 2020 or earlier.

700070 - Building 1 (WSTC)

# Diploma in Construction Technology/ Bachelor of Construction Technology

## *6045.1*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2021 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

This course provides the skills and abilities necessary to perform competently at a professional level in the residential construction industry, in one or more of the following roles: Site Manager, Building Supervisor, Estimator and Building Surveyor. Students will develop specialised skills in construction management. The Construction Technology program is widely recognised for delivering the full suite of theoretical, practical, and hands-on experience in the area of residential construction. Students will study four concentrated areas related to the delivery of residential construction projects. These are construction technology; construction economics; construction law; and construction resource management. There may be a number of opportunities during the course to obtain a cadetship in the building industry in areas including project home building, building surveying and residential development. The three year Bachelor of Construction Technology program may be used as a pathway to the Master of Project Management program which meets the Australian Institute of Building (AIB) professional accreditation requirements.

The first year of this course is delivered by Western Sydney University The College as an agent of Western Sydney University via extended face-to-face hours in an environment focused specifically on supporting students to make the transition into university study. A Diploma in Construction Technology exit point is also available at the end of the first year of the course.

For course advice during your first year of study, please use the contact below under ‘Course Advice’. For course advice during your second and subsequent years of study, please use the contact listed for the Bachelor of Construction Technology.

## Study Mode

Four years full-time or eight years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Penrith Campus | Full Time | Internal |
| The College - Nirimba Education Precinct | Full Time | Internal |

## Admission

For more information on applying please see link to The College admission pages below.

Domestic students are required to have

- Completed an English unit in the NSW Higher School Certificate, Or
- Competency in English at IELTS 6.0 equivalent (unless a native speaker), Or
- Passed The College English test with 70% or higher, Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher.

Students are also assumed to have background in Mathematics at a senior high school level and assumed background in Science knowledge, preferably in Physics.

Met other entry requirements such as

- An ATAR identified prior to the offer of a place, Or
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

International students must satisfy one of the following language requirements

- IELTS 6.0 with a minimum 5.5 in each sub band, Or
- Completed the College EAP 4 course with a 50% pass, Or
- Passed The College English test with 70% or higher, Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher for which advanced standing can be applied for.

Academic Entry Requirements vary according to country of origin. However, in general

- Completion of Year 12 or its equivalent is the minimum entry requirement, Or
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

## Course Structure

Qualification for this award requires the successful completion of 260 credit points which include the units listed in the recommended sequence below.

The early exit College Diploma consists of 100 credit points which includes two College Preparatory units.

## Western Sydney University The College Units

**Nirimba Campus**

Please note that all campuses may not have intakes each year.

**Year 1**

**First Term of Study**

| | |
|---|---|
| **700319.1** | Essential Literacy for Construction Professionals II (WSTC Prep) |
| **700318.2** | Building Calculations (WSTC Prep) |
| **700290.2** | Construction Communication (WSTC) |
| **700304.2** | Residential Building (WSTC) |

**Second Term of Study**

| | |
|---|---|
| **700254.1** | Enterprise Law (WSTC) |
| **700308.1** | Building Science (WSTC) |
| **700306.1** | Drawing and CAD (WSTC) |

**Third Term of Study**

| | |
|---|---|
| **700256.3** | Construction Work Safety (WSTC) |
| **700305.1** | Non-Residential Building (WSTC) |
| **700255.3** | Environmental Building Design (WSTC) |

Students may exit at this point and graduate with the Diploma in Construction Technology following a passing grade in all of the above units. Students who progress onto Year Two may also be awarded the Diploma if they gain a passing grade in all of the above units.

- Students must pass all College Preparatory units before progressing to the Year Two units.
- Students must pass at least 70 credit points of University level units in Year One before progressing to the Year Two units.

## Western Sydney University Units

For course advice during your second and subsequent years of study, please use the contact listed for the Bachelor of Construction Technology.

**Penrith Campus**

**Year 2**

**Autumn session**

| | |
|---|---|
| **301220.2** | Civil and Substructure |
| **301208.3** | Building Measurement |
| **300723.4** | Development Control |

And one elective

**Spring session**

| | |
|---|---|
| **200101.7** | Accounting Information for Managers |
| **301207.3** | Building Estimates and Tendering |
| **300885.3** | Building Regulations Studies |

And one elective

**Year 3**

**Autumn session**

| | |
|---|---|
| **301105.3** | Negotiation in the Built Environment |
| **301229.1** | Construction Project Management |
| **301221.1** | Building Superstructure |

And one elective

**Spring session**

| | |
|---|---|
| **301230.1** | Construction Scheduling |
| **300053.6** | Professional Practice |
| **200292.2** | Building Law |

And one elective

## Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers majors and sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective sub-major via MySR

# Diploma in Construction Technology (Exit only)

***7169.1***

**The Diploma in Construction Technology is available as an exit point only from 6045 - Diploma in Construction Technology/Bachelor of Construction Technology**

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year for this course is Term 1, 2021 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

The program is designed to provide students with the first year units included in the Bachelor of Construction Technology degree. It presents students with a range of units covering the science, building and technology aspects of construction and aims to prepare students for study beyond the first year of the Bachelor of Construction Technology degree. The Construction Technology program is widely recognised for delivering the full suite of theoretical, practical, and hands-on experience in the area of residential construction. It is delivered in an environment focused specifically on supporting students to make the transition into university study. Students who successfully complete the Diploma in Construction Technology will articulate into the Bachelor of Construction Technology degree at Western Sydney University with up to one year equivalent of advanced standing.

For more information on Western Sydney University, The College, please refer to their web site.

## Study Mode
One year full-time (three terms)

## Location

| Campus | Attendance | Mode |
|---|---|---|
| The College - Nirimba Education Precinct | Full Time | Internal |

## Admission

**This course is an exit award only**

Local students are required to have

- Completed an English unit in the NSW Higher School Certificate Or
- Competency in English at IELTS 6.0 equivalent (unless a native speaker) Or
- Passed The College English test with 70% or higher Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher for which advanced standing can be applied for.

Students are also assumed to have background in Mathematics at a senior high school level and assumed background in Science knowledge, preferably in Physics

Met other entry requirements such as

- An ATAR identified prior to the offer of a place (the ATAR will be set each year at a level below that for admission for the Bachelor of Construction Management) Or
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher

International students must satisfy one of the following language requirements

- IELTS 6.0 with a minimum 5.5 in each sub band Or
- Completed the College EAP 4 course with a 50% pass Or
- Passed The College English test with 70% or higher Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher for which advanced standing can be applied for.

Students are also assumed to have a background in Mathematics at a senior high school level and assumed background in Science knowledge, preferably in Physics.

Academic Entry Requirements vary according to country of origin. However, in general

- Completion of Year 12 or its equivalent is the minimum entry requirement Or
- Completed the College Foundation Studies course with a Grade Point Average of 5.5 or higher.

## Course Structure

**This course is an exit award only**

Qualification for this award requires the successful completion of the units listed below.

The early exit College Diploma consists of 100 crecdit points which includes College Preparatory units.

| | |
|---|---|
| 700308.1 | Building Science (WSTC) |
| 700256.3 | Construction Work Safety (WSTC) |
| 700290.2 | Construction Communication (WSTC) |
| 700306.1 | Drawing and CAD (WSTC) |
| 700254.1 | Enterprise Law (WSTC) |
| 700255.3 | Environmental Building Design (WSTC) |
| 700305.1 | Non-Residential Building (WSTC) |
| 700304.2 | Residential Building (WSTC) |

Students must pass the following preparatory level units for which no advanced standing will be granted in the University degree program

| | |
|---|---|
| 700318.2 | Building Calculations (WSTC Prep) |
| 700319.1 | Essential Literacy for Construction Professionals II (WSTC Prep) |

# Diploma in Construction Management Fast Track

### *7016.6*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year for this course is Term 2, 2016 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

The program is designed to provide students with the first year units included in the Bachelor of Construction Management degree. It presents students with a range of units covering the science, building and management aspects of construction management and aims to prepare students for study beyond the first year of the Bachelor of Construction Management degree. It is delivered in a smaller, more supportive learning environment than usually found in first year undergraduate programs. Students who successfully complete the Diploma in Construction Management Fast Track will articulate into the Bachelor of Construction Management degree at Western Sydney University with up to one year equivalent of advanced standing.

For more information on Western Sydney University, The College, please refer to their web site.

## Study Mode
Eight months full-time (two terms)

## Admission

The aim of the course is to prepare students for tertiary study in Construction Management. The Diploma is accredited by the University, as principal, to enable its agent, Western Sydney University, The College to produce students who are fully prepared for study beyond the first year of a tertiary award.

Local students entering this Diploma are required to have:

- Completed an English unit in the NSW Higher School Certificate Or
- Competency in English at IELTS 6.0 equivalent (unless a native speaker) Or
- Passed The College English test at IELTS 6.0 equivalent Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher.

Students are also assumed to have background in Mathematics at a senior high school level and assumed background in Science knowledge, preferably in Physics.

Met other entry requirements such as:

- An ATAR identified prior to the offer of a place (the ATAR will be set each year at a level below that for admission for the Bachelor of Construction Management) Or
- Completed The College Foundation Studies course with a Grade Point Average of 6.0 or higher.

International students must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum 5.5 in each sub band Or
- Completed The College EAP 4 course with a 50% pass Or
- Passed The College English test at IELTS 6.0 equivalent Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher
- Passed a College Foundation Studies Mathematics unit at C grade level or higher.

Students are also assumed to have a background in Mathematics at a senior high school level and assumed background in Science knowledge, preferably in Physics.

Academic Entry Requirements vary according to country of origin. However, in general:

- Completion of Year 12 or its equivalent is the minimum entry requirement Or
- Completed The College Foundation Studies course with a Grade Point Average of 6.0 or higher.

## Course Structure

Qualification for this award requires the successful completion of 80 credit points which include the units listed in the recommended sequence below.

| | |
|---|---|
| **700005.7** | Accounting Information for Managers (WSTC) |
| **700071.3** | Building 2 (WSTC) |
| **700126.4** | Design Science (WSTC) |
| **700254.1** | Enterprise Law (WSTC) |
| **700252.2** | Enterprise Leadership (WSTC) |
| **700306.1** | Drawing and CAD (WSTC) |
| **700154.2** | Professional Competencies (WSTC) |
| **700304.2** | Residential Building (WSTC) |

Students must also pass the non-award unit below, which does does not count for credit towards the Diploma.

| | |
|---|---|
| **700167.2** | Tertiary Study Skills in Construction Management (WSTC Prep) |

## Replaced Units

The units listed below count towards completion of this course for students who passed these units in Autumn 2021 or earlier.

700070 - Building 1 (WSTC)

700150.3 - Graphic Communication and Design (WSTC)

# Diploma in Engineering/Bachelor of Engineering Studies

### *6033.1*

Students have the opportunity to focus on a discipline area by selecting a key program in Civil, Construction, Electrical, Mechanical and Robotic & Mechatronic engineering. The program has been developed with the view of enabling graduates to practice as an engineering technologist in their chosen field. The three year Bachelor of Engineering Science program may be used as a pathway to the four year Bachelor of Engineering program that meet Engineers Australia professional accreditation requirements; an academic performance criteria will be the eligibility criteria for such transfer.

The first year of this course is delivered by Western Sydney University The College as an agent of Western Sydney University via extended face-to-face hours in smaller learning environments.

A Diploma in Engineering exit point is also available at the end of the first year of the course.

For more information on Western Sydney University, The College, please refer to their web site.

For course advice during your first year of study, please use the contact below under ‘Course Advice’. For course advice during your second and subsequent years of study, please use the contact listed for the Bachelor of Engineering Science.

## Study Mode

Three years full-time or six years part-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta Campus - Victoria Road | Full Time | Internal |
| Parramatta Campus - Victoria Road | Part Time | Internal |
| Penrith Campus | Full Time | Internal |
| Penrith Campus | Part Time | Internal |

## Admission

For more information on applying please see link to The College admission pages below.

Domestic students are required to have:

- Completed an English unit in the NSW Higher School Certificate, Or
- Competency in English at IELTS 6.0 equivalent (unless a native speaker) Or
- Passed The College English test at IELTS 6.0 equivalent Or

- Passed The College Foundation Studies Academic English unit at C grade level or higher.

Students are also assumed to have completed some study in Mathematics and Science at a senior high school level or equivalent.

Met other entry requirements such as:

- An ATAR identified prior to the offer of a place, Or
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

International students must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum 5.5 in each sub band Or
- Completed the College EAP 4 course with a 50% pass Or
- Passed The College English test at IELTS 6.0 equivalent Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher for which advanced standing can be applied for.

Academic Entry Requirements vary according to country of origin. However, in general:

- Completion of Year 12 or its equivalent is the minimum entry requirement Or
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

## Course Structure

Qualification for this award requires the successful completion of 260 credit points which include the units listed in the recommended sequence below.

The early exit College Diploma consists of 100 credit points which includes three College Preparatory units.

## Western Sydney University The College Units

**Parramatta City (George Street) and Penrith Campus**

Please note that all campuses may not have intakes each year.

**Year 1**

**First Term of Study**

| | |
|---|---|
| **700169.2** | Tertiary Study Skills in Engineering (WSTC Prep) |
| **700146.4** | Mathematics 2 (WSTC Prep) |
| **700145.3** | Foundation Physics 2 (WSTC Prep) |
| **700148.4** | Introduction to Engineering Practice (WSTC) |
| **700018.4** | Engineering Computing (WSTC) |

**Second Term of Study**

| | |
|---|---|
| **700100.6** | Mathematics for Engineers Preliminary (WSTC) |
| **700152.6** | Engineering Materials (WSTC) |
| **700151.5** | Engineering Physics (WSTC) |

**Third Term of Study**

| | |
|---|---|
| **700024.5** | Electrical Fundamentals (WSTC) |
| **700023.5** | Fundamentals of Mechanics (WSTC) |
| **700019.8** | Mathematics for Engineers 1 (WSTC) |

Students may exit at this point and graduate with the Diploma in Engineering following a passing grade in all of the above units. Students who progress onto Year Two may also be awarded the Diploma if they gain a passing grade in all of the above units.

- Students must pass all College Preparatory units before progressing to the Year Two units.
- Students must pass at least 70 credit points of University level units in Year One before progressing to the Year Two units.

## Western Sydney University Units

For course advice during your second and subsequent years of study, please use the contact listed for the Bachelor of Engineering Science.

**Parramatta (Victoria Road) and Penrith Campus**

**Year 2 - Year 3**

Students must choose one of the following five key programs when commencing their second year at Western Sydney University.

| | |
|---|---|
| **KT3154.1** | Civil |
| **KT3155.1** | Construction |
| **KT3156.1** | Electrical |
| **KT3157.1** | Mechanical |
| **KT3158.1** | Robotics and Mechatronics |

# Associate Degree in Engineering

## *7022.3*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is Q3 2015 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

The Associate Degree in Engineering is a two year program (full-time) in Engineering designed for people who have workplace experience and wish to upgrade their qualifications in Engineering and possibly continue to the full Bachelor degree program.

The Associate Degree in Engineering has a common first year program for all engineering disciplines, exposing students to a wide range of experiences in the first year. In the second year students may choose from the key programs in Civil, Electrical, Mechanical or Robotics & Mechatronics. If students choose to apply to study in the Bachelor of Engineering or from 2016, the Bachelor of Engineering (Honours) after graduating from the Associate Degree in Engineering they may be given advanced standing in up to 12 units.

For more information on Western Sydney University, The College, please refer to their web site.

## Study Mode

Two years full-time or four years part-time. Students will be required to attend the Kingswood campus for some learning experiences.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Online | Part Time | Multi Modal |

## Admission

Applicants may be regarded as eligible for admission if they have completed the NSW HSC and attained the required ATAR (Australian Tertiary Admission Rank), or have completed other equivalent qualifications such as a recognised Certificate III or Certificate IV and vocational experience and attained the required entrance standard set for entry to the course. This may include bridging/ preparatory courses, para-professional and other post-secondary qualifications.

Admission to the Associate Degree in Engineering also requires an applicant to have a minimum of three years industry experience or be a member in a suitable traineeship program.

## Course Structure

Qualification for this award requires the successful completion of 160 credit points as per the recommended sequence below.

## Recommended Sequence

### Core Units

| | |
|---|---|
| **700104.4** | Electrical Fundamentals (WSTC AssocD) |
| **700106.4** | Engineering Computing (WSTC AssocD) |
| **700109.4** | Engineering Management for Engineer Associates (WSTC AssocD) |
| **700147.4** | Engineering Materials (WSTC AssocD) |
| **700153.4** | Engineering Physics (WSTC AssocD) |
| **700112.4** | Fundamentals for Engineering Studies (WSTC AssocD) |
| **700113.4** | Fundamentals of Mechanics (WSTC AssocD) |
| **700114.4** | Introduction to Engineering Business Management (WSTC AssocD) |
| **700149.4** | Introduction to Engineering Practice (WSTC AssocD) |
| **700101.4** | Mathematics for Engineers 1 (WSTC AssocD) |
| **700103.4** | Mathematics for Engineers Preliminary (WSTC AssocD) |

One alternate unit from the selected Key Program below

| | |
|---|---|
| **700118.4** | Professional Practice for Engineer Associates (WSTC AssocD) |

One alternate unit from the selected Key Program below

| | |
|---|---|
| **700110.4** | Engineering Project (WSTC AssocD) |

One alternate unit from the selected Key Program below

Students must also select one of the following key programs and successfully complete three alternate units from the one key program.

| | |
|---|---|
| **KT7000.1** | Civil |
| **KT7001.1** | Electrical |
| **KT7002.1** | Mechanical |
| **KT7003.1** | Robotics and Mechatronics |

# Associate Degree in Engineering

### *7022.4*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2021 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

The Associate Degree in Engineering is designed for people who have workplace experience and wish to upgrade their qualifications in Engineering and possibly continue to the full Bachelor degree program.

The Associate Degree in Engineering has a common first year program for all engineering disciplines, exposing students to a wide range of experiences in the first year. In the second year students may choose from the key programs in Civil, Electrical, Mechanical or Robotics & Mechatronics. If students choose to apply to study in the Bachelor of Engineering (Honours) after graduating from the Associate Degree in Engineering they may be given advanced standing in up to 12 units.

For more information on Western Sydney University, The College, please refer to their web site.

## Study Mode

Four years part-time

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Online | Part Time | Multi Modal |

## Accreditation

The course has been designed in accordance to Engineers Australia standards and re-accreditation at the level of Engineering Associate will be sought from Engineers Australia.

## Admission

Applicants may be regarded as eligible for admission if they have completed the NSW HSC and attained the required ATAR (Australian Tertiary Admission Rank), or have completed other equivalent qualifications such as a recognised Certificate III or Certificate IV and vocational experience and attained the required entrance standard set for entry to the course. This may include bridging/

preparatory courses, para-professional and other post-secondary qualifications.

Admission to the Associate Degree in Engineering also requires an applicant to have a minimum of three (3) years industry experience or be a member in a suitable traineeship program.

## Course Structure

Qualification for this award requires the successful completion of 160 credit points as per the recommended sequence below.

## Recommended Sequence

**Year 1**

**Quarter 1**

| | |
|---|---|
| 700112.4 | Fundamentals for Engineering Studies (WSTC AssocD) |

**Quarter 2**

| | |
|---|---|
| 700106.4 | Engineering Computing (WSTC AssocD) |

**Quarter 3**

| | |
|---|---|
| 700103.4 | Mathematics for Engineers Preliminary (WSTC AssocD) |

**Quarter 4**

| | |
|---|---|
| 700147.4 | Engineering Materials (WSTC AssocD) |

**Year 2**

**Quarter 1**

| | |
|---|---|
| 700101.4 | Mathematics for Engineers 1 (WSTC AssocD) |

**Quarter 2**

| | |
|---|---|
| 700153.4 | Engineering Physics (WSTC AssocD) |

**Quarter 3**

| | |
|---|---|
| 700104.4 | Electrical Fundamentals (WSTC AssocD) |

**Quarter 4**

| | |
|---|---|
| 700113.4 | Fundamentals of Mechanics (WSTC AssocD) |

**Year 3**

**Quarter 1**

| | |
|---|---|
| 700149.4 | Introduction to Engineering Practice (WSTC AssocD) |

**Quarter 2**

| | |
|---|---|
| 700114.4 | Introduction to Engineering Business Management (WSTC AssocD) |

**Quarter 3**

| | |
|---|---|
| 700307.1 | Management Practices for Engineer Associates (WSTC AssocD) |

**Quarter 4**

Alternate unit

**Year 4**

**Quarter 1**

| | |
|---|---|
| 700311.2 | Industrial Experience (Associate Engineer) (WSTC AssocD) |

**Quarter 2**

Alternate unit

**Quarter 3**

| | |
|---|---|
| 700110.4 | Engineering Project (WSTC AssocD) |

**Quarter 4**

Alternate unit

Students must also select one of the following key programs and successfully complete three alternate units from the one key program.

Please note: Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

| | |
|---|---|
| **KT7000.1** | Civil |
| **KT7001.1** | Electrical |
| **KT7003.1** | Robotics and Mechatronics |
| **KT7004.1** | Mechanical |

# Diploma in Building Design Management (exit only)

### *7108.1*

The Diploma in Building Design Management is available as an exit point only from 6031 - Diploma in Building Design Management/Bachelor of Building Design Management

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is Term 3 2016 or later.

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

The program is designed to provide students with the first year units included in the Bachelor of Building Design Management degree. It presents students with a range of units covering the design, building and management aspects of construction management and aims to prepare students for study beyond the first year of the Bachelor of Building Design Management degree. It is delivered in a smaller, more supportive learning environment than usually found in first year undergraduate programs. Students who successfully complete this course will articulate into the Bachelor of Building Design Management degree at

Western Sydney University with up to one year equivalent of advanced standing.

For more information on Western Sydney University, The College, please refer to their web site.

## Study Mode

One year (three terms) full-time

## Location

| Campus | Attendance | Mode |
|---|---|---|
| The College - Nirimba Education Precinct | Full Time | Internal |

## Admission

**This course is an exit award only**

The aim of this course is to prepare students for tertiary study in Building Design Management and is accredited by the University, as principal, to enable its agent,Western Sydney Univeristy, The College, to produce students who are fully prepared for study beyond the first year of a tertiary award.

Local students are required to have

- Completed an English unit in the NSW Higher School Certificate Or
- Competency in English at IELTS 6.0 equivalent (unless a native speaker) Or
- Passed The College English test with 70% or higher Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher for which advanced standing can be applied for.

Met other entry requirements such as

- An ATAR identified prior to the offer of a place (the ATAR will be set each year at a level below that for admission for the Bachelor of Building Design Management) Or
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

Assumed knowledge: HSC English and Mathematics/ Science.

International students must satisfy one of the following language requirements

- IELTS 6.0 with a minimum 5.5 in each sub band Or
- Completed The College EAP 4 course with a 50% pass Or
- Passed The College English test with 70% or higher Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher for which advanced standing can be applied for.

Academic Entry Requirements vary according to country of origin. However, in general

- Completion of Year 12 or its equivalent is the minimum entry requirement
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

## Course Structure

This course is an exit award only

The early exit College Diploma consists of 100 crecdit points which includes three College Preparatory units.

Students must pass the following preparatory level units for which no advanced standing will be granted in the University degree program.

| | |
|---|---|
| **700056.3** | Academic English (WSTC Prep) |
| **700201.3** | Computer Studies (WSTC Prep) |

Students must pass the following core University level units

| | |
|---|---|
| **700005.7** | Accounting Information for Managers (WSTC) |
| **700070.3** | Building 1 (WSTC) |
| **700071.3** | Building 2 (WSTC) |
| **700256.3** | Construction Work Safety (WSTC) |
| **700254.1** | Enterprise Law (WSTC) |
| **700255.3** | Environmental Building Design (WSTC) |
| **700150.3** | Graphic Communication and Design (WSTC) |
| **700290.2** | Construction Communication (WSTC) |

Students must also pass the following non-award unit which does not count for credit towards the Diploma.

| | |
|---|---|
| **700167.2** | Tertiary Study Skills in Construction Management (WSTC Prep) |

**Replaced Units**

The units listed below count towards completion of this course for students who passed these units in 2019 or earlier.

700154 - Professional Competencies (WSTC)

# Diploma in Building Design Management (exit only)

## *7108.2*

The Diploma in Building Design Management is available as an exit point only from 6031 - Diploma in Building Design Management/Bachelor of Building Design Management

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year is 2021 or later

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

The program is designed to provide students with the first year units included in the Bachelor of Building Design Management degree. It presents students with a range of units covering the design, building and management aspects of construction management and aims to prepare students for study beyond the first year of the Bachelor of Building Design Management degree. It is delivered in an environment focused specifically on supporting students to make the transition into university study. Students who successfully complete this course will articulate into the Bachelor of Building Design Management degree at Western Sydney University with up to one year equivalent of advanced standing.

For more information on Western Sydney University, The College, please refer to their web site.

## Study Mode
One year (three terms) full-time

## Location

| Campus | Attendance | Mode |
|---|---|---|
| The College - Nirimba Education Precinct | Full Time | Internal |

## Admission

**This course is an exit award only**

The aim of this course is to prepare students for tertiary study in Building Design Management and is accredited by the University, as principal, to enable its agent,Western Sydney Univeristy, The College, to produce students who are fully prepared for study beyond the first year of a tertiary award.

Local students are required to have

- Completed an English unit in the NSW Higher School Certificate Or
- Competency in English at IELTS 6.0 equivalent (unless a native speaker) Or
- Passed The College English test with 70% or higher Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher for which advanced standing can be applied for.

Met other entry requirements such as

- An ATAR identified prior to the offer of a place (the ATAR will be set each year at a level below that for admission for the Bachelor of Building Design Management) Or
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

Assumed knowledge: HSC English and Mathematics/ Science.

International students must satisfy one of the following language requirements

- IELTS 6.0 with a minimum 5.5 in each sub band Or
- Completed The College EAP 4 course with a 50% pass Or
- Passed The College English test with 70% or higher Or
- Passed The College Foundation Studies Academic English unit at C grade level or higher for which advanced standing can be applied for.

Academic Entry Requirements vary according to country of origin. However, in general

- Completion of Year 12 or its equivalent is the minimum entry requirement
- Completed The College Foundation Studies course with a Grade Point Average of 5.5 or higher.

For further information regarding English Language Entry Requirements, please see:

## Course Structure

This course is an exit award only

The early exit College Diploma consists of 100 credit points which includes two College Preparatory units.

Students must pass the following preparatory level units for which no advanced standing will be granted in the University degree program.

| | |
|---|---|
| **700318.2** | Building Calculations (WSTC Prep) |
| **700319.1** | Essential Literacy for Construction Professionals II (WSTC Prep) |

Students must pass the following core University level units

| | |
|---|---|
| **700256.3** | Construction Work Safety (WSTC) |
| **700290.2** | Construction Communication (WSTC) |
| **700254.1** | Enterprise Law (WSTC) |
| **700304.2** | Residential Building (WSTC) |
| **700308.1** | Building Science (WSTC) |
| **700306.1** | Drawing and CAD (WSTC) |
| **700305.1** | Non-Residential Building (WSTC) |
| **700255.3** | Environmental Building Design (WSTC) |

# Diploma in Building Design Management Extended

***7136.1***

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

This program is designed to provide students with the first year units included in the Building Design Management degree. The inclusion of additional preparatory units is designed to assist students in the transition to study at University level. The Diploma is delivered via extended face to face hours in smaller learning environments.

Students who successfully complete this Diploma will articulate into the Building Design Management degree with up to one year (80 credit points) equivalent of advanced standing.

For more information on Western Sydney University, The College, please refer to their web site.

## Study Mode
One and a half years (four terms) full-time.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| The College - Nirimba Education Precinct | Full Time | Internal |

## Admission

**Recent School Leavers**

Completion of Year 12 with specified ATAR to be determined year by year.

**Non-credentialed Students**

Australian Citizens and Permanent Residents who are aged 17 years or over.

**International Students**

IELTS 5.5 with minimum 5.0 in each sub band; or equivalent results from The College English Language Program or The College English Entrance Test; and completion of Year 11 or equivalent with specified results.

## Course Structure

Qualification for this award requires the successful completion of 140 credit points which include the units listed in the pathways below.

Students are categorised into three Pathways. See individual links below for detailed course structure.

**Local Recent School Leavers**

| | |
|---|---|
| **A7158.1** | WSTC Building Design Management Extended - Recent School Leaver |

**Non-Credentialed Applicants**

| | |
|---|---|
| **A7159.1** | WSTC Building Design Management Extended - Non-Credentialed |

**International Students**

| | |
|---|---|
| **A7160.1** | WSTC Building Design Management Extended - International |

# Diploma in Building Design Management Extended

### *7136.2*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is Term 3, 2020 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

This program is designed to provide students with the first year units included in the Building Design Management degree. The inclusion of additional preparatory units is designed to assist students in the transition to study at University level. The Diploma is delivered via extended face to face hours in an environment focused specifically on supporting students to make the transition into university study.

Students who successfully complete this Diploma will articulate into the Building Design Management degree with up to one year (80 CPs) equivalent of advanced standing.

For more information on Western Sydney University, The College, please refer to their web site.

## Study Mode

One and a half years full-time (four terms).

## Location

| Campus | Attendance | Mode |
|---|---|---|
| The College - Nirimba Education Precinct | Full Time | Internal |

## Admission

**Recent School Leavers**

Completion of Year 12 with specified ATAR to be determined year by year.

**Non-credentialed Students**

Australian Citizens and Permanent Residents who are aged 17 years or over.

**International Students**

IELTS 5.5 with minimum 5.0 in each sub band; or equivalent results from The College English Language Program or The College English Entrance Test; and completion of year 11 or equivalent with specified results.

## Course Structure

Qualification for this award requires the successful completion of 140 credit points which include the units listed in the pathways below.

Students are categorised into three Pathways. See individual links below for detailed course structure.

**Local Recent School Leavers**

| | |
|---|---|
| **A7286.1** | WSTC Building Design Management Extended - Local Recent School Leavers |

**Non-Credentialed Applicants**

| | |
|---|---|
| **A7287.1** | WSTC Building Design Management Extended - Non-Credentialed |

**International Students**

| | |
|---|---|
| **A7288.1** | WSTC Building Design Management Extended - International |

# Diploma in Building Design Management Extended

### *7183.1*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is Term 3, 2021 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

This program is designed to provide students with the first year units included in the Building Design Management degree. The inclusion of additional preparatory units is designed to assist students in the transition to study at University level. The Diploma is delivered via extended face to face hours in an environment focused specifically on supporting students to make the transition into university study.

Students who successfully complete this Diploma will articulate into the Building Design Management degree with up to one year (80 CPs) equivalent of advanced standing.

For more information on Western Sydney University, The College, please refer to their web site.

## Study Mode

One and a half years full-time (four terms).

## Location

| Campus | Attendance | Mode |
|---|---|---|
| The College - Nirimba Education Precinct | Full Time | Internal |

## Inherent requirements

The Inherent requirements will be the same as for the current Bachelor course.

## Admission

### Recent School Leavers

Completion of Year 12 with specified ATAR to be determined year by year.

### Non-credentialed Students

Australian Citizens and Permanent Residents who are aged 17 years or over.

### International Students

IELTS 5.5 with minimum 5.0 in each sub band; or equivalent results from The College English Language Program or The College English Entrance Test; and completion of year 11 or equivalent with specified results.

For further information regarding English Language Entry Requirements, please see

## Course Structure

Qualification for this award requires the successful completion of 130 credit points which include the units listed in the pathways below.

Students are categorised into three Pathways. See individual links below for detailed course structure.

### Local Recent School Leavers

| | |
|---|---|
| **A7317.1** | WSTC Building Design Management Extended - Local Recent School Leavers |

### Non-Credentialed Applicants

| | |
|---|---|
| **A7318.1** | WSTC Building Design Management Extended - Non-Credentialed Applicants |

### International Students

| | |
|---|---|
| **A7319.1** | WSTC Building Design Management Extended - International Students |

# Diploma in Construction Management Extended

## *7137.1*

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

This program is designed to provide students with the first year units included in the Construction Management degree. The inclusion of additional preparatory units is designed to assist students in the transition to study at University level. The Diploma is delivered via extended face to face hours in smaller learning environments.

Students who successfully complete this Diploma will articulate into the Construction Management degree with up to one year (80 credit points) equivalent of advanced standing.

For more information on Western Sydney University, The College, please refer to their web site.

## Study Mode

One and a half years full-time (four terms).

## Location

| Campus | Attendance | Mode |
|---|---|---|
| The College - Nirimba Education Precinct | Full Time | Internal |

## Admission

### Recent School Leavers

Completion of Year 12 with specified ATAR to be determined year by year.

### Non-credentialed Students

Australian Citizens and Permanent Residents who are aged 17 years or over.

### International Students

IELTS 5.5 with minimum 5.0 in each sub band; or equivalent results from The College English Language Program or The College English Entrance Test; and completion of year 11 or equivalent with specified results.

## Course Structure

Qualification for this award requires the successful completion of 140 credit points which include the units listed in the pathways below.

Students are categorised into three Pathways. See individual links below for detailed course structure.

### Local Recent School Leavers

| | |
|---|---|
| **A7161.1** | WSTC Construction Management Extended - Recent School Leavers |

**Non-Credentialed Applicants**

**A7162.1** WSTC Construction Management Extended - Non-Credentialed

**International Students**

**A7163.1** WSTC Construction Management Extended - International

## Diploma in Construction Technology Extended

### *7165.1*

This course replaces 7137 Diploma in Construction Management Extended from Term 1, 2020.

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is 2019 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

This program is designed to provide students with the first year units included in the Construction Technology degree. The inclusion of additional preparatory units is designed to assist students in the transition to study at University level. The Diploma is delivered via extended face to face hours in smaller learning environments.

Students who successfully complete this Diploma will articulate into the Construction Technology degree with up to one year (80 CPs) equivalent of advanced standing.

For more information on Western Sydney University, The College, please refer to their web site.

### Study Mode

Four terms (1.5 years)

### Location

| Campus | Attendance | Mode |
|---|---|---|
| The College - Nirimba Education Precinct | Full Time | Internal |

### Admission

**Recent School Leavers**

Completion of Year 12 with specified ATAR to be determined year by year.

**Non-credentialed Students**

Australian Citizens and Permanent Residents who are aged 17 years or over.

**International Students**

IELTS 5.5 with minimum 5.0 in each sub band; or equivalent results from The College English Language Program or The College English Entrance Test; and completion of year 11 or equivalent with specified results.

### Course Structure

Qualification for this award requires the successful completion of 140 credit points which include the units listed in the pathways below.

Students are categorised into three Pathways. See individual links below for detailed course structure.

**Local Recent School Leavers**

**A7263.1** WSTC Construction Management Extended - Recent School Leavers

**Non-Credentialed Applicants**

**A7264.1** WSTC Construction Management Extended - Non-Credentialed

**International Students**

**A7265.1** WSTC Construction Management Extended - International

## Diploma in Construction Technology Extended

### *7165.2*

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is Term 3, 2020 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

This program is designed to provide students with the first year units included in the Construction Technology degree. The inclusion of additional preparatory units is designed to assist students in the transition to study at University level. The Diploma is delivered via extended face to face hours in an environment focused specifically on supporting students to make the transition into university study.

Students who successfully complete this Diploma will articulate into the Construction Technology degree with up to one year (80 credit points) equivalent of advanced standing.

For more information on Western Sydney University, The College, please refer to their web site.

### Study Mode

One and a half years full-time (four terms)

### Location

| Campus | Attendance | Mode |
|---|---|---|
| The College - Nirimba Education Precinct | Full Time | Internal |

## Admission

**Recent School Leavers**

Completion of Year 12 with specified ATAR to be determined year by year.

**Non-credentialed Students**

Australian Citizens and Permanent Residents who are aged 17 years or over.

**International Students**

IELTS 5.5 with minimum 5.0 in each sub band; or equivalent results from The College English Language Program or The College English Entrance Test; and completion of year 11 or equivalent with specified results.

## Course Structure

Qualification for this award requires the successful completion of 140 credit points which include the units listed in the pathways below.

Students are categorised into three Pathways. See individual links below for detailed course structure.

**Local Recent School Leavers**

| | |
|---|---|
| **A7283.1** | WSTC Construction Technology Extended - Recent School Leavers |

**Non-Credentialed Applicants**

| | |
|---|---|
| **A7284.1** | WSTC Construction Technology Extended - Non-credentialed |

**International Students**

| | |
|---|---|
| **A7285.1** | WSTC Construction Technology Extended - International |

# Diploma in Construction Technology Extended

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## *7184.1*

This course replaces 7165 Diploma in Construction Management Extended from Term 3, 2021.

Students should follow the course structure for the course version relevant to the year they commenced. This version applies to students whose commencement year in this course is Term 3, 2021 or later.

Units may be revised or replaced to ensure students are provided with up to date curriculum throughout their studies, and this may result in a new course version. Refer to the Check My Course Progress page in MySR for the most up to date information for your course.

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

This program is designed to provide students with the first year units included in the Construction Technology degree. The inclusion of additional preparatory units is designed to assist students in the transition to study at University level. The Diploma is delivered via extended face to face hours in an environment focused specifically on supporting students to make the transition into university study.

Students who successfully complete this Diploma will articulate into the Construction Technology degree with up to one year (80 CPs) equivalent of advanced standing.

For more information on Western Sydney University, The College, please refer to their web site.

## Study Mode

One and a half years full-time (four terms)

## Location

| Campus | Attendance | Mode |
|---|---|---|
| The College - Nirimba Education Precinct | Full Time | Internal |

## Inherent requirements

The Inherent requirements will be the same as for the current Bachelor course.

## Admission

**Recent School Leavers**

Completion of Year 12 with specified ATAR to be determined year by year.

**Non-credentialed Students**

Australian Citizens and Permanent Residents who are aged 17 years or over.

**International Students**

IELTS 5.5 with minimum 5.0 in each sub band; or equivalent results from The College English Language Program or The College English Entrance Test; and completion of year 11 or equivalent with specified results.

## Course Structure

Qualification for this award requires the successful completion of 130 credit points which include the units listed in the pathways below.

Students are categorised into three Pathways. See individual links below for detailed course structure.

**Recent School Leavers**

| | |
|---|---|
| **A7320.1** | WSTC Construction Technology Extended - Local Recent School Leavers |

**Non-Credentialed Applicants**

| | |
|---|---|
| **A7321.1** | WSTC Construction Technology Extended - Non-Credentialed Applicants |

**International Students**

| | |
|---|---|
| **A7322.1** | WSTC Construction Technology Extended - International Students |

# Diploma in Engineering

## *7034.1*

This course replaces 7023 - Diploma in Engineering Science from 2014.

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

The Diploma in Engineering is designed to engage students in, and further prepare students for, tertiary study in Engineering / Engineering Science and in so doing address any perceived deficiencies in the students' mathematical and physics knowledge and skills. The Diploma presents students with units from the first year of the Bachelor of Engineering (Honours) or Bachelor of Engineering Science degrees. The Diploma aims to produce students who are fully prepared for study beyond the first year of the Bachelor of Engineering (Honours) / Engineering Science degrees. The Diploma, completed in a smaller, more supportive learning environment than usually found in first year undergraduate programs, is designed to develop students to have greater ability in self-directed study and have the self-esteem that comes from prior achievement in a tertiary environment.

For more information on Western Sydney University, The College, please refer to their web site.

### Study Mode

One year full-time. Students will be required to attend the Kingswood or Parramatta South campus for some learning experiences.

### Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta City Campus-George Street | Full Time | Internal |

### Admission

The aim of the course is to prepare students for tertiary study in Engineering. The Diploma is accredited by the University, as principal, to enable its agent, Western Sydney University, The College to produce students who are fully prepared for study beyond the first year of a tertiary award.

Local students entering this Diploma are required to have:

- Completed an English unit in the NSW Higher School Certificate, Or
- Competency in English at IELTS 6.0 equivalent (unless a native speaker) Or
- Passed the English test administered by Western Sydney University, The College at IELTS 6.0 equivalent Or
- Passed the Foundation Studies Academic English unit, offered by Western Sydney University, The College at C grade level or higher for which advanced standing can be applied for.

Assumed to have a background in mathematics at senor high school level and assumed background Science knowledge, preferably in Physics.

Met other entry requirements such as:

- An ATAR identified prior to the offer of a place (the ATAR will be set each year at a level below that for admission for the Bachelor of Engineering) or from 2016, the Bachelor of Engineering (Honours), Or
- Completed the Foundation Studies course offered by Western Sydney University, The College, with a Grade Point Average of 5.5 or higher.

English Entry Requirements. International students entering the Diploma must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum 5.5 in each sub band Or
- Completed the EAP 4 course offered by Western Sydney University, The College with a 50% pass Or
- Passed the English test administered by Western Sydney University, The College at IELTS 6.0 equivalent Or
- Passed the Foundation Studies Academic English unit, offered by Western Sydney University, The College at C grade level or higher for which advanced standing can be applied for.

Assumed to have background in mathematics at senor high school level and assumed background Science knowledge, preferably in Physics.

Academic Entry Requirements vary according to country of origin. However, in general:

- Completion of Year 12 or its equivalent is the minimum entry requirement Or
- Completed the Foundation Studies course offered by Western Sydney University, The College, with a Grade Point Average of 5.5 or higher.

### Course Structure

Students must pass the following units

Qualification for this award requires the successful completion of 100 credit points which include the units listed in the recommended sequence below.

| | |
|---|---|
| **700024.5** | Electrical Fundamentals (WSTC) |
| **700018.4** | Engineering Computing (WSTC) |
| **700152.6** | Engineering Materials (WSTC) |
| **700151.5** | Engineering Physics (WSTC) |
| **700023.5** | Fundamentals of Mechanics (WSTC) |
| **700148.4** | Introduction to Engineering Practice (WSTC) |
| **700019.8** | Mathematics for Engineers 1 (WSTC) |
| **700100.6** | Mathematics for Engineers Preliminary (WSTC) |

Students must pass the following preparatory level units for which no advanced standing will be granted in the Western Sydney University degree program

| | |
|---|---|
| **700145.3** | Foundation Physics 2 (WSTC Prep) |
| **700146.4** | Mathematics 2 (WSTC Prep) |

Students must also pass the following non-award unit, which does not count for credit towards the Diploma

| | |
|---|---|
| **700169.2** | Tertiary Study Skills in Engineering (WSTC Prep) |

# Diploma in Engineering Fast Track

## *7035.1*

This course replaces 7024 - Diploma in Engineering Science Fast Track from 2014.

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

The Diploma in Engineering Fast Track is designed to engage students in, and further prepare students for, tertiary study in Engineering / Engineering Science and in so doing address any perceived deficiencies in the students' mathematical and physics knowledge and skills. The Diploma presents students with units from the first year of the Bachelor of Engineering Science degree or the Bachelor of Engineering (Honours). The Diploma aims to produce students who are fully prepared for study beyond the first year of the Bachelor of Engineering Science / Engineering (Honours) degree. The Diploma, completed in a smaller, more supportive learning environment than usually found in first year undergraduate programs, is designed to develop students to have greater ability in self-directed study and have the self-esteem that comes from prior achievement in a tertiary environment. Students who successfully complete the Diploma in Engineering Fast Track will articulate into the Bachelor of Engineering (Honours) at Western Sydney University with up to one year equivalent of advanced standing.

For more information on Western Sydney University, The College, please refer to their web site.

## Study Mode

Eight months full-time (two terms). Students will be required to attend the Kingswood or Parramatta South campus for some learning experiences.

## Location

| Campus | Attendance | Mode |
|---|---|---|
| Parramatta City Campus-George Street | Full Time | Internal |
| Penrith Campus | Full Time | Internal |

## Admission

The aim of the course is to prepare students for tertiary study in Engineering. The Diploma is accredited by the University, as principal, to enable its agent, Western Sydney University, The College to produce students who are fully prepared for study beyond the first year of a tertiary award.

Local students entering this Diploma are required to have:

- Completed an English unit in the NSW Higher School Certificate, Or
- Competency in English at IELTS 6.0 equivalent (unless a native speaker) Or
- Passed the English test administered by Western Sydney University, The College at IELTS 6.0 equivalent Or
- Passed the Foundation Studies Academic English unit, offered by Western Sydney University, The College at C grade level or higher for which advanced standing can be applied for.

Assumed to have a background in mathematics at senor high school level and assumed background Science knowledge, preferably in Physics.

Met other entry requirements such as:

- An ATAR identified prior to the offer of a place (the ATAR will be set each year at a level below that for admission for the Bachelor of Engineering Science), Or
- Completed the Foundation Studies course offered by Western Sydney University, The College, with a Grade Point Average of 6.0 or higher

English Entry Requirements. International students entering the Diploma must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum 5.5 in each sub band Or
- Completed the EAP 4 course offered by Western Sydney University, The College with a 50% pass Or
- Passed the English test administered by Western Sydney University, The College at IELTS 6.0 equivalent Or
- Passed the Foundation Studies Academic English unit, offered by Western Sydney University, The College at C gr.ade level or higher for which advanced standing can be applied for.

Assumed to have background in mathematics at senor high school level and assumed background Science knowledge, preferably in Physics.

Academic Entry Requirements vary according to country of origin. However, in general:

- Completion of Year 12 or its equivalent is the minimum entry requirement Or
- Completed the Foundation Studies course offered by Western Sydney University, The College, with a Grade Point Average of 6.0 or higher.

## Special Requirements

All students must complete Tertiary Study Skills with Western Sydney University, The College prior to completion of the diploma.

## Course Structure

Qualification for this award requires the successful completion of 80 credit points which include the units listed below.

Students must pass the following units

| | |
|---|---|
| **700024.5** | Electrical Fundamentals (WSTC) |
| **700018.4** | Engineering Computing (WSTC) |
| **700152.6** | Engineering Materials (WSTC) |
| **700151.5** | Engineering Physics (WSTC) |
| **700023.5** | Fundamentals of Mechanics (WSTC) |
| **700148.4** | Introduction to Engineering Practice (WSTC) |
| **700019.8** | Mathematics for Engineers 1 (WSTC) |
| **700100.6** | Mathematics for Engineers Preliminary (WSTC) |

Students must also pass the following non-award unit , which does not count for credit towards the Diploma

**700169.2** Tertiary Study Skills in Engineering (WSTC Prep)

## Diploma in Engineering Extended

### *7162.1*

This course is delivered by Western Sydney University, The College as an agent of Western Sydney University.

This program is designed to provide students with the first year units included in the Bachelor of Engineering Science. The inclusion of additional preparatory units is designed to assist students in the transition to study at University level. The Diploma is delivered via extended face to face hours in smaller learning environments.

Students who successfully complete this Diploma will articulate into Bachelor of Engineering Science with up to one year (80 CPs) equivalent of advanced standing.

For more information on Western Sydney University, The College, please refer to their web site.

### Study Mode
One and a half years full-time (four terms).

### Location

| Campus | Attendance | Mode |
|---|---|---|
| Penrith Campus | Full Time | Internal |

### Admission

**Recent School Leavers**

Completion of Year 12 with specified ATAR to be determined year by year.

**Non-Credentialed Students**

Australian Citizens and Permanent Residents who are aged 17 years or over.

**International Students**

IELTS 5.5 with minimum 5.0 in each sub band; or equivalent results from The College English Language Program or The College English Entrance Test; and completion of year 11 or equivalent with specified results.

### Course Structure
Qualification for this award requires the successful completion of 140 credit points which include the units listed in the pathways below.

Students are categorised into three Pathways. See individual links below for detailed course structure.

**Recent School Leavers**

**A7193.1** WSTC Engineering Extended Local Recent School Leavers

**Non-Credentialed Applicants**

**A7194.1** WSTC Engineering Extended Non-Credentialed Applicants

**International Students**

**A7195.1** WSTC Engineering Extended International Students

## Undergraduate Certificate in Engineering

### *7182.1*

The fourth industrial revolution, also known as Industry 4.0, is affecting almost every industry worldwide and rapidly transforming how businesses operate. The Undergraduate Certificate in Engineering is designed to provide basic employability skills and an introduction to the skills needed to navigate Industry 4.0. In addition to introducing students to the skills, knowledge, and attributes required for further studies in Engineering, students who successfully complete the Undergraduate Certificate will gain entry into the Diploma of Engineering

### Study Mode
Six months full-time

### Location

| Campus | Attendance | Mode |
|---|---|---|
| Online | Full Time | Multi Modal |

### Admission
This short course is available to Australian Citizens and Permanent Residents who are aged 17 years or over. For more information on applying please see the link to The College admission pages below.

Assumed knowledge: Any two units of English, 2 units of Science (preferably physics) as well as Mathematics equivalent to a two-unit subject in the NSW Higher School Certificate

### Course Structure
Qualification for this award requires the successful completion of 40 credit points including the units listed below.

500063 - Introduction to Engineering Practice (Block)

500064 - Engineering Computing (Block)

500065 - Mathematics for Engineers Preliminary (Block)

500067 - Engineering Physics (Block)

## Specialisations

## The College Admission Pathway - WSTC Building Design Management Extended - Recent School Leaver

### *A7158.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7136 Diploma in Building Design Management Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).

**Term 1 of Study**

| | |
|---|---|
| **700200.2** | Academic Skills for Construction Management (WSTC Prep) |
| **700264.1** | Scientific Methods for Construction Management (WSTC Prep) |
| **700216.2** | Introduction to the Australian Legal System (WSTC Prep) |
| **700275.1** | Communication Skills for Construction Management (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| **700056.3** | Academic English (WSTC Prep) |
| **700201.3** | Computer Studies (WSTC Prep) |
| **700167.2** | Tertiary Study Skills in Construction Management (WSTC Prep) |
| **700070.3** | Building 1 (WSTC) |

From Term 1 2021, 700070 will be replaced with the equivalent unit 700304 Residential Building (WSTC)

| | |
|---|---|
| **700304.2** | Residential Building (WSTC) |
| **700290.2** | Construction Communication (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| **700150.3** | Graphic Communication and Design (WSTC) |
| **700255.3** | Environmental Building Design (WSTC) |
| **700256.3** | Construction Work Safety (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| **700005.7** | Accounting Information for Managers (WSTC) |
| **700254.1** | Enterprise Law (WSTC) |
| **700071.3** | Building 2 (WSTC) |

**Replaced Units**

The units listed below count towards completion of this course for students who passed these units in 2019 or earlier.

700154 - Professional Competencies (WSTC)

## The College Admission Pathway - WSTC Building Design Management Extended - Non-Credentialed

### *A7159.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7136 Diploma in Building Design Management Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).

**Term 1 of Study**

| | |
|---|---|
| **700200.2** | Academic Skills for Construction Management (WSTC Prep) |
| **700264.1** | Scientific Methods for Construction Management (WSTC Prep) |
| **700216.2** | Introduction to the Australian Legal System (WSTC Prep) |
| **700275.1** | Communication Skills for Construction Management (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| **700056.3** | Academic English (WSTC Prep) |
| **700201.3** | Computer Studies (WSTC Prep) |
| **700167.2** | Tertiary Study Skills in Construction Management (WSTC Prep) |
| **700070.3** | Building 1 (WSTC) |

From Term 1 2021, 700070 will be replaced with the equivalent unit 700304 Residential Building (WSTC)

| | |
|---|---|
| **700304.2** | Residential Building (WSTC) |
| **700290.2** | Construction Communication (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| **700150.3** | Graphic Communication and Design (WSTC) |
| **700255.3** | Environmental Building Design (WSTC) |
| **700256.3** | Construction Work Safety (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| **700005.7** | Accounting Information for Managers (WSTC) |

700254.1 Enterprise Law (WSTC)
700071.3 Building 2 (WSTC)

**Replaced Units**

The units listed below count towards completion of this course for students who passed these units in 2019 or earlier.

700154 - Professional Competencies (WSTC)

## The College Admission Pathway - WSTC Building Design Management Extended - International

### *A7160.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7136 Diploma in Building Design Management Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).

**Term 1 of Study**

700200.2 Academic Skills for Construction Management (WSTC Prep)
700264.1 Scientific Methods for Construction Management (WSTC Prep)
700216.2 Introduction to the Australian Legal System (WSTC Prep)
700275.1 Communication Skills for Construction Management (WSTC Prep)
700270.1 English for International Students 1 (WSTC Prep)

**Term 2 of Study**

700056.3 Academic English (WSTC Prep)
700201.3 Computer Studies (WSTC Prep)
700167.2 Tertiary Study Skills in Construction Management (WSTC Prep)
700070.3 Building 1 (WSTC)

From Term 1 2021, 700070 will be replaced with the equivalent unit 700304 Residential Building (WSTC)

700304.2 Residential Building (WSTC)
700290.2 Construction Communication (WSTC)

**Term 3 of Study**

700150.3 Graphic Communication and Design (WSTC)
700255.3 Environmental Building Design (WSTC)
700256.3 Construction Work Safety (WSTC)

**Term 4 of Study**

700005.7 Accounting Information for Managers (WSTC)
700254.1 Enterprise Law (WSTC)
700071.3 Building 2 (WSTC)

**Replaced Units**

The units listed below count towards completion of this course for students who passed these units in 2019 or earlier.

700154 - Professional Competencies (WSTC)

## The College Admission Pathway - WSTC Construction Management Extended - Recent School Leavers

### *A7161.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7137 Diploma in Construction Management Extended to complete this specialisation.

**Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.**

**Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).**

**Term 1 of Study**

700200.2 Academic Skills for Construction Management (WSTC Prep)
700201.3 Computer Studies (WSTC Prep)
700216.2 Introduction to the Australian Legal System (WSTC Prep)
700275.1 Communication Skills for Construction Management (WSTC Prep)

**Term 2 of Study**

700056.3 Academic English (WSTC Prep)
700167.2 Tertiary Study Skills in Construction Management (WSTC Prep)
700264.1 Scientific Methods for Construction Management (WSTC Prep)
700154.2 Professional Competencies (WSTC)
700070.3 Building 1 (WSTC)

From Term 1 2021, 700070 will be replaced with the equivalent unit 700304 Residential Building (WSTC)

700304.2 Residential Building (WSTC)

**Term 3 of Study**

700005.7 Accounting Information for Managers (WSTC)
700150.3 Graphic Communication and Design (WSTC)
700254.1 Enterprise Law (WSTC)

**Term 4 of Study**

700256.3 Construction Work Safety (WSTC)
700071.3 Building 2 (WSTC)
700252.2 Enterprise Leadership (WSTC)

## The College Admission Pathway - WSTC Construction Management Extended - Non-Credentialed

### *A7162.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7137 Diploma in Construction Management Extended to complete this specialisation.

**Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.**

**Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).**

**Term 1 of Study**

700200.2 Academic Skills for Construction Management (WSTC Prep)
700201.3 Computer Studies (WSTC Prep)
700216.2 Introduction to the Australian Legal System (WSTC Prep)
700275.1 Communication Skills for Construction Management (WSTC Prep)

**Term 2 of Study**

700056.3 Academic English (WSTC Prep)
700167.2 Tertiary Study Skills in Construction Management (WSTC Prep)
700264.1 Scientific Methods for Construction Management (WSTC Prep)
700154.2 Professional Competencies (WSTC)
700070.3 Building 1 (WSTC)

From Term 1 2021, 700070 will be replaced with the equivalent unit 700304 Residential Building (WSTC)

700304.2 Residential Building (WSTC)

**Term 3 of Study**

700005.7 Accounting Information for Managers (WSTC)
700150.3 Graphic Communication and Design (WSTC)
700254.1 Enterprise Law (WSTC)

**Term 4 of Study**

700256.3 Construction Work Safety (WSTC)
700071.3 Building 2 (WSTC)
700252.2 Enterprise Leadership (WSTC)

## The College Admission Pathway - WSTC Construction Management Extended - International

### *A7163.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7137 Diploma in Construction Management Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).

**Term 1 of Study**

700200.2 Academic Skills for Construction Management (WSTC Prep)
700270.1 English for International Students 1 (WSTC Prep)
700201.3 Computer Studies (WSTC Prep)
700216.2 Introduction to the Australian Legal System (WSTC Prep)
700275.1 Communication Skills for Construction Management (WSTC Prep)

**Term 2 of Study**

700056.3 Academic English (WSTC Prep)
700167.2 Tertiary Study Skills in Construction Management (WSTC Prep)
700264.1 Scientific Methods for Construction Management (WSTC Prep)
700154.2 Professional Competencies (WSTC)
700070.3 Building 1 (WSTC)

From Term 1 2021, 700070 will be replaced with the equivalent unit 700304 Residential Building (WSTC)

700304.2 Residential Building (WSTC)

**Term 3 of Study**

700005.7 Accounting Information for Managers (WSTC)
700150.3 Graphic Communication and Design (WSTC)
700254.1 Enterprise Law (WSTC)

**Term 4 of Study**

700256.3 Construction Work Safety (WSTC)
700071.3 Building 2 (WSTC)
700252.2 Enterprise Leadership (WSTC)

## The College Admission Pathway - WSTC Engineering Extended Local Recent School Leavers

### *A7193.1*

### Specialisation Structure

Students must be enrolled in 7162 Diploma in Engineering Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Note that students must pass 40 credit points from the following preparatory units prior to enrolling in the University level units listed below.

**Term 1 of study**

700283.2 Professional Communication Skills for Engineering (WSTC Prep)
700284.1 Mathematics 1 (WSTC Prep)
700144.2 Foundation Physics 1 (WSTC Prep)
700204.2 Introductory Programming (WSTC Prep)

**Term 2 of study**

700169.2 Tertiary Study Skills in Engineering (WSTC Prep)
700146.4 Mathematics 2 (WSTC Prep)
700145.3 Foundation Physics 2 (WSTC Prep)
700148.4 Introduction to Engineering Practice (WSTC)
700018.4 Engineering Computing (WSTC)

**Term 3 of study**

700100.6 Mathematics for Engineers Preliminary (WSTC)
700152.6 Engineering Materials (WSTC)
700151.5 Engineering Physics (WSTC)

**Term 4 of study**

700024.5 Electrical Fundamentals (WSTC)
700023.5 Fundamentals of Mechanics (WSTC)
700019.8 Mathematics for Engineers 1 (WSTC)

## The College Admission Pathway - WSTC Engineering Extended Non-Credentialed Applicants

### *A7194.1*

### Specialisation Structure

Students must be enrolled in 7162 Diploma in Engineering Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Note that students must pass 40 credit points from the following preparatory units prior to enrolling in the University level units listed below.

**Term 1 of study**

700283.2 Professional Communication Skills for Engineering (WSTC Prep)
700284.1 Mathematics 1 (WSTC Prep)
700144.2 Foundation Physics 1 (WSTC Prep)
700204.2 Introductory Programming (WSTC Prep)

**Term 2 of study**

700169.2 Tertiary Study Skills in Engineering (WSTC Prep)
700146.4 Mathematics 2 (WSTC Prep)
700145.3 Foundation Physics 2 (WSTC Prep)
700148.4 Introduction to Engineering Practice (WSTC)
700018.4 Engineering Computing (WSTC)

**Term 3 of study**

700100.6 Mathematics for Engineers Preliminary (WSTC)
700152.6 Engineering Materials (WSTC)
700151.5 Engineering Physics (WSTC)

**Term 4 of study**

700024.5 Electrical Fundamentals (WSTC)
700023.5 Fundamentals of Mechanics (WSTC)
700019.8 Mathematics for Engineers 1 (WSTC)

## The College Admission Pathway - WSTC Engineering Extended International Students

### *A7195.1*

### Specialisation Structure

Students must be enrolled in 7162 Diploma in Engineering Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Note that students must pass 40 credit points from the following preparatory units prior to enrolling in the University level units listed below.

**Term 1 of study**

700283.2 Professional Communication Skills for Engineering (WSTC Prep)
700270.1 English for International Students 1 (WSTC Prep)
700284.1 Mathematics 1 (WSTC Prep)
700144.2 Foundation Physics 1 (WSTC Prep)
700204.2 Introductory Programming (WSTC Prep)

**Term 2 of study**

**700169.2** Tertiary Study Skills in Engineering (WSTC Prep)
**700146.4** Mathematics 2 (WSTC Prep)
**700145.3** Foundation Physics 2 (WSTC Prep)
**700148.4** Introduction to Engineering Practice (WSTC)
**700018.4** Engineering Computing (WSTC)

**Term 3 of study**

**700100.6** Mathematics for Engineers Preliminary (WSTC)
**700152.6** Engineering Materials (WSTC)
**700151.5** Engineering Physics (WSTC)

**Term 4 of study**

**700024.5** Electrical Fundamentals (WSTC)
**700023.5** Fundamentals of Mechanics (WSTC)
**700019.8** Mathematics for Engineers 1 (WSTC)

## The College Admission Pathway - WSTC Construction Management Extended - Recent School Leavers

### *A7263.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7165 Diploma in Construction Technology Extended to complete this specialisation.

**Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.**

**Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).**

**Term 1 of Study**

**700200.2** Academic Skills for Construction Management (WSTC Prep)
**700201.3** Computer Studies (WSTC Prep)
**700216.2** Introduction to the Australian Legal System (WSTC Prep)
**700275.1** Communication Skills for Construction Management (WSTC Prep)

**Term 2 of Study**

**700056.3** Academic English (WSTC Prep)
**700167.2** Tertiary Study Skills in Construction Management (WSTC Prep)
**700264.1** Scientific Methods for Construction Management (WSTC Prep)
**700290.2** Construction Communication (WSTC)
**700070.3** Building 1 (WSTC)

From Term 1 2021, 700070 will be replaced with the equivalent unit 700304 Residential Building (WSTC)

**700304.2** Residential Building (WSTC)

**Term 3 of Study**

**700005.7** Accounting Information for Managers (WSTC)
**700150.3** Graphic Communication and Design (WSTC)
**700254.1** Enterprise Law (WSTC)

**Term 4 of Study**

**700256.3** Construction Work Safety (WSTC)
**700071.3** Building 2 (WSTC)
**700252.2** Enterprise Leadership (WSTC)

## The College Admission Pathway - WSTC Construction Management Extended - Non-Credentialed

### *A7264.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Multi Modal |

### Specialisation Structure

Students must be enrolled in 7165 Diploma in Construction Technology Extended to complete this specialisation.

**Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.**

**Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).**

**Term 1 of Study**

**700200.2** Academic Skills for Construction Management (WSTC Prep)
**700201.3** Computer Studies (WSTC Prep)
**700216.2** Introduction to the Australian Legal System (WSTC Prep)
**700275.1** Communication Skills for Construction Management (WSTC Prep)

**Term 2 of Study**

**700056.3** Academic English (WSTC Prep)
**700167.2** Tertiary Study Skills in Construction Management (WSTC Prep)
**700264.1** Scientific Methods for Construction Management (WSTC Prep)
**700290.2** Construction Communication (WSTC)
**700070.3** Building 1 (WSTC)

From Term 1 2021, 700070 will be replaced with the equivalent unit 700304 Residential Building (WSTC)

**700304.2** Residential Building (WSTC)

**Term 3 of Study**

| | |
|---|---|
| 700005.7 | Accounting Information for Managers (WSTC) |
| 700150.3 | Graphic Communication and Design (WSTC) |
| 700254.1 | Enterprise Law (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| 700256.3 | Construction Work Safety (WSTC) |
| 700071.3 | Building 2 (WSTC) |
| 700252.2 | Enterprise Leadership (WSTC) |

## The College Admission Pathway - WSTC Construction Management Extended - International

### *A7265.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7165 Diploma in Construction Technology Extended to complete this specialisation.

**Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.**

**Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).**

**Term 1 of Study**

| | |
|---|---|
| 700200.2 | Academic Skills for Construction Management (WSTC Prep) |
| 700270.1 | English for International Students 1 (WSTC Prep) |
| 700201.3 | Computer Studies (WSTC Prep) |
| 700216.2 | Introduction to the Australian Legal System (WSTC Prep) |
| 700275.1 | Communication Skills for Construction Management (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| 700056.3 | Academic English (WSTC Prep) |
| 700167.2 | Tertiary Study Skills in Construction Management (WSTC Prep) |
| 700264.1 | Scientific Methods for Construction Management (WSTC Prep) |
| 700290.2 | Construction Communication (WSTC) |
| 700070.3 | Building 1 (WSTC) |

From Term 1 2021, 700070 will be replaced with the equivalent unit 700304 Residential Building (WSTC)

| | |
|---|---|
| 700304.2 | Residential Building (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| 700005.7 | Accounting Information for Managers (WSTC) |
| 700150.3 | Graphic Communication and Design (WSTC) |
| 700254.1 | Enterprise Law (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| 700256.3 | Construction Work Safety (WSTC) |
| 700071.3 | Building 2 (WSTC) |
| 700252.2 | Enterprise Leadership (WSTC) |

## The College Admission Pathway - WSTC Construction Technology Extended - Recent School Leavers

### *A7283.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7165 Diploma in Construction Technology Extended to complete this specialisation.

**Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.**

**Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).**

**Term 1 of Study**

| | |
|---|---|
| 700200.2 | Academic Skills for Construction Management (WSTC Prep) |
| 700216.2 | Introduction to the Australian Legal System (WSTC Prep) |
| 700317.2 | Introduction to Building Calculations (WSTC Prep) |
| 700310.2 | Essential Literacy for Construction Professionals I (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| 700319.1 | Essential Literacy for Construction Professionals II (WSTC Prep) |
| 700318.2 | Building Calculations (WSTC Prep) |
| 700290.2 | Construction Communication (WSTC) |
| 700304.2 | Residential Building (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| 700308.1 | Building Science (WSTC) |
| 700306.1 | Drawing and CAD (WSTC) |
| 700254.1 | Enterprise Law (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| 700256.3 | Construction Work Safety (WSTC) |
| 700305.1 | Non-Residential Building (WSTC) |
| 700255.3 | Environmental Building Design (WSTC) |

## The College Admission Pathway - WSTC Construction Technology Extended - Non-credentialed

### *A7284.1*

### Specialisation Structure

Students must be enrolled in 7165 Diploma in Construction Technology Extended to complete this specialisation.

**Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.**

**Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).**

**Term 1 of Study**

| | |
|---|---|
| 700200.2 | Academic Skills for Construction Management (WSTC Prep) |
| 700216.2 | Introduction to the Australian Legal System (WSTC Prep) |
| 700317.2 | Introduction to Building Calculations (WSTC Prep) |
| 700310.2 | Essential Literacy for Construction Professionals I (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| 700319.1 | Essential Literacy for Construction Professionals II (WSTC Prep) |
| 700318.2 | Building Calculations (WSTC Prep) |
| 700290.2 | Construction Communication (WSTC) |
| 700304.2 | Residential Building (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| 700308.1 | Building Science (WSTC) |
| 700306.1 | Drawing and CAD (WSTC) |
| 700254.1 | Enterprise Law (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| 700256.3 | Construction Work Safety (WSTC) |
| 700305.1 | Non-Residential Building (WSTC) |
| 700255.3 | Environmental Building Design (WSTC) |

## The College Admission Pathway - WSTC Construction Technology Extended - International

### *A7285.1*

### Specialisation Structure

Students must be enrolled in 7165 Diploma in Construction Technology Extended to complete this specialisation.

**Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.**

**Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).**

**Term 1 of Study**

| | |
|---|---|
| 700200.2 | Academic Skills for Construction Management (WSTC Prep) |
| 700270.1 | English for International Students 1 (WSTC Prep) |
| 700216.2 | Introduction to the Australian Legal System (WSTC Prep) |
| 700317.2 | Introduction to Building Calculations (WSTC Prep) |
| 700310.2 | Essential Literacy for Construction Professionals I (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| 700319.1 | Essential Literacy for Construction Professionals II (WSTC Prep) |
| 700318.2 | Building Calculations (WSTC Prep) |
| 700290.2 | Construction Communication (WSTC) |
| 700304.2 | Residential Building (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| 700308.1 | Building Science (WSTC) |
| 700306.1 | Drawing and CAD (WSTC) |
| 700254.1 | Enterprise Law (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| 700256.3 | Construction Work Safety (WSTC) |
| 700305.1 | Non-Residential Building (WSTC) |
| 700255.3 | Environmental Building Design (WSTC) |

## The College Admission Pathway - WSTC Building Design Management Extended - Local Recent School Leavers

### *A7286.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7136 Diploma in Building Design Management Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).

**Term 1 of Study**

| | |
|---|---|
| 700200.2 | Academic Skills for Construction Management (WSTC Prep) |
| 700216.2 | Introduction to the Australian Legal System (WSTC Prep) |
| 700317.2 | Introduction to Building Calculations (WSTC Prep) |
| 700310.2 | Essential Literacy for Construction Professionals I (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| 700319.1 | Essential Literacy for Construction Professionals II (WSTC Prep) |
| 700318.2 | Building Calculations (WSTC Prep) |
| 700290.2 | Construction Communication (WSTC) |
| 700304.2 | Residential Building (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| 700308.1 | Building Science (WSTC) |
| 700306.1 | Drawing and CAD (WSTC) |
| 700254.1 | Enterprise Law (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| 700256.3 | Construction Work Safety (WSTC) |
| 700305.1 | Non-Residential Building (WSTC) |
| 700255.3 | Environmental Building Design (WSTC) |

## The College Admission Pathway - WSTC Building Design Management Extended - Non-Credentialed

### *A7287.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7136 Diploma in Building Design Management Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).

**Term 1 of Study**

| | |
|---|---|
| 700200.2 | Academic Skills for Construction Management (WSTC Prep) |
| 700216.2 | Introduction to the Australian Legal System (WSTC Prep) |
| 700317.2 | Introduction to Building Calculations (WSTC Prep) |
| 700310.2 | Essential Literacy for Construction Professionals I (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| 700319.1 | Essential Literacy for Construction Professionals II (WSTC Prep) |
| 700318.2 | Building Calculations (WSTC Prep) |
| 700290.2 | Construction Communication (WSTC) |
| 700304.2 | Residential Building (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| 700308.1 | Building Science (WSTC) |
| 700306.1 | Drawing and CAD (WSTC) |
| 700254.1 | Enterprise Law (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| 700256.3 | Construction Work Safety (WSTC) |
| 700305.1 | Non-Residential Building (WSTC) |
| 700255.3 | Environmental Building Design (WSTC) |

## The College Admission Pathway - WSTC Building Design Management Extended - International

### *A7288.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7136 Diploma in Building Design Management Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Students must pass 40 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).

**Term 1 of Study**

| | |
|---|---|
| 700200.2 | Academic Skills for Construction Management (WSTC Prep) |
| 700216.2 | Introduction to the Australian Legal System (WSTC Prep) |
| 700317.2 | Introduction to Building Calculations (WSTC Prep) |
| 700310.2 | Essential Literacy for Construction Professionals I (WSTC Prep) |
| 700270.1 | English for International Students 1 (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| 700319.1 | Essential Literacy for Construction Professionals II (WSTC Prep) |
| 700318.2 | Building Calculations (WSTC Prep) |
| 700290.2 | Construction Communication (WSTC) |
| 700304.2 | Residential Building (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| 700308.1 | Building Science (WSTC) |
| 700306.1 | Drawing and CAD (WSTC) |
| 700254.1 | Enterprise Law (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| 700256.3 | Construction Work Safety (WSTC) |
| 700305.1 | Non-Residential Building (WSTC) |
| 700255.3 | Environmental Building Design (WSTC) |

## The College Admission Pathway - WSTC Building Design Management Extended - Local Recent School Leavers

### *A7317.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Multi Modal |

### Specialisation Structure

Students must be enrolled in 7183 Diploma in Building Design Management Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Students must pass 30 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).

**Term 1 of Study**

| | |
|---|---|
| 700200.2 | Academic Skills for Construction Management (WSTC Prep) |
| 700317.2 | Introduction to Building Calculations (WSTC Prep) |
| 700310.2 | Essential Literacy for Construction Professionals I (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| 700319.1 | Essential Literacy for Construction Professionals II (WSTC Prep) |
| 700318.2 | Building Calculations (WSTC Prep) |
| 700290.2 | Construction Communication (WSTC) |
| 700304.2 | Residential Building (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| 700308.1 | Building Science (WSTC) |
| 700306.1 | Drawing and CAD (WSTC) |
| 700309.1 | Contract Administration (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| 700256.3 | Construction Work Safety (WSTC) |
| 700305.1 | Non-Residential Building (WSTC) |
| 700255.3 | Environmental Building Design (WSTC) |

## The College Admission Pathway - WSTC Building Design Management Extended - Non-Credentialed Applicants

### *A7318.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7183 Diploma in Building Design Management Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Students must pass 30 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).

**Term 1 of Study**

| | |
|---|---|
| 700200.2 | Academic Skills for Construction Management (WSTC Prep) |
| 700317.2 | Introduction to Building Calculations (WSTC Prep) |
| 700310.2 | Essential Literacy for Construction Professionals I (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| 700319.1 | Essential Literacy for Construction Professionals II (WSTC Prep) |
| 700318.2 | Building Calculations (WSTC Prep) |
| 700290.2 | Construction Communication (WSTC) |
| 700304.2 | Residential Building (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| 700308.1 | Building Science (WSTC) |
| 700306.1 | Drawing and CAD (WSTC) |
| 700309.1 | Contract Administration (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| 700256.3 | Construction Work Safety (WSTC) |
| 700305.1 | Non-Residential Building (WSTC) |
| 700255.3 | Environmental Building Design (WSTC) |

## The College Admission Pathway - WSTC Building Design Management Extended - International Students

### *A7319.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7183 Diploma in Building Design Management Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Students must pass 30 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).

**Term 1 of Study**

| | |
|---|---|
| **700200.2** | Academic Skills for Construction Management (WSTC Prep) |
| **700317.2** | Introduction to Building Calculations (WSTC Prep) |
| **700310.2** | Essential Literacy for Construction Professionals I (WSTC Prep) |
| **700270.1** | English for International Students 1 (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| **700319.1** | Essential Literacy for Construction Professionals II (WSTC Prep) |
| **700318.2** | Building Calculations (WSTC Prep) |
| **700290.2** | Construction Communication (WSTC) |
| **700304.2** | Residential Building (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| **700308.1** | Building Science (WSTC) |
| **700306.1** | Drawing and CAD (WSTC) |
| **700309.1** | Contract Administration (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| **700256.3** | Construction Work Safety (WSTC) |
| **700305.1** | Non-Residential Building (WSTC) |
| **700255.3** | Environmental Building Design (WSTC) |

## The College Admission Pathway - WSTC Construction Technology Extended - Local Recent School Leavers

### *A7320.1*

### Location

| Campus | Mode |
|---|---|
| The College - Nirimba Education Precinct | Internal |

### Specialisation Structure

Students must be enrolled in 7184 Diploma in Construction Technology Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Students must pass 30 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).

**Term 1 of Study**

| | |
|---|---|
| **700200.2** | Academic Skills for Construction Management (WSTC Prep) |
| **700317.2** | Introduction to Building Calculations (WSTC Prep) |
| **700310.2** | Essential Literacy for Construction Professionals I (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| **700319.1** | Essential Literacy for Construction Professionals II (WSTC Prep) |
| **700318.2** | Building Calculations (WSTC Prep) |
| **700290.2** | Construction Communication (WSTC) |
| **700304.2** | Residential Building (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| **700308.1** | Building Science (WSTC) |
| **700306.1** | Drawing and CAD (WSTC) |
| **700309.1** | Contract Administration (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| **700256.3** | Construction Work Safety (WSTC) |
| **700305.1** | Non-Residential Building (WSTC) |
| **700255.3** | Environmental Building Design (WSTC) |

## The College Admission Pathway - WSTC Construction Technology Extended - Non-Credentialed Applicants

### *A7321.1*

### Specialisation Structure

Students must be enrolled in 7184 Diploma in Construction Technology Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Students must pass 30 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).

**Term 1 of Study**

| | |
|---|---|
| 700200.2 | Academic Skills for Construction Management (WSTC Prep) |
| 700317.2 | Introduction to Building Calculations (WSTC Prep) |
| 700310.2 | Essential Literacy for Construction Professionals I (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| 700319.1 | Essential Literacy for Construction Professionals II (WSTC Prep) |
| 700318.2 | Building Calculations (WSTC Prep) |
| 700290.2 | Construction Communication (WSTC) |
| 700304.2 | Residential Building (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| 700308.1 | Building Science (WSTC) |
| 700306.1 | Drawing and CAD (WSTC) |
| 700309.1 | Contract Administration (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| 700256.3 | Construction Work Safety (WSTC) |
| 700305.1 | Non-Residential Building (WSTC) |
| 700255.3 | Environmental Building Design (WSTC) |

## The College Admission Pathway - WSTC Construction Technology Extended - International Students

### *A7322.1*

## Specialisation Structure

Students must be enrolled in 7184 Diploma in Construction Technology Extended to complete this specialisation.

Students must pass all Preparatory units (WSTC Prep) for which no advanced standing will be granted in the University degree program.

Students must pass 30 credit points from the Preparatory units (Level Z) prior to enrolling in the University level units (WSTC).

**Term 1 of Study**

| | |
|---|---|
| 700200.2 | Academic Skills for Construction Management (WSTC Prep) |
| 700317.2 | Introduction to Building Calculations (WSTC Prep) |
| 700310.2 | Essential Literacy for Construction Professionals I (WSTC Prep) |
| 700270.1 | English for International Students 1 (WSTC Prep) |

**Term 2 of Study**

| | |
|---|---|
| 700319.1 | Essential Literacy for Construction Professionals II (WSTC Prep) |
| 700318.2 | Building Calculations (WSTC Prep) |
| 700290.2 | Construction Communication (WSTC) |
| 700304.2 | Residential Building (WSTC) |

**Term 3 of Study**

| | |
|---|---|
| 700308.1 | Building Science (WSTC) |
| 700306.1 | Drawing and CAD (WSTC) |
| 700309.1 | Contract Administration (WSTC) |

**Term 4 of Study**

| | |
|---|---|
| 700256.3 | Construction Work Safety (WSTC) |
| 700305.1 | Non-Residential Building (WSTC) |
| 700255.3 | Environmental Building Design (WSTC) |

## Key Program - Construction

### *KT3026.1*

The Construction Key Program consisits of core subjects in structural engineering, project management and construction technologies. Graduates will work in the fields of construction, structural design, project management, quantity surveying and estimation. Career opportunities include those in the private or public sector on projects covering roads, bridges, airports, and residential and commercial buildings.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

## Full time - Autumn intake

**Year 2**

**Autumn session**

| | |
|---|---|
| 300731.2 | Soil Engineering |
| 300040.4 | Mechanics of Materials |
| 200486.3 | Quantity Surveying 1 |
| 300482.2 | Engineering Geology and Concrete Materials |

**Spring session**

| | |
|---|---|
| 300733.4 | Introduction to Structural Engineering |
| MG102A.4 | Management Foundations |

**Note: Students are advised to enrol in unit 200571 Management Dynamics in place of MG102A Management Foundations.**

| | |
|---|---|
| 300738.5 | Surveying for Engineers |
| 200468.2 | Estimating 1 |

**Year 3**

**Autumn session**

**300732.4** Structural Analysis
**300727.4** Project Management
**300728.5** Construction Planning

And one elective

**Spring session**

**300053.6** Professional Practice
**300730.4** Steel Structures
**300736.4** Concrete Structures (UG)

And one elective

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Autumn session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Autumn and Spring sessions.**

**200471.6** Construction Technology 5 (Envelope)
**300488.6** Numerical Methods in Engineering

And one elective

**Spring session**

**300483.6** Engineering Project
**300725.5** Construction Technology 6 (Services)
**300485.3** Foundation Engineering

And one elective

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Autumn session**

**300675.4** Honours Thesis
**300488.6** Numerical Methods in Engineering

And one elective

**From Autumn 2021 students are advised to take 301245 Final Year Project 1 and one Alternate Unit from the list below instead of 300675.**

**301245.3** Final Year Project 1 (UG Engineering)

**Spring session**

**300675.4** Honours Thesis
**300485.3** Foundation Engineering

And one elective

**Students who complete 301245 in the Spring session from 2020 or Autumn session from 2021 onwards, are advised to select 301246 Final Year Project 2 and one Alternate unit to replace 300675 in their second semester for Honours.**

**301246.4** Final Year Project 2 (UG Engineering)

## Alternate Units

**300986.3** Applied Mechanics
**300987.3** Composite Structures
**300988.3** Highway Infrastructure
**300990.3** Pile Foundations
**300739.4** Timber Structures (UG)
**200503.4** Construction Information Systems
**300726.4** Estimating 2
**200487.5** Quantity Surveying 2
**300748.4** Quality and Value Management

## Full-time - Spring intake

**Year 1**

**Spring session**

**200237.5** Mathematics for Engineers 1
**300463.4** Fundamentals of Mechanics
**300021.4** Electrical Fundamentals
**300462.3** Engineering and Design Concepts

**Autumn session**

**200238.3** Mathematics for Engineers 2
**300464.2** Physics and Materials
**300040.4** Mechanics of Materials
**300674.2** Engineering, Design and Construction Practice

**Year 2**

**Spring session**

**300733.4** Introduction to Structural Engineering
**MG102A.4** Management Foundations

**Note: Students are advised to enrol in unit 200571 Management Dynamics in place of MG102A Management Foundations.**

**300738.5** Surveying for Engineers
**200468.2** Estimating 1

**Autumn session**

**300731.2** Soil Engineering
**300027.4** Engineering Computing
**200486.3** Quantity Surveying 1
**300482.2** Engineering Geology and Concrete Materials

**Year 3**

**Spring session**

**300053.6** Professional Practice

**300730.4** Steel Structures
**300736.4** Concrete Structures (UG)

And one elective

**Autumn session**

**300732.4** Structural Analysis
**300727.4** Project Management
**300728.5** Construction Planning

And one elective

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Spring session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Spring and Autumn sessions.**

**300725.5** Construction Technology 6 (Services)
**300485.3** Foundation Engineering

And one elective

**Autumn session**

**300483.6** Engineering Project
**200471.6** Construction Technology 5 (Envelope)
**300488.6** Numerical Methods in Engineering

And one elective

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Spring session**

**300675.4** Honours Thesis
**300485.3** Foundation Engineering

And one elective

**From Spring 2020 students are advised to take 301245 Final Year Project 1 and one Alternate Unit from the list below instead of 300675.**

**301245.3** Final Year Project 1 (UG Engineering)

**Autumn session**

**300675.4** Honours Thesis
**300488.6** Numerical Methods in Engineering

And one elective

**From Autumn 2021 students are advised to take 301246 Final Year Project 2 and one Alternate Unit from the list below instead of 300675.**

**301246.4** Final Year Project 2 (UG Engineering)

## Alternate Units

**300986.3** Applied Mechanics
**300987.3** Composite Structures
**300988.3** Highway Infrastructure
**300990.3** Pile Foundations
**300739.4** Timber Structures (UG)
**200503.4** Construction Information Systems
**300726.4** Estimating 2
**200487.5** Quantity Surveying 2
**300748.4** Quality and Value Management

## Elective Units

**Although students may choose any unit offered by the University as an elective, it is recommended that electives are chosen from the following list.**

**300706.3** Building 1
**300707.2** Building 2
**300748.4** Quality and Value Management
**300723.4** Development Control
**300722.2** Building Regulations Studies
**200482.2** Construction in Practice 1
**200484.7** Construction in Practice 3
**300762.4** Fluid Mechanics
**300486.2** Infrastructure Engineering
**200471.6** Construction Technology 5 (Envelope)
**300725.5** Construction Technology 6 (Services)

## Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

## Key Program - Mechanical

### *KT3042.1*

In addition to providing training in conventional mechanical engineering subjects, the course structure introduces students to units of study that address sustainability including sustainable design and sustainable energy engineering. Graduates will be well equipped with broad-based skills that meet the demand of Australian industries and are conscious of the need to promote sustainable design and practices. Examples include mechanical and machinery design; manufacturing; energy production; and marketing and management activities. Skills gained are required in industries such as manufacturing, materials handling, automobile, aerospace, mining, building services and infrastructure development.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

**300035.5** Kinematics and Kinetics of Machines
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics

Choose one of

**301079.3** Graphics 3: 3D Engineering Specifications and Visualisation
**300282.2** Industrial Graphics 2: Transition

**Spring session**

**300044.4** Microcontrollers and PLCs
**300480.4** Dynamics of Mechanical Systems
**300735.4** Automated Manufacturing

Choose one of

**300760.4** Thermodynamics and Heat Transfer
**300761.3** Advanced Mechanics of Materials

**Year 3**

**Autumn session**

**300056.6** Robotics
**300764.3** Mechanical Design

Choose one of

**300763.3** Advanced Dynamics
**300759.4** Thermal and Fluid Engineering

And one elective

**Spring session**

**300043.6** Mobile Robotics
**300053.6** Professional Practice

Choose one of

**300760.4** Thermodynamics and Heat Transfer
**300761.3** Advanced Mechanics of Materials

And one elective

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Autumn session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Autumn and Spring sessions.**

**300025.5** Electronics

Choose one of

**300763.3** Advanced Dynamics
**300759.4** Thermal and Fluid Engineering

And one elective

**Spring session**

**300483.6** Engineering Project
**300487.5** Mechatronic Design

Choose one of

**301095.2** Sustainable Design 1: Materials and Technology
**300304.3** Sustainable Design: Materials Technology

And one elective

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Autumn session**

**300675.4** Honours Thesis

Choose one of

**300763.3** Advanced Dynamics
**300759.4** Thermal and Fluid Engineering

And one elective

**From Autumn 2021 students are advised to take 301245 Final Year Project 1 and one Alternate Unit from the list below instead of 300675.**

**301245.3** Final Year Project 1 (UG Engineering)

**Spring session**

**300675.4** Honours Thesis
**300487.5** Mechatronic Design

And one elective

**Students who complete 301245 in the Spring session from 2020 or Autumn session from 2021 onwards, are advised to select 301246 Final Year Project 2 and one Alternate unit to replace 300675 in their second semester for Honours.**

**301246.4** Final Year Project 2 (UG Engineering)

## Alternate Units

**301121.4** Biomedical Signals and Data Analysis
**300999.3** Computational Fluid Dynamics
**301091.3** Graphics 4: Kinetic Narratives

**300570.4** Human-Computer Interaction
**300361.4** Introduction to Human Biology
**300044.4** Microcontrollers and PLCs
**300043.6** Mobile Robotics
**301081.3** Sustainable Design 2: Product Service Systems

## Full-time - Spring Intake

**Year 1**

**Spring session**

**200237.5** Mathematics for Engineers 1
**300463.4** Fundamentals of Mechanics
**300021.4** Electrical Fundamentals
**300462.3** Engineering and Design Concepts

**Autumn session**

**200238.3** Mathematics for Engineers 2
**300464.2** Physics and Materials
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics

**Year 2**

**Spring session**

**300735.4** Automated Manufacturing
**300044.4** Microcontrollers and PLCs

Choose one of

**300760.4** Thermodynamics and Heat Transfer
**300761.3** Advanced Mechanics of Materials

And one elective

**Autumn session**

**300027.4** Engineering Computing
**300674.2** Engineering, Design and Construction Practice
**300035.5** Kinematics and Kinetics of Machines

Choose one of

**301079.3** Graphics 3: 3D Engineering Specifications and Visualisation
**300282.2** Industrial Graphics 2: Transition

**Year 3**

**Spring session**

**300053.6** Professional Practice
**300480.4** Dynamics of Mechanical Systems
**300043.6** Mobile Robotics

Choose one of

**300760.4** Thermodynamics and Heat Transfer
**300761.3** Advanced Mechanics of Materials

**Autumn session**

**300764.3** Mechanical Design
**300056.6** Robotics

Choose one of

**300763.3** Advanced Dynamics
**300759.4** Thermal and Fluid Engineering

And one elective

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Spring session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Spring and Autumn sessions.**

**300487.5** Mechatronic Design

Choose one of

**301095.2** Sustainable Design 1: Materials and Technology
**300304.3** Sustainable Design: Materials Technology

And one elective

**Autumn session**

**300483.6** Engineering Project
**300025.5** Electronics

Choose one of

**300763.3** Advanced Dynamics
**300759.4** Thermal and Fluid Engineering

And one elective

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Spring session**

**300675.4** Honours Thesis
**300487.5** Mechatronic Design

And one elective

**From Spring 2020 students are advised to take 301245 Final Year Project 1 and one Alternate Unit from the list below instead of 300675.**

**301245.3** Final Year Project 1 (UG Engineering)

**Autumn session**

**300675.4** Honours Thesis

Choose one of

**300763.3** Advanced Dynamics
**300759.4** Thermal and Fluid Engineering

And one elective

**From Autumn 2021 students are advised to take 301246 Final Year Project 2 and one Alternate Unit from the list below instead of 300675.**

**301246.4** Final Year Project 2 (UG Engineering)

## Alternate Units

**301121.4** Biomedical Signals and Data Analysis
**300999.3** Computational Fluid Dynamics
**301091.3** Graphics 4: Kinetic Narratives
**300570.4** Human-Computer Interaction
**300361.4** Introduction to Human Biology
**300044.4** Microcontrollers and PLCs
**300043.6** Mobile Robotics
**301081.3** Sustainable Design 2: Product Service Systems

## Elective Units

**Although students may choose any unit offered by the University as an elective, students are recommended to choose their electives from the following list.**

**300725.5** Construction Technology 6 (Services)
**300733.4** Introduction to Structural Engineering
**300052.5** Power and Machines
**300005.4** Circuit Theory
**300071.4** Electrical Machines 1
**300075.7** Instrumentation and Measurement
**300732.4** Structural Analysis

## Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

## Key Program - Civil

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### *KT3043.1*

Civil engineering covers the fields of structural design, construction management and water engineering, together with quality assurance and environmental engineering. Graduates will work in the fields of design, construction and management. Projects may cover roads, airports, water supply and sewerage schemes, and large buildings. You may be an engineer in private industry, government departments, or in city, municipal or shire councils.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

**300731.2** Soil Engineering
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics
**300482.2** Engineering Geology and Concrete Materials

**Spring session**

**300733.4** Introduction to Structural Engineering
**MG102A.4** Management Foundations

**Note: Students are advised to enrol in unit 200571 Management Dynamics in place of MG102A Management Foundations.**

**300738.5** Surveying for Engineers
**300765.4** Hydraulics

**Year 3**

**Autumn session**

**300732.4** Structural Analysis
**300486.2** Infrastructure Engineering

**Note: Students are advised to enrol in unit 300982 Transportation Engineering in place of 300486 Infrastructure Engineering.**

**300766.2** Hydrology

And one elective

**Spring session**

**300053.6** Professional Practice
**300730.4** Steel Structures
**300736.4** Concrete Structures (UG)

And one elective

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Autumn session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Autumn and Spring sessions.**

**300739.4** Timber Structures (UG)
**300488.6** Numerical Methods in Engineering

And one elective

**Spring session**

**300483.6** Engineering Project
**300737.6** Environmental Engineering
**300485.3** Foundation Engineering

And one elective

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Autumn session**

**300675.4** Honours Thesis
**300485.3** Foundation Engineering

And one elective

**From Autumn 2021 students are advised to take 301245 Final Year Project 1 and one Alternate Unit from the list below instead of 300675.**

**301245.3** Final Year Project 1 (UG Engineering)

**Spring session**

**300675.4** Honours Thesis
**300488.6** Numerical Methods in Engineering

And one elective

**Students who complete 301245 in the Spring session from 2020 or Autumn session from 2021 onwards, are advised to select 301246 Final Year Project 2 and one Alternate unit to replace 300675 in their second semester for Honours.**

**301246.4** Final Year Project 2 (UG Engineering)

## Alternate Units

**300986.3** Applied Mechanics
**300987.3** Composite Structures
**300988.3** Highway Infrastructure
**300989.2** Hydrogeology

From 2021 this unit is replaced by

**301397.2** Hydrogeology
**300990.3** Pile Foundations
**300991.3** Statistical Hydrology
**300739.4** Timber Structures (UG)
**300994.3** Waste Management
**300992.3** Water and Wastewater Treatment

From Spring 2022, 300992 Water and Wastewater Treatment is replaced by 301424 Water Supply Systems Design

**301424.1** Water Supply Systems Design
**300993.3** Water Resource Engineering

## Full-time - Spring Intake

**Year 1**

**Spring session**

**200237.5** Mathematics for Engineers 1
**300463.4** Fundamentals of Mechanics
**300021.4** Electrical Fundamentals
**300462.3** Engineering and Design Concepts

**Autumn session**

**200238.3** Mathematics for Engineers 2
**300464.2** Physics and Materials
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics

**Year 2**

**Spring session**

**300733.4** Introduction to Structural Engineering
**300765.4** Hydraulics
**300738.5** Surveying for Engineers
**MG102A.4** Management Foundations

**Note: Students are advised to enrol in unit 200571 Management Dynamics in place of MG102A Management Foundations.**

**Autumn session**

**300731.2** Soil Engineering
**300027.4** Engineering Computing
**300674.2** Engineering, Design and Construction Practice
**300482.2** Engineering Geology and Concrete Materials

**Year 3**

**Spring session**

**300053.6** Professional Practice
**300730.4** Steel Structures
**300736.4** Concrete Structures (UG)

And one elective

**Autumn session**

**300732.4** Structural Analysis
**300486.2** Infrastructure Engineering

**Note: Students are advised to enrol in unit 300982 Transportation Engineering in place of 300486 Infrastructure Engineering.**

**300766.2** Hydrology

And one elective

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Spring session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Spring and Autumn sessions.**

**300737.6** Environmental Engineering
**300485.3** Foundation Engineering

And one elective

**Autumn session**

**300483.6** Engineering Project
**300739.4** Timber Structures (UG)
**300488.6** Numerical Methods in Engineering

And one elective

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Spring session**

**300675.4** Honours Thesis
**300485.3** Foundation Engineering

And one elective

**From Spring 2020 students are advised to take 301245 Final Year Project 1 and one Alternate Unit from the list below instead of 300675.**

**301245.3** Final Year Project 1 (UG Engineering)

**Autumn session**

**300675.4** Honours Thesis
**300488.6** Numerical Methods in Engineering

And one elective

**From Autumn 2021 students are advised to take 301246 Final Year Project 2 and one Alternate Unit from the list below instead of 300675.**

**301246.4** Final Year Project 2 (UG Engineering)

## Alternate Units

**300986.3** Applied Mechanics
**300987.3** Composite Structures
**300988.3** Highway Infrastructure
**300989.2** Hydrogeology

From 2021 this unit is replaced by

**301397.1** Hydrogeology
**300990.3** Pile Foundations
**300991.3** Statistical Hydrology
**300739.4** Timber Structures (UG)

**300994.3** Waste Management
**300992.3** Water and Wastewater Treatment

From Spring 2022, 300992 Water and Wastewater Treatment is replaced by 301424 Water Supply Systems Design

**301424.1** Water Supply Systems Design
**300993.3** Water Resource Engineering

## Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

## Key Program - Robotics and Mechatronics

### *KT3045.1*

This program provides the skills necessary for the design of smart machines of all types: cruise control in automobiles, pilotless spacecraft, automated factories and medical telerobotics. The course, accompanied by an extensive and integrated hands-on laboratory program, is essentially concerned with the design of intelligent mechanical systems and automation, and includes the study of robotics, computer control, automated manufacturing, microprocessor applications and machine design. Graduates in the program acquire the combined skills of mechanical and computer/electrical engineering that are needed in leading-edge industries such as aerospace systems, the car industry, automation and robotic applications, biomedical engineering, laser systems, and building materials manufacture.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn intake

**Year 2**

**Autumn session**

**300025.5** Electronics
**300035.5** Kinematics and Kinetics of Machines
**300040.4** Mechanics of Materials
**300005.4** Circuit Theory

**Spring session**

**300044.4** Microcontrollers and PLCs
**300480.4** Dynamics of Mechanical Systems
**300735.4** Automated Manufacturing
**300052.5** Power and Machines

**Year 3**

**Autumn session**

**300764.3** Mechanical Design
**300056.6** Robotics

Choose one of

**300763.3** Advanced Dynamics
**300018.4** Digital Systems 1

Or one elective

**Spring session**

**300043.6** Mobile Robotics
**300053.6** Professional Practice
**300487.5** Mechatronic Design

And one elective

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Autumn session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Autumn and Spring sessions.**

**300075.7** Instrumentation and Measurement
**300071.4** Electrical Machines 1

Choose one of

**300763.3** Advanced Dynamics
**300018.4** Digital Systems 1

**Spring session**

**300483.6** Engineering Project

Choose one of

**301095.2** Sustainable Design 1: Materials and Technology
**300304.3** Sustainable Design: Materials Technology

And two electives

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Autumn session**

**300675.4** Honours Thesis
**300071.4** Electrical Machines 1

Choose one of

**300763.3** Advanced Dynamics
**300018.4** Digital Systems 1

**From Autumn 2021 students are advised to take 301245 Final Year Project 1 and one Alternate Unit from the list below instead of 300675.**

**301245.3** Final Year Project 1 (UG Engineering)

**Spring session**

**300675.4** Honours Thesis

And two electives

**Students who complete 301245 in the Spring session from 2020 or Autumn session from 2021 onwards, are advised to select 301246 Final Year Project 2 and one Alternate unit to replace 300675 in their second semester for Honours.**

**301246.4** Final Year Project 2 (UG Engineering)

## Alternate Units

**301122.3** Biomedical Electronics
**301121.4** Biomedical Signals and Data Analysis
**300999.3** Computational Fluid Dynamics
**301000.4** Computer Aided Engineering
**300029.5** Engineering Visualization
**300762.4** Fluid Mechanics
**301287.2** Design Graphics: Engineering Documentation
**301290.2** Design Graphics: Communication for Manufacture
**300361.4** Introduction to Human Biology
**300759.4** Thermal and Fluid Engineering
**300760.4** Thermodynamics and Heat Transfer

## Full-time - Spring Intake

**Year 1**

**Spring session**

**200237.5** Mathematics for Engineers 1
**300463.4** Fundamentals of Mechanics
**300021.4** Electrical Fundamentals
**300462.3** Engineering and Design Concepts

**Autumn session**

**200238.3** Mathematics for Engineers 2
**300464.2** Physics and Materials
**300040.4** Mechanics of Materials
**300005.4** Circuit Theory

**Year 2**

**Spring session**

**300735.4** Automated Manufacturing
**300044.4** Microcontrollers and PLCs
**300052.5** Power and Machines

And one elective

**Autumn session**

**300027.4** Engineering Computing
**300674.2** Engineering, Design and Construction Practice
**300035.5** Kinematics and Kinetics of Machines

And one elective

**Year 3**

**Spring session**

**300053.6** Professional Practice
**300480.4** Dynamics of Mechanical Systems
**300487.5** Mechatronic Design
**300043.6** Mobile Robotics

**Autumn session**

**300025.5** Electronics
**300764.3** Mechanical Design
**300056.6** Robotics

Choose one of

**300763.3** Advanced Dynamics
**300018.4** Digital Systems 1

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Spring session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Spring and Autumn sessions.**

Choose one of

**301095.2** Sustainable Design 1: Materials and Technology
**300304.3** Sustainable Design: Materials Technology

And two electives

**Autumn session**

**300483.6** Engineering Project
**300075.7** Instrumentation and Measurement
**300071.4** Electrical Machines 1

Choose one of

**300763.3** Advanced Dynamics
**300018.4** Digital Systems 1

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Spring session**

**300675.4** Honours Thesis

And two electives

From Spring 2020 students are advised to take 301245 Final Year Project 1 and one Alternate Unit from the list below instead of 300675.

**301245.3** Final Year Project 1 (UG Engineering)

**Autumn session**

**300675.4** Honours Thesis
**300071.4** Electrical Machines 1

Choose one of

**300763.3** Advanced Dynamics
**300018.4** Digital Systems 1

**From Autumn 2021 students are advised to take 301246 Final Year Project 2 and one Alternate Unit from the list below instead of 300675.**

**301246.4** Final Year Project 2 (UG Engineering)

## Alternate Units

**301122.3** Biomedical Electronics
**301121.4** Biomedical Signals and Data Analysis
**300999.3** Computational Fluid Dynamics
**301000.4** Computer Aided Engineering
**300029.5** Engineering Visualization
**300762.4** Fluid Mechanics
**301287.2** Design Graphics: Engineering Documentation
**301290.2** Design Graphics: Communication for Manufacture
**300361.4** Introduction to Human Biology
**300759.4** Thermal and Fluid Engineering
**300760.4** Thermodynamics and Heat Transfer

## Elective Units

**Although students may choose any unit offered by the University as an elective, students are recommended to choose their electives from the following:**

**300761.3** Advanced Mechanics of Materials
**300762.4** Fluid Mechanics
**300760.4** Thermodynamics and Heat Transfer
**300759.4** Thermal and Fluid Engineering

## Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

## Key Program - Computer

### *KT3046.1*

Computer engineering is a specialist area that relates to computers and communication systems that process information and control physical processes and to designing faster computers. Subjects include computer networks, digital systems and communications, microprocessors and embedded micro-controllers. Graduates will work in hardware and software development, in supervisory and data acquisition systems, in industrial applications of computer controlled equipment, in networking and data communications and in developing networking technologies. You will primarily be a problem-solver and organiser, with specialist knowledge of computer hardware, software, communications, computer networking, computer control and real-time computer systems.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn session

**Year 2**

**Autumn session**

**200242.4** Mathematics for Engineers 3

Please Note: Students enrolled in the Bachelor of Engineering (3621), Bachelor of Engineering Science (3664) or Bachelor of Engineering (Advanced)(3666) who are yet to successfully complete 200242 Mathematics for Engineers 3, are to seek advice from Dr Jamal Rizk (Academic Course Advisor for Key Programs in Electrical, Computer and Telecommunications) to enable them to complete the mentioned courses.

**300018.4** Digital Systems 1
**300005.4** Circuit Theory
**300025.5** Electronics

**Spring session**

**300076.5** Microprocessor Systems
**300057.7** Signals and Systems
**300096.7** Computer Organisation
**300052.5** Power and Machines

**Year 3**

**Autumn session**

**300167.5** Systems Programming 1
**300075.7** Instrumentation and Measurement
**300009.5** Control Systems

And one elective

**Spring session**

**300149.3** Operating Systems
**300053.6** Professional Practice
**300069.6** Digital Signal Processing

And one elective

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Autumn session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Autumn and Spring sessions.**

**300095.6** Computer Networks and Internets
**300010.3** Data Networks

Choose one of

**300019.6** Digital Systems 2
**300029.5** Engineering Visualization

Please note: Even years students choose 300019 Digital Systems 2. Odd years students choose 300029 Engineering Visualization.

**Spring session**

**300483.6** Engineering Project

Choose one of

**300370.2** Digital Control Systems
**300044.4** Microcontrollers and PLCs

Please note: Even years students choose 300370 Digital Control Systems. Odd years students choose 300044 - Microcontrollers and PLCs.

And two electives

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream - H3022)**

**Autumn session**

**300675.4** Honours Thesis
**300095.6** Computer Networks and Internets
**300010.3** Data Networks

**Spring session**

**300675.4** Honours Thesis

And two electives

## Full-time - Spring intake

**Year 1**

**Spring session**

**200237.5** Mathematics for Engineers 1
**300463.4** Fundamentals of Mechanics
**300021.4** Electrical Fundamentals
**300462.3** Engineering and Design Concepts

**Autumn session**

**200238.3** Mathematics for Engineers 2
**300464.2** Physics and Materials
**300027.4** Engineering Computing
**300005.4** Circuit Theory

**Year 2**

**Spring session**

**200242.4** Mathematics for Engineers 3
**300057.7** Signals and Systems
**300096.7** Computer Organisation
**300052.5** Power and Machines

**Autumn session**

**300167.5** Systems Programming 1
**300018.4** Digital Systems 1
**300674.2** Engineering, Design and Construction Practice
**300025.5** Electronics

**Year 3**

**Spring session**

**300069.6** Digital Signal Processing
**300053.6** Professional Practice
**300149.3** Operating Systems
**300076.5** Microprocessor Systems

**Autumn session**

**300075.7** Instrumentation and Measurement
**300009.5** Control Systems

And two electives

**Industrial Experience:**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Spring session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Spring and Autumn sessions.**

And choose one of

**300370.2** Digital Control Systems
**300044.4** Microcontrollers and PLCs

Please note: Even years students choose 300370 Digital Control Systems. Odd years students choose 300044 Microcontrollers and PLCs.

And two electives

**Autumn session**

**300483.6** Engineering Project
**300095.6** Computer Networks and Internets
**300010.3** Data Networks

Choose one of

**300019.6** Digital Systems 2
**300029.5** Engineering Visualization

Please note: Even years students choose 300019 Digital Systems 2. Odd years students choose 300029 Engineering Visualization.

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream - H3022)**

**Spring session**

**300675.4** Honours Thesis

And two electives

**Autumn session**

**300675.4** Honours Thesis
**300095.6** Computer Networks and Internets
**300010.3** Data Networks

## Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

## Key Program - Environmental

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### *KT3089.1*

This program provides an essential grounding in ecology, civil engineering and environmental management. Environmental engineers are concerned with ensuring a sustainable and better future for the community by developing and managing systems that integrate with and protect our environment. Graduates will work as environmental engineers in private, industrial, and mining companies; government departments; and city, municipal and shire councils.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn intake

**Year 2**

**Autumn session**

**300731.2** Soil Engineering
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics
**300469.2** Introductory Chemistry

**Spring session**

**300733.4** Introduction to Structural Engineering
**300738.5** Surveying for Engineers
**300663.2** Resource Sustainability
**300765.4** Hydraulics

**Year 3**

**Autumn session**

**300777.2** Air Quality and Climate Change
**300482.2** Engineering Geology and Concrete Materials
**300766.2** Hydrology
**300486.2** Infrastructure Engineering

**Note: Students are advised to enrol in unit 300982 Transportation Engineering in place of 300486 Infrastructure Engineering.**

**Spring session**

**300737.6** Environmental Engineering
**300053.6** Professional Practice

And two electives

Note: one of the Year 3 Electives must be at least a Level 3 unit.

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Autumn session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Autumn and Spring sessions.**

**300633.1** Management of Aquatic Environments
**300284.4** Environmental Risk Management
**300488.6** Numerical Methods in Engineering

**Spring session**

**300483.6** Engineering Project
**MG102A.4** Management Foundations

**Note: Students are advised to enrol in unit 200571 Management Dynamics in place of MG102A Management Foundations.**

And two electives

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream - H3003)**

**Autumn session**

**300675.4** Honours Thesis
**300633.1** Management of Aquatic Environments

And one elective

**Spring session**

**300675.4** Honours Thesis
**MG102A.4** Management Foundations

**Note: Students are advised to enrol in unit 200571 Management Dynamics in place of MG102A Management Foundations.**

And one elective

## Full-time - Spring Intake

**Year 1**

**Spring session**

**200237.5** Mathematics for Engineers 1
**300463.4** Fundamentals of Mechanics
**300021.4** Electrical Fundamentals
**300462.3** Engineering and Design Concepts

**Autumn session**

**200238.3** Mathematics for Engineers 2
**300464.2** Physics and Materials
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics

**Year 2**

**Spring session**

**300733.4** Introduction to Structural Engineering
**300738.5** Surveying for Engineers
**300663.2** Resource Sustainability
**300765.4** Hydraulics

**Autumn session**

**300731.2** Soil Engineering
**300027.4** Engineering Computing
**300674.2** Engineering, Design and Construction Practice
**300469.2** Introductory Chemistry

**Year 3**

**Spring session**

**300737.6** Environmental Engineering
**300053.6** Professional Practice

And two electives

Note: one of the Year 3 Electives must be at least a Level 3 unit.

**Autumn session**

**300777.2** Air Quality and Climate Change
**300482.2** Engineering Geology and Concrete Materials
**300766.2** Hydrology
**300486.2** Infrastructure Engineering

**Note: Students are advised to enrol in unit 300982 Transportation Engineering in place of 300486 Infrastructure Engineering.**

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Spring session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Spring and Autumn sessions.**

**MG102A.4** Management Foundations

**Note: Students are advised to enrol in unit 200571 Management Dynamics in place of MG102A Management Foundations.**

And two electives

**Autumn session**

**300483.6** Engineering Project
**300633.1** Management of Aquatic Environments
**300284.4** Environmental Risk Management
**300488.6** Numerical Methods in Engineering

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream - H3003)**

**300675.4** Honours Thesis
**MG102A.4** Management Foundations

**Note: Students are advised to enrol in unit 200571 Management Dynamics in place of MG102A Management Foundations.**

And one elective

**Autumn session**

**300675.4** Honours Thesis
**300633.1** Management of Aquatic Environments

And one elective

## Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

## Key Program - Electrical

### *KT3102.1*

This program includes core subjects from all branches of electrical engineering. Graduates will work in the fields of electronic components, computers, electro-magnetics, power generation and distribution systems, power and control in public utilities, telecommunications, manufacturing, and electrical systems.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

**Full-time - Autumn intake**

**Year 2**

**Autumn session**

**200242.4** Mathematics for Engineers 3

Please Note: Students enrolled in the Bachelor of Engineering (3621), Bachelor of Engineering Science (3664) or Bachelor of Engineering (Advanced)(3666) who are yet to successfully complete 200242 Mathematics for Engineers 3, are to seek advice from Dr Jamal Rizk (Academic Course Advisor for Key Programs in Electrical, Computer and Telecommunications) to enable them to complete the mentioned courses.

**300018.4** Digital Systems 1
**300005.4** Circuit Theory
**300025.5** Electronics

**Spring session**

**300076.5** Microprocessor Systems
**300057.7** Signals and Systems
**300481.4** Engineering Electromagnetics
**300052.5** Power and Machines

**Year 3**

**Autumn session**

**300007.4** Communication Systems
**300071.4** Electrical Machines 1
**300009.5** Control Systems

And one elective

**Spring session**

**300771.3** Power Systems
**300053.6** Professional Practice
**300069.6** Digital Signal Processing

And one elective

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-honours stream)**

**Autumn session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Autumn and Spring sessions.**

**300075.7** Instrumentation and Measurement
**300010.3** Data Networks
**300772.3** Power Electronics

**Spring session**

**300483.6** Engineering Project
**300070.6** Electrical Drives

And two electives

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Autumn session**

**300675.4** Honours Thesis
**300772.3** Power Electronics

And one elective

**From Autumn 2021 students are advised to take 301245 Final Year Project 1 and one Alternate Unit from the list below instead of 300675.**

**301245.3** Final Year Project 1 (UG Engineering)

**Spring session**

**300675.4** Honours Thesis
**300070.6** Electrical Drives

And one elective

**Students who complete 301245 in the Spring session from 2020 or Autumn session from 2021 onwards, are advised to select 301246 Final Year Project 2 and one Alternate unit to replace 300675 in their second semester for Honours.**

**301246.4** Final Year Project 2 (UG Engineering)

## Alternate Units

**401140.3** Biomechanics
**301122.3** Biomedical Electronics
**301121.4** Biomedical Signals and Data Analysis
**300997.3** Data Communications
**300019.6** Digital Systems 2
**300029.5** Engineering Visualization
**300361.4** Introduction to Human Biology
**300995.3** Power Quality
**300489.4** Radio and Satellite Communication
**300996.3** Smart Grids and Distributed Generation
**300998.3** Sustainable Energy Systems
**300065.7** Wireless Communications

## Full-time - Spring intake

**Year 1**

**Spring intake**

**200237.5** Mathematics for Engineers 1
**300463.4** Fundamentals of Mechanics
**300021.4** Electrical Fundamentals
**300462.3** Engineering and Design Concepts

**Autumn session**

**200238.3** Mathematics for Engineers 2
**300464.2** Physics and Materials
**300027.4** Engineering Computing
**300005.4** Circuit Theory

**Year 2**

**Spring session**

**200242.4** Mathematics for Engineers 3
**300057.7** Signals and Systems
**300481.4** Engineering Electromagnetics
**300052.5** Power and Machines

**Autumn session**

**300071.4** Electrical Machines 1
**300018.4** Digital Systems 1
**300674.2** Engineering, Design and Construction Practice
**300025.5** Electronics

**Year 3**

**Spring session**

**300053.6** Professional Practice
**300771.3** Power Systems
**300069.6** Digital Signal Processing
**300076.5** Microprocessor Systems

**Autumn session**

**300007.4** Communication Systems
**300009.5** Control Systems

And two electives

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Spring session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Spring and Autumn sessions.**

**300070.6** Electrical Drives

And two electives

**Autumn session**

**300483.6** Engineering Project
**300010.3** Data Networks
**300772.3** Power Electronics
**300075.7** Instrumentation and Measurement

**Honours Stream**

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Spring session**

**300675.4** Honours Thesis
**300070.6** Electrical Drives

And one elective

**From Spring 2020 students are advised to take 301245 Final Year Project 1 and one Alternate Unit from the list below instead of 300675.**

**301245.3** Final Year Project 1 (UG Engineering)

**Autumn session**

**300675.4** Honours Thesis
**300772.3** Power Electronics

And one elective

**From Autumn 2021 students are advised to take 301246 Final Year Project 2 and one Alternate Unit from the list below instead of 300675.**

**301246.4** Final Year Project 2 (UG Engineering)

## Alternate Units

**401140.3** Biomechanics
**301122.3** Biomedical Electronics
**301121.4** Biomedical Signals and Data Analysis
**300997.3** Data Communications
**300019.6** Digital Systems 2
**300029.5** Engineering Visualization
**300361.4** Introduction to Human Biology
**300995.3** Power Quality
**300489.4** Radio and Satellite Communication
**300996.3** Smart Grids and Distributed Generation
**300998.3** Sustainable Energy Systems
**300065.7** Wireless Communications

## Key Program - Telecommunications

### *KT3103.1*

This program emphasises the hardware issues related to telecommunications, including digital systems, antenna design, communication hardware, data transfer and management and signal processing. Graduates will work in a variety of situations, such as communications in offices, communications between machines, and intercontinental communication issues. There is a high demand for telecommunications engineers as providers struggle to meet the rapid increase demand for both personal and business use of different modes of communications, including the mobile telephone and Internet.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

**Full-time - Autumn intake**

**Year 2**

**Autumn session**

**200242.4** Mathematics for Engineers 3

Please Note: Students enrolled in the Bachelor of Engineering (3621), Bachelor of Engineering Science (3664) or Bachelor of Engineering (Advanced)(3666) who are yet to successfully complete 200242 Mathematics for Engineers 3, are to seek advice from Dr Jamal Rizk (Academic Course Advisor for Key Programs in Electrical, Computer and Telecommunications) to enable them to complete the mentioned courses.

**300018.4** Digital Systems 1
**300005.4** Circuit Theory
**300025.5** Electronics

**Spring session**

**300076.5** Microprocessor Systems
**300057.7** Signals and Systems
**300481.4** Engineering Electromagnetics
**300052.5** Power and Machines

**Year 3**

**Autumn session**

**300007.4** Communication Systems
**300029.5** Engineering Visualization

Choose one of

**300075.7** Instrumentation and Measurement
**300009.5** Control Systems

And one elective

**Spring session**

**300053.6** Professional Practice
**300069.6** Digital Signal Processing

Choose one of

**300065.7** Wireless Communications
**300887.1** Digital Communication and Coding

And one elective (unit must be a Level 3 unit)

**Industrial Experience:**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-honours stream)**

**Autumn session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Autumn and Spring sessions.**

**300010.3** Data Networks

Choose one of

**300019.6** Digital Systems 2
**300046.2** Multimedia Signal Processing

And one elective

**Spring session**

**300483.6** Engineering Project

Choose one of

**300068.3** Communication Electronics
**300489.4** Radio and Satellite Communication

Choose one of

**300887.1** Digital Communication and Coding
**300065.7** Wireless Communications

And one elective

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream - H3003)**

**Autumn session**

**300675.4** Honours Thesis
**300010.3** Data Networks

And one elective

**Spring session**

**300675.4** Honours Thesis

Choose one of

**300887.1** Digital Communication and Coding
**300065.7** Wireless Communications

And one elective

## Full-time - Spring intake

**Year 1**

**Spring intake**

**200237.5** Mathematics for Engineers 1
**300463.4** Fundamentals of Mechanics
**300021.4** Electrical Fundamentals
**300462.3** Engineering and Design Concepts

**Autumn session**

**200238.3** Mathematics for Engineers 2
**300464.2** Physics and Materials
**300027.4** Engineering Computing
**300005.4** Circuit Theory

**Year 2**

**Spring session**

**200242.4** Mathematics for Engineers 3
**300057.7** Signals and Systems
**300481.4** Engineering Electromagnetics
**300052.5** Power and Machines

**Autumn session**

**300007.4** Communication Systems
**300018.4** Digital Systems 1
**300674.2** Engineering, Design and Construction Practice
**300025.5** Electronics

**Year 3**

**Spring session**

**300076.5** Microprocessor Systems
**300053.6** Professional Practice
**300069.6** Digital Signal Processing

Choose one of

**300065.7** Wireless Communications
**300887.1** Digital Communication and Coding

**Autumn session**

**300029.5** Engineering Visualization

Choose one of

**300009.5** Control Systems
**300075.7** Instrumentation and Measurement

And two electives
One elective in Year 3 must be at least a Level 3 unit

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Spring session**

**300483.6** Engineering Project

**Please note: Students must enrol in 300483 Engineering Project in both Spring and Autumn sessions.**
And choose one of

**300068.3** Communication Electronics
**300489.4** Radio and Satellite Communication

Choose one of

**300887.1** Digital Communication and Coding
**300065.7** Wireless Communications

And one elective

**Autumn session**

**300483.6** Engineering Project
**300010.3** Data Networks

Choose one of

**300019.6** Digital Systems 2
**300046.2** Multimedia Signal Processing

And one elective

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

**Year 4 (Honours stream - H3003)**

**Spring session**

**300675.4** Honours Thesis

And choose one of

**300887.1** Digital Communication and Coding
**300065.7** Wireless Communications

And one elective

**Autumn session**

**300675.4** Honours Thesis
**300010.3** Data Networks

And one elective

## Key Program - Civil

### *KT3113.1*

Civil engineering covers the fields of structural design, geotechnical engineering and water engineering, together with infrastructure design and environmental engineering. Graduates will work in the fields of design, construction and management of engineering structures. Projects may cover residential and commercial buildings, highways and airports, water supply and sewerage schemes, etc. You may be an engineer in private industry, government departments, or in city, municipal or shire councils.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics
**300985.4** Soil Mechanics

**Spring session**

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**300737.6** Environmental Engineering
**300765.4** Hydraulics

**Year 3**

**Autumn session**

**300732.4** Structural Analysis
**300983.3** Surface Water Hydrology

From 2021 this unit is replaced by

**301329.2** Surface Water Hydrology
**300736.4** Concrete Structures (UG)

And one Alternate unit

**Spring session**

**300730.4** Steel Structures
**301001.3** Engineering Geomechanics
**300971.3** Engineering Project 1

And one Alternate unit

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Autumn session**

**300972.3** Engineering Project 2

And two electives

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

And one Alternate unit

**Spring session**

**300982.4** Transportation Engineering
**300488.6** Numerical Methods in Engineering

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

And one Alternate unit

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated Guidelines for the admission criteria.

**Year 4 (Honours stream - H3003)**

**Autumn session**

**300972.3** Engineering Project 2
**300973.3** Engineering Thesis 1: Preliminary Investigations

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

**301245.3** Final Year Project 1 (UG Engineering)

And one elective

And one Alternate unit

**Spring session**

**300982.4** Transportation Engineering
**300488.6** Numerical Methods in Engineering
**300974.3** Engineering Thesis 2: Detailed Investigations

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

**301246.4** Final Year Project 2 (UG Engineering)

And one Alternate unit

## Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

**300986.3** Applied Mechanics
**300987.3** Composite Structures
**300988.3** Highway Infrastructure
**300989.2** Hydrogeology

From 2021 this unit is replaced by

**301397.2** Hydrogeology
**300990.3** Pile Foundations
**300991.3** Statistical Hydrology
**300798.4** Sustainability and Risk Engineering
**300739.4** Timber Structures (UG)
**300994.3** Waste Management
**300992.3** Water and Wastewater Treatment

From Spring 2022, 300992 Water and Wastewater Treatment is replaced by 301424 Water Supply Systems Design

**301424.1** Water Supply Systems Design
**300993.3** Water Resource Engineering

## Specialisation Sub-majors

**SM3065.1** Structures
**SM3066.1** Geotechnical
**SM3067.1** Water and Environment

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

## Key Program - Construction

### *KT3114.1*

The Construction Key Program consists of core subjects in structural engineering, project management and construction technologies. Graduates will work in the fields of construction, structural design, and project management. Career opportunities include those in the private or public sector on projects covering highways, airports, and residential & commercial buildings.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials
**200486.3** Quantity Surveying 1
**300985.4** Soil Mechanics

**Spring session**

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**200468.2** Estimating 1
**300707.2** Building 2

**Year 3**

**Autumn session**

**300732.4** Structural Analysis
**300728.5** Construction Planning
**300736.4** Concrete Structures (UG)

And one Alternate unit

**Spring session**

**300730.4** Steel Structures
**300727.4** Project Management
**300971.3** Engineering Project 1

And one Alternate unit

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Autumn session**

**300972.3** Engineering Project 2
**300798.4** Sustainability and Risk Engineering

And one Alternate unit

And one elective unit

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring session**

**301001.3** Engineering Geomechanics

And one Alternate unit

And two elective units

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Autumn session**

**300972.3** Engineering Project 2
**300798.4** Sustainability and Risk Engineering
**300973.3** Engineering Thesis 1: Preliminary Investigations

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

**301245.3** Final Year Project 1 (UG Engineering)

And one Alternate unit

**Spring session**

**301001.3** Engineering Geomechanics
**300974.3** Engineering Thesis 2: Detailed Investigations

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

**301246.4** Final Year Project 2 (UG Engineering)

And one Alternate unit

And one elective unit

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

## Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

**300986.3** Applied Mechanics
**300987.3** Composite Structures
**300988.3** Highway Infrastructure
**300990.3** Pile Foundations
**300739.4** Timber Structures (UG)

**For Construction Economics**

**200503.4** Construction Information Systems
**300726.4** Estimating 2
**200487.5** Quantity Surveying 2
**300748.4** Quality and Value Management

## Specialisation Sub-majors

**SM3065.1** Structures
**SM3068.1** Construction Economics

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

## Key Program - Electrical

### *KT3115.1*

This program includes core subjects from all branches of electrical engineering. Graduates will work in the fields of electronic components, computers, electro-magnetics, power generation and distribution systems, power and control systems in public utilities, telecommunications, manufacturing, and electrical systems.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

**300005.4** Circuit Theory
**300025.5** Electronics
**300057.7** Signals and Systems
**300018.4** Digital Systems 1

**Spring session**

**300076.5** Microprocessor Systems
**300481.4** Engineering Electromagnetics
**300052.5** Power and Machines
**300009.5** Control Systems

**Year 3**

**Autumn session**

**300007.4** Communication Systems
**300071.4** Electrical Machines 1

And one Alternate unit

And one elective unit*

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring session**

**300771.3** Power Systems
**300069.6** Digital Signal Processing
**300971.3** Engineering Project 1

And one Alternate unit

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Autumn session**

**300972.3** Engineering Project 2
**300772.3** Power Electronics

And one Alternate unit

And one elective unit

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring session**

**300075.7** Instrumentation and Measurement
**300070.6** Electrical Drives

And one Alternate unit

And one elective unit

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Autumn session**

**300972.3** Engineering Project 2
**300772.3** Power Electronics
**300973.3** Engineering Thesis 1: Preliminary Investigations

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

**301245.3** Final Year Project 1 (UG Engineering)

And one Alternate unit

**Spring session**

**300075.7** Instrumentation and Measurement
**300070.6** Electrical Drives
**300974.3** Engineering Thesis 2: Detailed Investigations

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

**301246.4** Final Year Project 2 (UG Engineering)

And one Alternate unit

## Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

| | |
|---|---|
| **401140.3** | Biomechanics |
| **301122.3** | Biomedical Electronics |
| **301121.4** | Biomedical Signals and Data Analysis |
| **300997.3** | Data Communications |
| **300019.6** | Digital Systems 2 |
| **300029.5** | Engineering Visualization |
| **300361.4** | Introduction to Human Biology |
| **300995.3** | Power Quality |
| **300489.4** | Radio and Satellite Communication |
| **300996.3** | Smart Grids and Distributed Generation |
| **300998.3** | Sustainable Energy Systems |
| **300065.7** | Wireless Communications |

## Specialisation Sub-majors

| | |
|---|---|
| **SM3069.1** | Telecommunications |
| **SM3070.1** | Power Engineering |
| **SM3091.1** | Biomedical Engineering |

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

| | |
|---|---|
| **301089.3** | Special Technical Project |

## Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

## Key Program - Mechanical

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### *KT3116.1*

In addition to providing training in conventional mechanical engineering subjects, the course structure introduces students to units of study that address sustainability including sustainable design and sustainable energy engineering. Graduates will be well equipped with broad-based skills that meet the demand of Australian industries and are conscious of the need to promote sustainable design and practices. Examples include mechanical and machinery design; manufacturing; energy production; and marketing and management activities. Skills gained are required in industries such as manufacturing, materials handling, automobile, aerospace, mining, building services and infrastructure development.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

| | |
|---|---|
| **300035.5** | Kinematics and Kinetics of Machines |
| **300040.4** | Mechanics of Materials |
| **300762.4** | Fluid Mechanics |

Choose one of

| | |
|---|---|
| **301079.3** | Graphics 3: 3D Engineering Specifications and Visualisation |
| **300282.2** | Industrial Graphics 2: Transition |

**Spring session**

| | |
|---|---|
| **300480.4** | Dynamics of Mechanical Systems |
| **300735.4** | Automated Manufacturing |
| **300760.4** | Thermodynamics and Heat Transfer |
| **300761.3** | Advanced Mechanics of Materials |

**Year 3**

**Autumn session**

| | |
|---|---|
| **300764.3** | Mechanical Design |
| **300763.3** | Advanced Dynamics |

And one Alternate unit

And one elective unit*

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring session**

| | |
|---|---|
| **300759.4** | Thermal and Fluid Engineering |
| **300488.6** | Numerical Methods in Engineering |
| **300971.3** | Engineering Project 1 |

And one Alternate unit

**Industrial Experience**

| | |
|---|---|
| **300741.4** | Industrial Experience (Engineering) |

**Year 4 (Non-Honours stream)**

**Autumn session**

| | |
|---|---|
| **300972.3** | Engineering Project 2 |
| **300056.6** | Robotics |

And one Alternate unit

And one elective unit

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring session**

**301000.4** Computer Aided Engineering
**300487.5** Mechatronic Design

And one Alternate unit

And one elective unit

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Autumn session**

**300972.3** Engineering Project 2
**300056.6** Robotics
**300973.3** Engineering Thesis 1: Preliminary Investigations

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

**301245.3** Final Year Project 1 (UG Engineering)

And one Alternate unit

**Spring session**

**301000.4** Computer Aided Engineering
**300487.5** Mechatronic Design
**300974.3** Engineering Thesis 2: Detailed Investigations

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

**301246.4** Final Year Project 2 (UG Engineering)

And one Alternate Unit

## Alternate Units

Alternate units may be used to complete one of the Specialisation Sub-majors listed below.

Please click on the link next each Sub-major below to view the units required.

**401140.3** Biomechanics
**301122.3** Biomedical Electronics
**301121.4** Biomedical Signals and Data Analysis
**300999.3** Computational Fluid Dynamics
**300570.4** Human-Computer Interaction
**300361.4** Introduction to Human Biology
**300044.4** Microcontrollers and PLCs
**300043.6** Mobile Robotics

Students may choose only one of

**301076.3** Graphics 2: Visual Simulation
**300310.3** Industrial Graphics 3: 3D Solids

Students may choose only one of

**301091.3** Graphics 4: Kinetic Narratives
**300312.3** Industrial Graphics 4: Surface

Students may choose only one of

**301081.3** Sustainable Design 2: Product Service Systems
**300306.4** Sustainable Design: Sustainable Futures

## Specialisation Sub-majors

**SM3072.1** Automation
**SM3071.1** Computer Aided Design (Mechanical)
**SM3091.1** Biomedical Engineering

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

## Key Program - Robotics and Mechatronics

### *KT3117.1*

This program provides the skills necessary for the design of smart machines of all types: cruise control in automobiles, pilotless spacecraft, automated factories and medical telerobotics. The course, accompanied by an extensive and integrated hands-on laboratory program, is essentially concerned with the design of intelligent mechanical systems and automation, and includes the study of robotics, computer control, automated manufacturing, microprocessor applications and machine design. Graduates in the program acquire the combined skills of mechanical and computer/electrical engineering that are needed in leading-edge industries such as aerospace systems, the car industry, automation and robotic applications, biomedical engineering, laser systems, and building materials manufacture.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

**300035.5** Kinematics and Kinetics of Machines
**300040.4** Mechanics of Materials
**300005.4** Circuit Theory
**300018.4** Digital Systems 1

**Spring session**

**300480.4** Dynamics of Mechanical Systems
**300735.4** Automated Manufacturing
**300052.5** Power and Machines
**300044.4** Microcontrollers and PLCs

**Year 3**

**Autumn session**

**300764.3** Mechanical Design
**300763.3** Advanced Dynamics
**300025.5** Electronics

And one Alternate Unit

**Spring session**

**300043.6** Mobile Robotics
**300971.3** Engineering Project 1

And one Alternate Unit

And one elective

* Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4 (Non-Honours stream)**

**Autumn session**

**300972.3** Engineering Project 2
**300056.6** Robotics

And one Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring session**

**300075.7** Instrumentation and Measurement
**300487.5** Mechatronic Design

And one Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

## Honours Stream

An Honours stream is offered - see the Honours in Bachelors Awards Policy and associated Guidelines for the admission criteria.

**Year 4 (Honours stream)**

**Autumn session**

**300972.3** Engineering Project 2
**300056.6** Robotics
**300973.3** Engineering Thesis 1: Preliminary Investigations

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

**301245.3** Final Year Project 1 (UG Engineering)

And one Alternate Unit

**Spring session**

**300075.7** Instrumentation and Measurement
**300487.5** Mechatronic Design
**300974.3** Engineering Thesis 2: Detailed Investigations

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

**301246.4** Final Year Project 2 (UG Engineering)

And one Alternate Unit

## Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

Please click on the link next each Sub-major below to view the units required.

**401140.3** Biomechanics
**301122.3** Biomedical Electronics
**301121.4** Biomedical Signals and Data Analysis
**300999.3** Computational Fluid Dynamics
**301000.4** Computer Aided Engineering
**300029.5** Engineering Visualization
**300762.4** Fluid Mechanics
**300361.4** Introduction to Human Biology
**300759.4** Thermal and Fluid Engineering
**300760.4** Thermodynamics and Heat Transfer

Students may choose only one of

**301079.3** Graphics 3: 3D Engineering Specifications and Visualisation
**300282.2** Industrial Graphics 2: Transition

Students may choose only one of

**301076.3** Graphics 2: Visual Simulation
**300310.3** Industrial Graphics 3: 3D Solids

## Specialisation Sub-majors

| | |
|---|---|
| **SM3073.1** | Computer Aided Design (Mechatronics) |
| **SM3074.1** | Thermal and Fluid Systems |
| **SM3091.1** | Biomedical Engineering |

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Sub-major elective spaces

Elective units may be used toward obtaining an additional approved Sub-major (40 credit points).

Western Sydney University offers sub-majors in a range of areas including Sustainability and Indigenous Studies.

Students can apply for an elective major or sub-major via MySR.

## Key Program - Civil

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## *KT3118.1*

Civil engineering covers the fields of structural design, geotechnical engineering and water engineering, together with infrastructure design and environmental engineering. Graduates will work in the fields of design, construction and management of engineering structures. Projects may cover residential and commercial buildings, highways and airports, water supply and sewerage schemes, etc. You may be an engineer in private industry, government departments, or in city, municipal or shire councils.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

### Year 2

#### Autumn session

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics
**300985.4** Soil Mechanics

#### Spring session

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**300737.6** Environmental Engineering
**300765.4** Hydraulics

Students may transfer to 3740 Bachelor of Engineering (Honours) or 3691 Bachelor of Engineering Science at the end of Year 2 of study.

### Year 3

#### Autumn session

**300732.4** Structural Analysis
**301329.2** Surface Water Hydrology
**300736.4** Concrete Structures (UG)
**300666.4** Advanced Engineering Topic 1

#### Spring session

**300730.4** Steel Structures
**301001.3** Engineering Geomechanics
**300667.4** Advanced Engineering Topic 2
**300488.6** Numerical Methods in Engineering

#### Industrial Experience

**300741.4** Industrial Experience (Engineering)

### Year 4

#### Autumn session

**300969.3** Advanced Engineering Thesis 1: Preliminary Investigations

And two alternate units

And one elective unit

* Elective units must be Level 2 or higher

#### Spring session

**300982.4** Transportation Engineering
**300970.4** Advanced Engineering Thesis 2: Detailed Investigations

And two alternate units

## Alternate Units

**300986.3** Applied Mechanics
**300987.3** Composite Structures
**300988.3** Highway Infrastructure
**301397.2** Hydrogeology
**300990.3** Pile Foundations
**300991.3** Statistical Hydrology
**300798.4** Sustainability and Risk Engineering
**300739.4** Timber Structures (UG)
**300994.3** Waste Management
**300992.3** Water and Wastewater Treatment

From Spring 2022, 300992 Water and Wastewater Treatment is replaced by 301424 Water Supply Systems Design

**301424.1** Water Supply Systems Design
**300993.3** Water Resource Engineering

## Optional Electives

**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Replaced Units

**Please note; The units listed below count towards completion of the Key Program for students who may have passed these units in 2020 or earlier.**

300971 Engineering Project 1

300972 Engineering Project 2

300983 Surface Water Hydrology

300989 Hydrogeology (Alternate unit)

## Key Program - Electrical

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## *KT3120.1*

This program includes core subjects from all branches of electrical engineering. Graduates will work in the fields of electronic components, computers, electro-magnetics, power generation and distribution systems, power and control in public utilities, telecommunications, manufacturing, and electrical systems.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

**300005.4** Circuit Theory
**300025.5** Electronics
**300057.7** Signals and Systems
**300018.4** Digital Systems 1

**Spring session**

**300076.5** Microprocessor Systems
**300481.4** Engineering Electromagnetics
**300052.5** Power and Machines
**300009.5** Control Systems

Students may transfer to 3740 Bachelor of Engineering (Honours) or 3691 Bachelor of Engineering Science at the end of Year 2 of study.

**Year 3**

**Autumn session**

**300007.4** Communication Systems
**300071.4** Electrical Machines 1
**300666.4** Advanced Engineering Topic 1

And one elective unit*

*Elective units must be level 2 or higher

**Spring session**

**300771.3** Power Systems
**300069.6** Digital Signal Processing
**300667.4** Advanced Engineering Topic 2
**300070.6** Electrical Drives

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4**

**Autumn session**

**300772.3** Power Electronics
**300969.3** Advanced Engineering Thesis 1: Preliminary Investigations

And two alternate units

**Spring session**

**300075.7** Instrumentation and Measurement
**300970.4** Advanced Engineering Thesis 2: Detailed Investigations

And two alternate units

## Alternate Units

**300997.3** Data Communications
**300019.6** Digital Systems 2
**300029.5** Engineering Visualization
**300995.3** Power Quality
**300489.4** Radio and Satellite Communication
**300996.3** Smart Grids and Distributed Generation
**300998.3** Sustainable Energy Systems
**300065.7** Wireless Communications

## Optional Electives

**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Replaced Units

**Please note; The units listed below count towards completion of the Key Program for students who may have passed these units in 2020 or earlier.**

300971 Engineering Project 1

300972 Engineering Project 2

## Key Program - Civil

### *KT3123.1*

Civil engineering covers the fields of structural design, geotechnical engineering and water engineering, together with infrastructure design and environmental engineering. Graduates will work in the fields of design, construction and management of engineering structures. Projects may cover residential and commercial buildings, highways and airports, water supply and sewerage schemes, etc. You may be an engineer in private industry, government departments, or in city, municipal or shire councils.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |
| Sydney City Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics
**300985.4** Soil Mechanics

**Spring session**

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**300737.6** Environmental Engineering
**300765.4** Hydraulics

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 3**

**Autumn session**

**300732.4** Structural Analysis
**300736.4** Concrete Structures (UG)
**300967.3** Engineering Science Project 1
**301329.2** Surface Water Hydrology

**Spring session**

**300730.4** Steel Structures
**300968.3** Engineering Science Project 2

And two elective units
*Elective units must be Level 2 or higher

Note: the following unit will no longer be on offer in this specialisation from Autumn 2019. Students should now enrol in 301329 Surface Water Hydrology in Year 3 Autumn.
300982 - Transportation Engineering

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

**Replaced Units**

The units listed below count towards completion of this specialisation for students who passed these units in 2019 or earlier.
300983 - Surface Water Hydrology

## Key Program - Electrical

### *KT3125.1*

This program includes core subjects from all branches of electrical engineering. Graduates will work in the fields of electronic components, computers, electro-magnetics, power generation and distribution systems, power and control in public utilities, telecommunications, manufacturing, and electrical systems.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |
| Sydney City Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

**300005.4** Circuit Theory
**300025.5** Electronics
**300057.7** Signals and Systems
**300018.4** Digital Systems 1

**Spring session**

**300076.5** Microprocessor Systems
**300481.4** Engineering Electromagnetics
**300052.5** Power and Machines
**300009.5** Control Systems

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 3**

**Autumn session**

**300007.4** Communication Systems
**300071.4** Electrical Machines 1
**300967.3** Engineering Science Project 1

And one elective unit

*Elective units must be level 2 or higher

**Spring session**

**300771.3** Power Systems
**300069.6** Digital Signal Processing
**300968.3** Engineering Science Project 2

And one elective unit

*Elective units must be level 2 or higher

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Key Program - Robotics and Mechatronics

### *KT3127.1*

This program provides the skills necessary for the design of smart machines of all types: cruise control in automobiles, pilotless spacecraft, automated factories and medical telerobotics. The course, accompanied by an extensive and integrated hands-on laboratory program, is essentially concerned with the design of intelligent mechanical systems and automation, and includes the study of robotics, computer control, automated manufacturing, microprocessor applications and machine design. Graduates in the program acquire the combined skills of mechanical and computer/electrical engineering that are needed in leading-edge industries such as aerospace systems, the car industry, automation and robotic applications, biomedical engineering, laser systems, and building materials manufacture.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

**300035.5** Kinematics and Kinetics of Machines
**300040.4** Mechanics of Materials
**300005.4** Circuit Theory
**300018.4** Digital Systems 1

**Spring session**

**300480.4** Dynamics of Mechanical Systems
**300735.4** Automated Manufacturing
**300052.5** Power and Machines
**300044.4** Microcontrollers and PLCs

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 3**

**Autumn session**

**300764.3** Mechanical Design
**300763.3** Advanced Dynamics
**300056.6** Robotics
**300967.3** Engineering Science Project 1

**Spring session**

**300043.6** Mobile Robotics
**300968.3** Engineering Science Project 2

And two elective units

* Elective units must be level 2 or higher

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Key Program - Civil

### *KT3135.1*

Civil engineering covers the fields of structural design, geotechnical engineering and water engineering, together with infrastructure design and environmental engineering. Graduates will work in the fields of design, construction and management of engineering structures. Projects may cover residential and commercial buildings, highways and airports, water supply and sewerage schemes, etc. You may be an engineer in private industry, government departments, or in city, municipal or shire councils.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |
| Sydney City Campus | Internal |

## Specialisation Structure

Bachelor of Engineering (Honours) programs have a common first year structure.

Students choose their key program at the end of first year. Civil engineering students will undertake the units listed below.

## Full-time Autumn Intake

### Year 2

#### Autumn session

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics
**300985.4** Soil Mechanics

#### Spring session

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**300737.6** Environmental Engineering
**300765.4** Hydraulics

Students may transfer to 3691 Bachelor of Engineering Science at the end of Year 2 of study.

### Year 3

#### Autumn session

**300732.4** Structural Analysis
**300983.3** Surface Water Hydrology

From 2021 this unit is replaced by

**301329.2** Surface Water Hydrology
**300736.4** Concrete Structures (UG)

And one alternate unit

#### Spring session

**300730.4** Steel Structures
**301001.3** Engineering Geomechanics
**300488.6** Numerical Methods in Engineering

And one alternate unit

#### Industrial Experience

**300741.4** Industrial Experience (Engineering)

### Year 4

#### Autumn session

**300971.3** Engineering Project 1
**300973.3** Engineering Thesis 1: Preliminary Investigations

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

**301245.3** Final Year Project 1 (UG Engineering)

And one alternate unit

And one elective unit

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

#### Spring session

**300982.4** Transportation Engineering
**300972.3** Engineering Project 2
**300974.3** Engineering Thesis 2: Detailed Investigations

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

**301246.4** Final Year Project 2 (UG Engineering)

And one alternate unit

## Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

**300986.3** Applied Mechanics
**300987.3** Composite Structures
**300988.3** Highway Infrastructure
**301397.2** Hydrogeology
**300990.3** Pile Foundations
**300991.3** Statistical Hydrology
**300798.4** Sustainability and Risk Engineering
**300739.4** Timber Structures (UG)
**300994.3** Waste Management
**300992.3** Water and Wastewater Treatment

From Spring 2022, 300992 Water and Wastewater Treatment is replaced by 301424 Water Supply Systems Design

**301424.1** Water Supply Systems Design
**300993.3** Water Resource Engineering

## Specialisation Sub-majors

**SM3065.1** Structures
**SM3066.1** Geotechnical
**SM3067.1** Water and Environment

## Optional Electives

**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

Please note; The units listed below count towards completion of the Key Program for students who may have passed these units in 2020 or earlier.

300989 Hydrogeology (Alternate unit)

## Key Program - Construction

### *KT3136.1*

The Construction Key Program consists of core subjects in structural engineering, project management and construction technologies. Graduates will work in the fields of construction, structural design, and project management. Career opportunities include those in the private or public sector on projects covering highways, airports, and residential & commercial buildings.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

Bachelor of Engineering (Honours) programs have a common first year structure.

Students choose their key program at the end of first year. Construction engineering students will undertake the units listed below.

## Full-time Autumn Intake

**Year 2**

**Autumn session**

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials
**200486.3** Quantity Surveying 1
**300985.4** Soil Mechanics

**Spring session**

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**200468.2** Estimating 1
**300707.2** Building 2

**Year 3**

**Autumn session**

**300732.4** Structural Analysis
**300728.5** Construction Planning
**300736.4** Concrete Structures (UG)

And one Alternate unit

**Spring session**

**300730.4** Steel Structures
**300727.4** Project Management

And one Alternate unit

And one Elective unit

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4**

**Autumn session**

**300971.3** Engineering Project 1
**300798.4** Sustainability and Risk Engineering
**300973.3** Engineering Thesis 1: Preliminary Investigations

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

**301245.3** Final Year Project 1 (UG Engineering)

And one Alternate unit

**Spring session**

**301001.3** Engineering Geomechanics
**300972.3** Engineering Project 2
**300974.3** Engineering Thesis 2: Detailed Investigations

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

**301246.4** Final Year Project 2 (UG Engineering)

And one Alternate unit

## Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

**300986.3** Applied Mechanics
**300987.3** Composite Structures
**300988.3** Highway Infrastructure
**300990.3** Pile Foundations
**300739.4** Timber Structures (UG)
**200503.4** Construction Information Systems
**300726.4** Estimating 2
**200487.5** Quantity Surveying 2
**300748.4** Quality and Value Management

## Specialisation Sub-majors

**SM3065.1** Structures
**SM3068.1** Construction Economics

## Optional Electives

**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Key Program - Electrical

### *KT3137.1*

This program includes core subjects from all branches of electrical engineering. Graduates will work in the fields of electronic components, computers, electro-magnetics, power generation and distribution systems, power and control systems in public utilities, telecommunications, manufacturing, and electrical systems.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |
| Sydney City Campus | Internal |

## Specialisation Structure

Bachelor of Engineering (Honours) programs have a common first year structure.

Students choose their key program at the end of first year. Electrical engineering students will undertake the units listed below.

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

**300005.4** Circuit Theory
**300025.5** Electronics
**300057.7** Signals and Systems
**300018.4** Digital Systems 1

**Spring session**

**300076.5** Microprocessor Systems
**300481.4** Engineering Electromagnetics
**300052.5** Power and Machines
**300009.5** Control Systems

Students may transfer to 3691 Bachelor of Engineering Science at the end of Year 2 of study.

**Year 3**

**Autumn session**

**300007.4** Communication Systems
**300071.4** Electrical Machines 1

And one alternate unit

And one elective unit*

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring session**

**300771.3** Power Systems
**300069.6** Digital Signal Processing
**300070.6** Electrical Drives

And one alternate unit

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4**

**Autumn session**

**300971.3** Engineering Project 1
**300772.3** Power Electronics
**300973.3** Engineering Thesis 1: Preliminary Investigations

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

**301245.3** Final Year Project 1 (UG Engineering)

And one alternate unit

**Spring session**

**300972.3** Engineering Project 2
**300075.7** Instrumentation and Measurement
**300974.3** Engineering Thesis 2: Detailed Investigations

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

**301246.4** Final Year Project 2 (UG Engineering)

And one Alternate unit

## Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

**401140.3** Biomechanics
**301122.3** Biomedical Electronics
**301121.4** Biomedical Signals and Data Analysis
**300997.3** Data Communications
**300019.6** Digital Systems 2
**300029.5** Engineering Visualization
**300361.4** Introduction to Human Biology
**300995.3** Power Quality
**300489.4** Radio and Satellite Communication
**300996.3** Smart Grids and Distributed Generation
**300998.3** Sustainable Energy Systems
**300065.7** Wireless Communications

## Specialisation Sub-majors

**SM3069.1** Telecommunications
**SM3070.1** Power Engineering
**SM3091.1** Biomedical Engineering

## Optional Electives

**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects

The following unit is an optional elective unit offered to students who are engaged in a School approved project.

This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Key Program - Mechanical

### *KT3138.1*

In addition to providing training in conventional mechanical engineering subjects, the course structure introduces students to units of study that address sustainability including sustainable design and sustainable energy engineering. Graduates will be well equipped with broad-based skills that meet the demand of Australian industries and are conscious of the need to promote sustainable design and practices. Examples include mechanical and machinery design; manufacturing; energy production; and marketing and management activities. Skills gained are required in industries such as manufacturing, materials handling, automobile, aerospace, mining, building services and infrastructure development.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |
| Sydney City Campus | Internal |

## Specialisation Structure

Bachelor of Engineering (Honours) programs have a common first year structure.

Students choose their key program at the end of first year. Mechanical engineering students will undertake the units listed below.

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

**300035.5** Kinematics and Kinetics of Machines
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics
**301079.3** Graphics 3: 3D Engineering Specifications and Visualisation

**Spring session**

**300480.4** Dynamics of Mechanical Systems
**300735.4** Automated Manufacturing
**300760.4** Thermodynamics and Heat Transfer
**300761.3** Advanced Mechanics of Materials

Students may transfer to 3691 Bachelor of Engineering Science at the end of Year 2 of study.

**Year 3**

**Autumn session**

**300764.3** Mechanical Design
**300763.3** Advanced Dynamics

And one alternate unit

And one elective unit*

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring session**

**300759.4** Thermal and Fluid Engineering
**300488.6** Numerical Methods in Engineering
**300487.5** Mechatronic Design

And one alternate unit

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4**

**Autumn session**

**300971.3** Engineering Project 1
**300056.6** Robotics
**300973.3** Engineering Thesis 1: Preliminary Investigations

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

**301246.4** Final Year Project 2 (UG Engineering)

And one alternate unit

**Spring session**

**300972.3** Engineering Project 2
**301000.4** Computer Aided Engineering
**300974.3** Engineering Thesis 2: Detailed Investigations

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

**301246.4** Final Year Project 2 (UG Engineering)

And one alternate unit

## Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

**401140.3** Biomechanics
**301122.3** Biomedical Electronics
**301121.4** Biomedical Signals and Data Analysis
**300999.3** Computational Fluid Dynamics
**301076.3** Graphics 2: Visual Simulation
**301091.3** Graphics 4: Kinetic Narratives
**300570.4** Human-Computer Interaction
**300361.4** Introduction to Human Biology
**300044.4** Microcontrollers and PLCs
**300043.6** Mobile Robotics
**301081.3** Sustainable Design 2: Product Service Systems

## Specialisation Sub-majors

| | |
|---|---|
| **SM3072.1** | Automation |
| **SM3092.1** | Computer Aided Design (Mechanical) |
| **SM3091.1** | Biomedical Engineering |

## Optional Electives

| | |
|---|---|
| **301158.3** | Modern Construction Enterprises |
| **301159.3** | Modern Construction Projects |

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

| | |
|---|---|
| **301089.3** | Special Technical Project |

## Key Program - Robotics and Mechatronics

### *KT3139.1*

This program provides the skills necessary for the design of smart machines of all types: cruise control in automobiles, pilotless spacecraft, automated factories and medical telerobotics. The course, accompanied by an extensive and integrated hands-on laboratory program, is essentially concerned with the design of intelligent mechanical systems and automation, and includes the study of robotics, computer control, automated manufacturing, microprocessor applications and machine design. Graduates in the program acquire the combined skills of mechanical and computer/electrical engineering that are needed in leading-edge industries such as aerospace systems, the car industry, automation and robotic applications, biomedical engineering, laser systems, and building materials manufacture.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

Bachelor of Engineering (Honours) programs have a common first year structure.

Students choose their key program at the end of first year. Robotics and Mechatronics engineering students will undertake the units listed below.

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

| | |
|---|---|
| **300035.5** | Kinematics and Kinetics of Machines |
| **300040.4** | Mechanics of Materials |
| **300005.4** | Circuit Theory |
| **300018.4** | Digital Systems 1 |

**Spring session**

| | |
|---|---|
| **300480.4** | Dynamics of Mechanical Systems |
| **300735.4** | Automated Manufacturing |
| **300052.5** | Power and Machines |
| **300044.4** | Microcontrollers and PLCs |

Students may transfer to 3691 Bachelor of Engineering Science at the end of Year 2 of study.

**Year 3**

**Autumn session**

| | |
|---|---|
| **300764.3** | Mechanical Design |
| **300763.3** | Advanced Dynamics |
| **300025.5** | Electronics |

And one alternate unit

**Spring session**

| | |
|---|---|
| **300043.6** | Mobile Robotics |
| **300487.5** | Mechatronic Design |

And one alternate unit

And one elective unit

* Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Industrial Experience**

| | |
|---|---|
| **300741.4** | Industrial Experience (Engineering) |

**Year 4**

**Autumn session**

| | |
|---|---|
| **300971.3** | Engineering Project 1 |
| **300056.6** | Robotics |
| **300973.3** | Engineering Thesis 1: Preliminary Investigations |

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

| | |
|---|---|
| **301245.3** | Final Year Project 1 (UG Engineering) |

And one alternate unit

**Spring session**

| | |
|---|---|
| **300972.3** | Engineering Project 2 |
| **300075.7** | Instrumentation and Measurement |
| **300974.3** | Engineering Thesis 2: Detailed Investigations |

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

| | |
|---|---|
| **301246.4** | Final Year Project 2 (UG Engineering) |

And one alternate unit

## Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

| | |
|---|---|
| **401140.3** | Biomechanics |
| **301122.3** | Biomedical Electronics |
| **301121.4** | Biomedical Signals and Data Analysis |
| **300999.3** | Computational Fluid Dynamics |
| **301000.4** | Computer Aided Engineering |
| **300029.5** | Engineering Visualization |
| **300762.4** | Fluid Mechanics |
| **301076.3** | Graphics 2: Visual Simulation |
| **301079.3** | Graphics 3: 3D Engineering Specifications and Visualisation |
| **300361.4** | Introduction to Human Biology |
| **300759.4** | Thermal and Fluid Engineering |
| **300760.4** | Thermodynamics and Heat Transfer |

## Specialisation Sub-majors

| | |
|---|---|
| **SM3074.1** | Thermal and Fluid Systems |
| **SM3091.1** | Biomedical Engineering |
| **SM3093.1** | Computer Aided Design (Mechatronics) |

## Optional Electives

| | |
|---|---|
| **301158.3** | Modern Construction Enterprises |
| **301159.3** | Modern Construction Projects |

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

| | |
|---|---|
| **301089.3** | Special Technical Project |

## Key Program - Mechanical

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### *KT3140.1*

In addition to providing training in conventional mechanical engineering subjects, the course structure introduces students to units of study that address sustainability including sustainable design and sustainable energy engineering. Graduates will be well equipped with broad-based skills that meet the demand of Australian industries and are conscious of the need to promote sustainable design and practices. Examples include mechanical and machinery design; manufacturing; energy production; and marketing and management activities. Skills gained are required in industries such as manufacturing, materials handling, automobile, aerospace, mining, building services and infrastructure development.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

Students choose their key program at the end of first year. Mechanical engineering students will then undertake the following units.

## Full-time Autumn Intake

### Year 2

#### Autumn session

| | |
|---|---|
| **300035.5** | Kinematics and Kinetics of Machines |
| **300040.4** | Mechanics of Materials |
| **300762.4** | Fluid Mechanics |
| **301290.2** | Design Graphics: Communication for Manufacture |

#### Spring session

| | |
|---|---|
| **300480.4** | Dynamics of Mechanical Systems |
| **300735.4** | Automated Manufacturing |
| **300760.4** | Thermodynamics and Heat Transfer |
| **300761.3** | Advanced Mechanics of Materials |

Students may transfer to 3740 Bachelor of Engineering (Honours) or 3691 Bachelor of Engineering Science at the end of Year 2 of study.

### Year 3

#### Autumn session

| | |
|---|---|
| **300764.3** | Mechanical Design |
| **300763.3** | Advanced Dynamics |
| **300666.4** | Advanced Engineering Topic 1 |

And one elective unit

* Elective units must be level 2 or higher

#### Spring session

| | |
|---|---|
| **300759.4** | Thermal and Fluid Engineering |
| **300488.6** | Numerical Methods in Engineering |
| **300667.4** | Advanced Engineering Topic 2 |
| **300487.5** | Mechatronic Design |

#### Industrial Experience

| | |
|---|---|
| **300741.4** | Industrial Experience (Engineering) |

### Year 4

#### Autumn session

| | |
|---|---|
| **300056.6** | Robotics |
| **300969.3** | Advanced Engineering Thesis 1: Preliminary Investigations |

And two alternate units

#### Spring session

| | |
|---|---|
| **300970.4** | Advanced Engineering Thesis 2: Detailed Investigations |
| **301000.4** | Computer Aided Engineering |

And two alternate units

## Alternate Units

| | |
|---|---|
| **300999.3** | Computational Fluid Dynamics |
| **301287.2** | Design Graphics: Engineering Documentation |
| **301091.3** | Graphics 4: Kinetic Narratives |

**300570.4** Human-Computer Interaction
**300044.4** Microcontrollers and PLCs
**300043.6** Mobile Robotics
**301081.3** Sustainable Design 2: Product Service Systems

## Optional Electives

**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Replaced Units

**Please note; The units listed below count towards completion of the Key Program for students who may have passed these units in 2020 or earlier.**

300971 Engineering Project 1

300972 Engineering Project 2

301076 Graphics 2: Visual Simulation

301079 Graphics 3: 3D Engineering Specifications and Visualisation

## Key Program - Robotics and Mechatronics

### *KT3141.1*

This program provides the skills necessary for the design of smart machines of all types: cruise control in automobiles, pilotless spacecraft, automated factories and medical telerobotics. The course, accompanied by an extensive and integrated hands-on laboratory program, is essentially concerned with the design of intelligent mechanical systems and automation, and includes the study of robotics, computer control, automated manufacturing, microprocessor applications and machine design. Graduates in the program acquire the combined skills of mechanical and computer/electrical engineering that are needed in leading-edge industries such as aerospace systems, the car industry, automation and robotic applications, biomedical engineering, laser systems, and building materials manufacture.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

Students choose their key program at the end of first year. Robotics and Mechatronics engineering students will then undertake the following units.

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

**300035.5** Kinematics and Kinetics of Machines
**300040.4** Mechanics of Materials
**300005.4** Circuit Theory
**300018.4** Digital Systems 1

**Spring session**

**300480.4** Dynamics of Mechanical Systems
**300735.4** Automated Manufacturing
**300052.5** Power and Machines
**300044.4** Microcontrollers and PLCs

Students may transfer to 3740 Bachelor of Engineering (Honours) or 3691 Bachelor of Engineering Science at the end of Year 2 of study.

**Year 3**

**Autumn session**

**300764.3** Mechanical Design
**300763.3** Advanced Dynamics
**300025.5** Electronics
**300666.4** Advanced Engineering Topic 1

**Spring session**

**300043.6** Mobile Robotics
**300667.4** Advanced Engineering Topic 2
**300487.5** Mechatronic Design

And one elective unit

* Elective units must be level 2 or higher

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4**

**Autumn session**

**300056.6** Robotics
**300969.3** Advanced Engineering Thesis 1: Preliminary Investigations

And two alternate units

**Spring session**

**300075.7** Instrumentation and Measurement
**300970.4** Advanced Engineering Thesis 2: Detailed Investigations

And two alternate units

## Alternate Units

**300999.3** Computational Fluid Dynamics
**301000.4** Computer Aided Engineering
**301290.2** Design Graphics: Communication for Manufacture

| | |
|---|---|
| 301287.2 | Design Graphics: Engineering Documentation |
| 300029.5 | Engineering Visualization |
| 300762.4 | Fluid Mechanics |
| 300759.4 | Thermal and Fluid Engineering |
| 300760.4 | Thermodynamics and Heat Transfer |

## Optional Electives

| | |
|---|---|
| 301158.3 | Modern Construction Enterprises |
| 301159.3 | Modern Construction Projects |

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

| | |
|---|---|
| 301089.3 | Special Technical Project |

## Replaced Units

**Please note; The units listed below count towards completion of the Key Program for students who may have passed these units in 2020 or earlier.**

300971 Engineering Project 1

300972 Engineering Project 2

301076 Graphics 2: Visual Simulation

301079 Graphics 3: 3D Engineering Specifications and Visualisation

## Key Program - Mechanical

### *KT3142.1*

In addition to providing training in conventional mechanical engineering subjects, the course structure introduces students to units of study that address sustainability including sustainable design and sustainable energy engineering. Graduates will be well equipped with broad-based skills that meet the demand of Australian industries and are conscious of the need to promote sustainable design and practices. Examples include mechanical and machinery design; manufacturing; energy production; and marketing and management activities. Skills gained are required in industries such as manufacturing, materials handling, automobile, aerospace, mining, building services and infrastructure development.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |
| Sydney City Campus | Internal |

## Specialisation Structure

Students choose their key program at the end of first year. Mechanical engineering students will then undertake the following units.

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

| | |
|---|---|
| 300035.5 | Kinematics and Kinetics of Machines |
| 300040.4 | Mechanics of Materials |
| 300762.4 | Fluid Mechanics |
| 301079.3 | Graphics 3: 3D Engineering Specifications and Visualisation |

**From 2020 301079 is replaced by 301290 Design Graphics: Communication for Manufacture. Students are advised to select the unit below.**

| | |
|---|---|
| 301290.2 | Design Graphics: Communication for Manufacture |

**Spring session**

| | |
|---|---|
| 300480.4 | Dynamics of Mechanical Systems |
| 300735.4 | Automated Manufacturing |
| 300760.4 | Thermodynamics and Heat Transfer |
| 300761.3 | Advanced Mechanics of Materials |

**Industrial Experience**

| | |
|---|---|
| 300741.4 | Industrial Experience (Engineering) |

**Year 3**

**Autumn session**

| | |
|---|---|
| 300764.3 | Mechanical Design |
| 300763.3 | Advanced Dynamics |
| 300967.3 | Engineering Science Project 1 |

And one elective unit

*Elective units must be level 2 or higher

**Spring session**

| | |
|---|---|
| 300759.4 | Thermal and Fluid Engineering |
| 300488.6 | Numerical Methods in Engineering |
| 300968.3 | Engineering Science Project 2 |

And one elective unit

*Elective units must be level 2 or higher

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

| | |
|---|---|
| 301089.3 | Special Technical Project |

## Key Program - Civil

### *KT3143.1*

Civil engineering covers the fields of structural design, geotechnical engineering and water engineering, together

with infrastructure design and environmental engineering. Graduates will work in the fields of design, construction and management of engineering structures. Projects may cover residential and commercial buildings, highways and airports, water supply and sewerage schemes, etc. You may be an engineer in private industry, government departments, or in city, municipal or shire councils.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

### Year 1

#### Autumn session

**200237.5** Mathematics for Engineers 1
**300963.3** Engineering Physics

BBus core unit 1
BBus core unit 2

#### Spring session

**200238.3** Mathematics for Engineers 2
**300965.3** Engineering Materials

BBus core unit 3
BBus core unit 4

### Year 2

#### Autumn session

**300027.4** Engineering Computing

BBus professional unit 1
BBus professional unit 2
BBus major unit 1

#### Spring session

**300021.4** Electrical Fundamentals
**300463.4** Fundamentals of Mechanics

BBus major unit 2
Bbus major unit 3

### Year 3

#### Autumn session

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics
**300985.4** Soil Mechanics

#### Spring session

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**300737.6** Environmental Engineering
**300765.4** Hydraulics

### Year 4

#### Autumn session

**300732.4** Structural Analysis
**300736.4** Concrete Structures (UG)
**301329.2** Surface Water Hydrology

BBus major unit 4

#### Spring session

**300730.4** Steel Structures
**301001.3** Engineering Geomechanics

BBus major unit 5
BBus major unit 6

#### Industrial Experience

**300741.4** Industrial Experience (Engineering)

### Year 5

#### Autumn session

**300973.3** Engineering Thesis 1: Preliminary Investigations

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

**301245.3** Final Year Project 1 (UG Engineering)

BBus professional unit 3
BBus major unit 7
BBus major unit 8

#### Spring session

**300982.4** Transportation Engineering
**300974.3** Engineering Thesis 2: Detailed Investigations

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

**301246.4** Final Year Project 2 (UG Engineering)
**300488.6** Numerical Methods in Engineering

BBus professional unit 4

#### Replaced Units

The units listed below count towards completion of this specialisation for students who passed these units in 2020 or earlier.

300983 - Surface Water Hydrology

## Key Program - Construction

### *KT3144.1*

The Construction Key Program consists of core subjects in structural engineering, project management and construction technologies. Graduates will work in the fields of construction, structural design, and project management. Career opportunities include those in the private or public sector on projects covering highways, airports, and residential & commercial buildings.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 1**

**Autumn session**

**200237.5** Mathematics for Engineers 1
**300963.3** Engineering Physics

BBus core unit 1
BBus core unit 2

**Spring session**

**200238.3** Mathematics for Engineers 2
**300965.3** Engineering Materials

BBus core unit 3
BBus core unit 4

**Year 2**

**Autumn session**

**300027.4** Engineering Computing

BBus professional unit 1
BBus professional unit 2
BBus major unit 1

**Spring session**

**300021.4** Electrical Fundamentals
**300463.4** Fundamentals of Mechanics

BBus major unit 2
Bbus major unit 3

**Year 3**

**Autumn session**

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials

**200486.3** Quantity Surveying 1

From Autumn 2019, students are advised to select the following equivalent unit, 301208 Building Measurement, which will replace 200486 Quantity Surveying 1.

**301208.3** Building Measurement
**300985.4** Soil Mechanics

**Spring session**

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**200468.2** Estimating 1

From Spring 2019, students are advised to select the following equivalent unit, 301207 Building Estimates and Tendering, which will replace 200468 Estimating 1.

**301207.3** Building Estimates and Tendering
**300707.2** Building 2

**Year 4**

**Autumn session**

**300732.4** Structural Analysis
**300736.4** Concrete Structures (UG)
**300728.5** Construction Planning

BBus major unit 4

**Spring session**

**300730.4** Steel Structures
**300727.4** Project Management

BBus major unit 5
BBus major unit 6

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 5**

**Autumn session**

**300798.4** Sustainability and Risk Engineering
**300973.3** Engineering Thesis 1: Preliminary Investigations

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

**301245.3** Final Year Project 1 (UG Engineering)

BBus professional unit 3
BBus major unit 7

**Spring session**

**301001.3** Engineering Geomechanics
**300974.3** Engineering Thesis 2: Detailed Investigations

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

**301246.4** Final Year Project 2 (UG Engineering)

BBus professional unit 4
BBus major unit 8

## Key Program - Electrical

### *KT3145.1*

This program includes core subjects from all branches of electrical engineering. Graduates will work in the fields of electronic components, computers, electro-magnetics, power generation and distribution systems, power and control systems in public utilities, telecommunications, manufacturing, and electrical systems.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 1**

**Autumn session**

**200237.5** Mathematics for Engineers 1
**300963.3** Engineering Physics

BBus core unit 1
BBus core unit 2

**Spring session**

**200238.3** Mathematics for Engineers 2
**300965.3** Engineering Materials

BBus core unit 3
BBus core unit 4

**Year 2**

**Autumn session**

**300027.4** Engineering Computing

BBus professional unit 1
BBus professional unit 2
BBus major unit 1

**Spring session**

**300021.4** Electrical Fundamentals
**300463.4** Fundamentals of Mechanics

BBus major unit 2
Bbus major unit 3

**Year 3**

**Autumn session**

**300005.4** Circuit Theory
**300025.5** Electronics
**300057.7** Signals and Systems
**300018.4** Digital Systems 1

**Spring session**

**300076.5** Microprocessor Systems
**300481.4** Engineering Electromagnetics
**300052.5** Power and Machines
**300009.5** Control Systems

**Year 4**

**Autumn session**

**300007.4** Communication Systems
**300071.4** Electrical Machines 1

BBus major unit 4
BBus major unit 5

**Spring session**

**300771.3** Power Systems
**300069.6** Digital Signal Processing

BBus major unit 6
BBus major unit 7

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 5**

**Autumn session**

**300772.3** Power Electronics
**300973.3** Engineering Thesis 1: Preliminary Investigations

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

**301245.3** Final Year Project 1 (UG Engineering)

BBus professional unit 3
BBus major unit 8

**Spring session**

**300075.7** Instrumentation and Measurement
**300974.3** Engineering Thesis 2: Detailed Investigations

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

**301246.4** Final Year Project 2 (UG Engineering)
**300070.6** Electrical Drives

BBus professional unit 4

## Key Program - Mechanical

### *KT3146.1*

In addition to providing training in conventional mechanical engineering subjects, the course structure introduces students to units of study that address sustainability including sustainable design and sustainable energy engineering. Graduates will be well equipped with broad-based skills that meet the demand of Australian industries and are conscious of the need to promote sustainable design and practices. Examples include mechanical and machinery design; manufacturing; energy production; and marketing and management activities. Skills gained are required in industries such as manufacturing, materials handling, automobile, aerospace, mining, building services and infrastructure development.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

**Year 1**

**Autumn session**

**200237.5** Mathematics for Engineers 1
**300963.3** Engineering Physics

BBus core unit 1
BBus core unit 2

**Spring session**

**200238.3** Mathematics for Engineers 2
**300965.3** Engineering Materials

BBus core unit 3
BBus core unit 4

**Year 2**

**Autumn session**

**300027.4** Engineering Computing

BBus professional unit 1
BBus professional unit 2
BBus major unit 1

**Spring session**

**300021.4** Electrical Fundamentals
**300463.4** Fundamentals of Mechanics

BBus major unit 2
Bbus major unit 3

**Year 3**

**Autumn session**

**300035.5** Kinematics and Kinetics of Machines
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics
**301290.2** Design Graphics: Communication for Manufacture

**Spring session**

**300480.4** Dynamics of Mechanical Systems
**300735.4** Automated Manufacturing
**300760.4** Thermodynamics and Heat Transfer
**300761.3** Advanced Mechanics of Materials

**Year 4**

**Autumn session**

**300764.3** Mechanical Design
**300763.3** Advanced Dynamics

BBus major unit 4
BBus major unit 5

**Spring session**

**300759.4** Thermal and Fluid Engineering
**300488.6** Numerical Methods in Engineering

BBus major unit 6
BBus major unit 7

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 5**

**Autumn session**

**300056.6** Robotics
**300973.3** Engineering Thesis 1: Preliminary Investigations

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

**301245.3** Final Year Project 1 (UG Engineering)

BBus professional unit 3
BBus major unit 8

**Spring session**

**301000.4** Computer Aided Engineering
**300974.3** Engineering Thesis 2: Detailed Investigations

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

**301246.4** Final Year Project 2 (UG Engineering)
**300487.5** Mechatronic Design

BBus professional unit 4

**Replaced Units**

The unit listed below count towards completion of this specialisation for students who passed this unit in 2019 or earlier.

301079 - Graphics 3: 3D Engineering Specifications and Visualisation

## Key Program - Robotics and Mechatronics

### *KT3147.1*

This program provides the skills necessary for the design of smart machines of all types: cruise control in automobiles, pilotless spacecraft, automated factories and medical telerobotics. The course, accompanied by an extensive and integrated hands-on laboratory program, is essentially concerned with the design of intelligent mechanical systems and automation, and includes the study of robotics, computer control, automated manufacturing, microprocessor applications and machine design. Graduates in the program acquire the combined skills of mechanical and computer/electrical engineering that are needed in leading-edge industries such as aerospace systems, the car industry, automation and robotic applications, biomedical engineering, laser systems, and building materials manufacture.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

**Year 1**

**Autumn session**

**200237.5** Mathematics for Engineers 1
**300963.3** Engineering Physics

BBus core unit 1

BBus core unit 2

**Spring session**

**200238.3** Mathematics for Engineers 2
**300965.3** Engineering Materials

BBus core unit 3

BBus core unit 4

**Year 2**

**Autumn session**

**300027.4** Engineering Computing

BBus professional unit 1

BBus professional unit 2

BBus major unit 1

**Spring session**

**300021.4** Electrical Fundamentals
**300463.4** Fundamentals of Mechanics

BBus major unit 2

Bbus major unit 3

**Year 3**

**Autumn session**

**300035.5** Kinematics and Kinetics of Machines
**300040.4** Mechanics of Materials
**300005.4** Circuit Theory
**300018.4** Digital Systems 1

**Spring session**

**300480.4** Dynamics of Mechanical Systems
**300735.4** Automated Manufacturing
**300052.5** Power and Machines
**300044.4** Microcontrollers and PLCs

**Year 4**

**Autumn session**

**300764.3** Mechanical Design
**300763.3** Advanced Dynamics
**300025.5** Electronics

BBus major unit 4

**Spring session**

**300043.6** Mobile Robotics

BBus major unit 5

BBus major unit 6

BBus major unit 7

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 5**

**Autumn session**

**300056.6** Robotics
**300973.3** Engineering Thesis 1: Preliminary Investigations

From Autumn 2021 students are advised to take 301245 Final Year Project 1 instead of 300973 Engineering Thesis 1: Preliminary Investigations

**301245.3** Final Year Project 1 (UG Engineering)

BBus major unit 8

BBus professional unit 3

**Spring session**

**300075.7** Instrumentation and Measurement
**300974.3** Engineering Thesis 2: Detailed Investigations

From Autumn 2021 students are advised to take 301246 Final Year Project 2 instead of 300974 Engineering Thesis 2: Detailed Investigations

**301246.4** Final Year Project 2 (UG Engineering)
**300487.5** Mechatronic Design

BBus professional unit 4

## Key Program - Construction

### *KT3151.1*

The Construction Key Program consists of core subjects in structural engineering, project management and construction technologies. Graduates will work in the fields of construction, structural design, and project management. Career opportunities include those in the private or public sector on projects covering highways, airports, and residential & commercial buildings.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

Bachelor of Engineering (Honours) programs have a common first year structure.

Students choose their key program at the end of first year. Construction engineering students will undertake the units listed below.

## Full-time Autumn Intake

**Year 2**

**Autumn session**

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials
**301208.3** Building Measurement
**300985.4** Soil Mechanics

**Spring session**

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**301207.3** Building Estimates and Tendering

And one elective unit

* Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

Students may transfer to 3691 Bachelor of Engineering Science at the end of Year 2 of study.

**Year 3**

**Autumn session**

**300732.4** Structural Analysis
**300728.5** Construction Planning
**300736.4** Concrete Structures (UG)

And one alternate unit

**Spring session**

**300730.4** Steel Structures
**300727.4** Project Management
**301001.3** Engineering Geomechanics

And one alternate unit

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4**

**Autumn session**

**300971.3** Engineering Project 1
**200471.6** Construction Technology 5 (Envelope)
**300973.3** Engineering Thesis 1: Preliminary Investigations

And one alternate unit

**Spring session**

**300972.3** Engineering Project 2
**300974.3** Engineering Thesis 2: Detailed Investigations
**300725.5** Construction Technology 6 (Services)

And one alternate unit

## Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

**300986.3** Applied Mechanics
**300987.3** Composite Structures
**300988.3** Highway Infrastructure
**300990.3** Pile Foundations
**300739.4** Timber Structures (UG)
**200503.4** Construction Information Systems
**300726.4** Estimating 2
**200487.5** Quantity Surveying 2
**300748.4** Quality and Value Management

## Specialisation Sub-majors

**SM3065.1** Structures
**SM3068.1** Construction Economics

## Optional Electives

**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

**Replaced Units**

The units listed below count towards completion of this Key Program for students who passed these units in 2018 or earlier.

200486 - Quantity Surveying 1

200468 - Estimating 1

## Key Program - Construction

### *KT3152.1*

The Construction Key Program consists of core subjects in structural engineering, project management and construction technologies. Graduates will work in the fields of construction, structural design, and project management. Career opportunities include those in the private or public sector on projects covering highways, airports, and residential & commercial buildings.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

| | |
|---|---|
| 300738.5 | Surveying for Engineers |
| 300040.4 | Mechanics of Materials |
| 301208.3 | Building Measurement |
| 300985.4 | Soil Mechanics |

**Spring session**

| | |
|---|---|
| 300984.3 | Pavement Materials and Design |
| 300733.4 | Introduction to Structural Engineering |
| 301207.3 | Building Estimates and Tendering |

And one elective

* Elective units must be level 2 or higher

Students may transfer to 3740 Bachelor of Engineering (Honours) or 3691 Bachelor of Engineering Science at the end of Year 2 of study.

**Year 3**

**Autumn session**

| | |
|---|---|
| 300732.4 | Structural Analysis |
| 300728.5 | Construction Planning |
| 300736.4 | Concrete Structures (UG) |
| 300666.4 | Advanced Engineering Topic 1 |

**Spring session**

| | |
|---|---|
| 300730.4 | Steel Structures |
| 300727.4 | Project Management |
| 301001.3 | Engineering Geomechanics |
| 300667.4 | Advanced Engineering Topic 2 |

**Industrial Experience**

| | |
|---|---|
| 300741.4 | Industrial Experience (Engineering) |

## Year 4

**Autumn session**

| | |
|---|---|
| 300969.3 | Advanced Engineering Thesis 1: Preliminary Investigations |
| 200471.6 | Construction Technology 5 (Envelope) |

And two alternate units

**Spring session**

| | |
|---|---|
| 300970.4 | Advanced Engineering Thesis 2: Detailed Investigations |
| 300725.5 | Construction Technology 6 (Services) |

And two alternate units

## Alternate Units

| | |
|---|---|
| 300986.3 | Applied Mechanics |
| 300987.3 | Composite Structures |
| 300988.3 | Highway Infrastructure |
| 300990.3 | Pile Foundations |
| 300739.4 | Timber Structures (UG) |

## Optional Electives

| | |
|---|---|
| 301158.3 | Modern Construction Enterprises |
| 301159.3 | Modern Construction Projects |

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

| | |
|---|---|
| 301089.3 | Special Technical Project |

## Replaced Units

**The units listed below count towards completion of this key program for students who passed these units in 2020 or earlier.**

300971 Engineering Project 1

300972 Engineering Project 2

200486 - Quantity Surveying 1

200468 - Estimating 1

## Key Program - Construction

### *KT3153.1*

The Construction Key Program consists of core subjects in structural engineering, project management and construction technologies. Graduates will work in the fields of construction, structural design, and project management.

Career opportunities include those in the private or public sector on projects covering highways, airports, and residential & commercial buildings.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

## Full-time - Autumn Intake

**Year 2**

**Autumn session**

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials
**301208.3** Building Measurement
**300985.4** Soil Mechanics

**Spring session**

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**301207.3** Building Estimates and Tendering

And one elective unit

*Elective units must be Level 2 or higher

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 3**

**Autumn session**

**300732.4** Structural Analysis
**300728.5** Construction Planning
**300967.3** Engineering Science Project 1
**200471.6** Construction Technology 5 (Envelope)

**Spring session**

**300730.4** Steel Structures
**300727.4** Project Management
**300968.3** Engineering Science Project 2

And one elective unit

*Elective units must be level 2 or higher

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

**Replaced Units**

The units listed below count towards completion of this key program for students who passed these units in 2019 or earlier.

200486 - Quantity Surveying 1

200468 - Estimating 1

## Key Program - Civil

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## *KT3154.1*

Civil engineering covers the fields of structural design, geotechnical engineering and water engineering, together with infrastructure design and environmental engineering. Graduates will work in the fields of design, construction and management of engineering structures. Projects may cover residential and commercial buildings, highways and airports, water supply and sewerage schemes, etc. You may be an engineer in private industry, government departments, or in city, municipal or shire councils.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

**Year 2**

**Autumn session**

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics
**300985.4** Soil Mechanics

**Spring session**

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**300737.6** Environmental Engineering
**300765.4** Hydraulics

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 3**

**Autumn session**

**300732.4** Structural Analysis
**300736.4** Concrete Structures (UG)
**300967.3** Engineering Science Project 1
**301329.2** Surface Water Hydrology

**Spring session**

**300730.4** Steel Structures
**300968.3** Engineering Science Project 2

**200238.3** Mathematics for Engineers 2

And one elective unit

*Elective units must be Level 2 or higher

Note: the following unit will no longer be on offer in this specialisation from Autumn 2019. Students should now enrol in 300983 Surface Water Hydrology in Year 3 Autumn.

**300982.4** Transportation Engineering

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

### Replaced Units

The units listed below count towards completion of this specialisation for students who passed these units in 2020 or earlier.

300983 - Surface Water Hydrology

## Key Program - Construction

### *KT3155.1*

The Construction Key Program consists of core subjects in structural engineering, project management and construction technologies. Graduates will work in the fields of construction, structural design, and project management. Career opportunities include those in the private or public sector on projects covering highways, airports, and residential & commercial buildings.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

### Year 2

#### Autumn session

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials
**301208.3** Building Measurement
**300985.4** Soil Mechanics

#### Spring session

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**301207.3** Building Estimates and Tendering
**200238.3** Mathematics for Engineers 2

### Industrial Experience

**300741.4** Industrial Experience (Engineering)

### Year 3

#### Autumn session

**300732.4** Structural Analysis
**300728.5** Construction Planning
**300967.3** Engineering Science Project 1
**200471.6** Construction Technology 5 (Envelope)

#### Spring session

**300730.4** Steel Structures
**300727.4** Project Management
**300968.3** Engineering Science Project 2

And one elective unit

*Elective units must be level 2 or higher

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

### Replaced Units

The units listed below count towards completion of this key program for students who passed these units in 2019 or earlier.

200486 - Quantity Surveying 1

200468 - Estimating 1

## Key Program - Electrical

### *KT3156.1*

This program includes core subjects from all branches of electrical engineering. Graduates will work in the fields of electronic components, computers, electro-magnetics, power generation and distribution systems, power and control in public utilities, telecommunications, manufacturing, and electrical systems.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

### Year 2

#### Autumn session

**300005.4** Circuit Theory
**300025.5** Electronics
**300057.7** Signals and Systems
**300018.4** Digital Systems 1

**Spring session**

**300076.5** Microprocessor Systems
**300481.4** Engineering Electromagnetics
**300052.5** Power and Machines
**300009.5** Control Systems

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 3**

**Autumn session**

**300007.4** Communication Systems
**300071.4** Electrical Machines 1
**300967.3** Engineering Science Project 1
**200238.3** Mathematics for Engineers 2

**Spring session**

**300771.3** Power Systems
**300069.6** Digital Signal Processing
**300968.3** Engineering Science Project 2

And one elective unit

*Elective units must be level 2 or higher

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Key Program - Mechanical

### *KT3157.1*

In addition to providing training in conventional mechanical engineering subjects, the course structure introduces students to units of study that address sustainability including sustainable design and sustainable energy engineering. Graduates will be well equipped with broad-based skills that meet the demand of Australian industries and are conscious of the need to promote sustainable design and practices. Examples include mechanical and machinery design; manufacturing; energy production; and marketing and management activities. Skills gained are required in industries such as manufacturing, materials handling, automobile, aerospace, mining, building services and infrastructure development.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

**Year 2**

**Autumn session**

**300035.5** Kinematics and Kinetics of Machines
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics
**200238.3** Mathematics for Engineers 2

**Spring session**

**300480.4** Dynamics of Mechanical Systems
**300735.4** Automated Manufacturing
**300760.4** Thermodynamics and Heat Transfer
**300761.3** Advanced Mechanics of Materials

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 3**

**Autumn session**

**300764.3** Mechanical Design
**300763.3** Advanced Dynamics
**300967.3** Engineering Science Project 1

And one elective unit

*Elective units must be level 2 or higher

**Spring session**

**300759.4** Thermal and Fluid Engineering
**300488.6** Numerical Methods in Engineering
**300968.3** Engineering Science Project 2
**301290.2** Design Graphics: Communication for Manufacture

**Replaced Units**

The units listed below count towards completion of this specialisation for students who passed these units in 2019 or earlier.

301079 - Graphics 3: 3D Engineering Specifications and Visualisation

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

**301089.3** Special Technical Project

## Key Program - Robotics and Mechatronics

### *KT3158.1*

This program provides the skills necessary for the design of smart machines of all types: cruise control in automobiles, pilotless spacecraft, automated factories and medical telerobotics. The course, accompanied by an extensive and

integrated hands-on laboratory program, is essentially concerned with the design of intelligent mechanical systems and automation, and includes the study of robotics, computer control, automated manufacturing, microprocessor applications and machine design. Graduates in the program acquire the combined skills of mechanical and computer/electrical engineering that are needed in leading-edge industries such as aerospace systems, the car industry, automation and robotic applications, biomedical engineering, laser systems, and building materials manufacture.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

**Year 2**

**Autumn session**

| | |
|---|---|
| 300035.5 | Kinematics and Kinetics of Machines |
| 300040.4 | Mechanics of Materials |
| 300005.4 | Circuit Theory |
| 300018.4 | Digital Systems 1 |

**Spring session**

| | |
|---|---|
| 300480.4 | Dynamics of Mechanical Systems |
| 300735.4 | Automated Manufacturing |
| 300052.5 | Power and Machines |
| 300044.4 | Microcontrollers and PLCs |

**Industrial Experience**

| | |
|---|---|
| 300741.4 | Industrial Experience (Engineering) |

**Year 3**

**Autumn session**

| | |
|---|---|
| 300764.3 | Mechanical Design |
| 300763.3 | Advanced Dynamics |
| 300056.6 | Robotics |
| 300967.3 | Engineering Science Project 1 |

**Spring session**

| | |
|---|---|
| 300043.6 | Mobile Robotics |
| 300968.3 | Engineering Science Project 2 |
| 200238.3 | Mathematics for Engineers 2 |

And one elective unit

* Elective units must be level 2 or higher

## Optional Elective

The following unit is an optional elective unit offered to students who are engaged in a School approved project. This unit can be taken during the third year of this course, however, permission is required to enrol in the unit.

| | |
|---|---|
| 301089.3 | Special Technical Project |

# Key Program - Civil

## *KT3159.1*

Civil engineering covers the fields of structural design, geotechnical engineering and water engineering, together with infrastructure design and environmental engineering. Graduates will work in the fields of design, construction and management of engineering structures. Projects may cover residential and commercial buildings, highways and airports, water supply and sewerage schemes, etc. You may be an engineer in private industry, government departments, or in city, municipal or shire councils.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |
| Sydney City Campus | Internal |

## Specialisation Structure

Qualification for this award requires the successful completion of 320 credit points, which include the units listed in the recommended sequence below.

## Full-time Autumn Intake

*** All students undertaking the Bachelor of Engineering (Honours) are required to enrol in 300743 Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study.**

The readiness test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether a student will remain in 300743 Mathematics for Engineers Preliminary or be transferred by the School to 200237 Mathematics for Engineers 1.

Students remaining in 300743 Mathematics for Engineers Preliminary will be required to complete 200237 Mathematics for Engineers 1 during second semester and will be encouraged to complete 200238 Mathematics for Engineers 2 during the Summer session.

**Year 1**

**Autumn**

| | |
|---|---|
| 300743.4 | Mathematics for Engineers Preliminary |

Or

| | |
|---|---|
| 200237.5 | Mathematics for Engineers 1 |
| 300027.4 | Engineering Computing |
| 300963.3 | Engineering Physics |
| 300964.3 | Introduction to Engineering Practice |

**Spring**

| | |
|---|---|
| 200238.3 | Mathematics for Engineers 2 |
| 300463.4 | Fundamentals of Mechanics |
| 300965.3 | Engineering Materials |

And one elective

**Year 2**

**Autumn**

| | |
|---|---|
| **300738.5** | Surveying for Engineers |
| **300040.4** | Mechanics of Materials |
| **300762.4** | Fluid Mechanics |
| **300985.4** | Soil Mechanics |

**Spring**

| | |
|---|---|
| **300984.3** | Pavement Materials and Design |
| **300733.4** | Introduction to Structural Engineering |
| **300737.6** | Environmental Engineering |
| **300765.4** | Hydraulics |

**Students may transfer to 3691 Bachelor of Engineering Science at the end of Year 2 of study.**

**Year 3**

**Autumn**

| | |
|---|---|
| **300732.4** | Structural Analysis |
| **301329.2** | Surface Water Hydrology |
| **300736.4** | Concrete Structures (UG) |

Specialisation Alternate unit

**Spring**

| | |
|---|---|
| **300730.4** | Steel Structures |
| **301001.3** | Engineering Geomechanics |
| **300488.6** | Numerical Methods in Engineering |

Specialisation Alternate unit

**Industrial Experience**

| | |
|---|---|
| **300741.4** | Industrial Experience (Engineering) |

**Year 4**

**Autumn**

| | |
|---|---|
| **301245.3** | Final Year Project 1 (UG Engineering) |

Specialisation Alternate unit

And two electives

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring**

| | |
|---|---|
| **301246.4** | Final Year Project 2 (UG Engineering) |
| **300798.4** | Sustainability and Risk Engineering |

Specialisation Alternate unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

## Specialisation Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

| | |
|---|---|
| **300986.3** | Applied Mechanics |
| **300987.3** | Composite Structures |
| **300988.3** | Highway Infrastructure |
| **301397.2** | Hydrogeology |
| **300990.3** | Pile Foundations |
| **300982.4** | Transportation Engineering |
| **300739.4** | Timber Structures (UG) |
| **300991.3** | Statistical Hydrology |
| **300994.3** | Waste Management |
| **300992.3** | Water and Wastewater Treatment |

From Spring 2022, 300992 Water and Wastewater Treatment is replaced by 301424 Water Supply Systems Design

| | |
|---|---|
| **301424.1** | Water Supply Systems Design |
| **300993.3** | Water Resource Engineering |

## Specialisation Sub-majors

| | |
|---|---|
| **SM3121.1** | Structures |
| **SM3122.1** | Geotechnical |
| **SM3098.1** | Water and Environment |

**Replaced Units**

The units listed below count towards completion of the Key Program for students who may have passed these units in 2020 or earlier.

300983 - Surface Water Hydrology (Core unit)

300989 - Hydrogeology (Alternate unit)

## Key Program - Construction

### *KT3160.1*

The Construction Key Program consists of core subjects in structural engineering, project management and construction technologies. Graduates will work in the fields of construction, structural design, and project management. Career opportunities include those in the private or public sector on projects covering highways, airports, residential and commercial buildings.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

Qualification for this award requires the successful completion of 320 credit points, which include the units listed in the recommended sequence below.

## Full-time Autumn Intake

*** All students undertaking the Bachelor of Engineering (Honours) are required to enrol in 300743 Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study.**

The readiness test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether a student will remain in 300743 Mathematics for Engineers Preliminary or be transferred by the School to 200237 Mathematics for Engineers 1.

Students remaining in 300743 Mathematics for Engineers Preliminary will be required to complete 200237 Mathematics for Engineers 1 during second semester and will be encouraged to complete 200238 Mathematics for Engineers 2 during the Summer session.

**Year 1**

**Autumn**

| | |
|---|---|
| **300743.4** | Mathematics for Engineers Preliminary |

Or

| | |
|---|---|
| **200237.5** | Mathematics for Engineers 1 |
| **300027.4** | Engineering Computing |
| **300963.3** | Engineering Physics |
| **300964.3** | Introduction to Engineering Practice |

**Spring**

| | |
|---|---|
| **200238.3** | Mathematics for Engineers 2 |
| **300463.4** | Fundamentals of Mechanics |
| **300965.3** | Engineering Materials |

And one elective

**Year 2**

**Autumn**

| | |
|---|---|
| **300738.5** | Surveying for Engineers |
| **300040.4** | Mechanics of Materials |
| **301208.3** | Building Measurement |
| **300985.4** | Soil Mechanics |

**Spring**

| | |
|---|---|
| **300984.3** | Pavement Materials and Design |
| **300733.4** | Introduction to Structural Engineering |
| **301207.3** | Building Estimates and Tendering |

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Students may transfer to 3691 Bachelor of Engineering Science at the end of Year 2 of study.**

**Year 3**

**Autumn**

| | |
|---|---|
| **300732.4** | Structural Analysis |
| **300728.5** | Construction Planning |
| **300736.4** | Concrete Structures (UG) |

Specialisation Alternate Unit

**Spring**

| | |
|---|---|
| **300730.4** | Steel Structures |
| **300727.4** | Project Management |
| **301001.3** | Engineering Geomechanics |

Specialisation Alternate Unit

**Industrial Experience**

| | |
|---|---|
| **300741.4** | Industrial Experience (Engineering) |

**Year 4**

**Autumn**

| | |
|---|---|
| **200471.6** | Construction Technology 5 (Envelope) |
| **301245.3** | Final Year Project 1 (UG Engineering) |

Specialisation Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring**

| | |
|---|---|
| **300725.5** | Construction Technology 6 (Services) |
| **301246.4** | Final Year Project 2 (UG Engineering) |

Specialisation Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

## Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

| | |
|---|---|
| **300986.3** | Applied Mechanics |
| **300987.3** | Composite Structures |
| **300988.3** | Highway Infrastructure |
| **300990.3** | Pile Foundations |
| **300739.4** | Timber Structures (UG) |
| **200503.4** | Construction Information Systems |
| **300726.4** | Estimating 2 |
| **200487.5** | Quantity Surveying 2 |
| **300748.4** | Quality and Value Management |

## Specialisation Sub-majors

| | |
|---|---|
| **SM3121.1** | Structures |
| **SM3068.1** | Construction Economics |

## Key Program - Electrical

### *KT3161.1*

This program includes core subjects from all branches of electrical engineering. Graduates will work in the fields of electronic components, computers, electro-magnetic,

power generation and distribution systems, power and control systems in public utilities, telecommunications, manufacturing, and electrical systems.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |
| Sydney City Campus | Internal |

## Specialisation Structure

Qualification for this award requires the successful completion of 320 credit points, which include the units listed in the recommended sequence below.

## Full-time Autumn Intake

*** All students undertaking the Bachelor of Engineering (Honours) are required to enrol in 300743 Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study.**

Students remaining in 300743 Mathematics for Engineers Preliminary will be required to complete 200237 Mathematics for Engineers 1 during second semester and will be encouraged to complete 200238 Mathematics for Engineers 2 during the Summer session.

**Year 1**

**Autumn**

**300743.4** Mathematics for Engineers Preliminary

Or

**200237.5** Mathematics for Engineers 1
**300027.4** Engineering Computing
**300963.3** Engineering Physics
**300964.3** Introduction to Engineering Practice

**Spring**

**200238.3** Mathematics for Engineers 2
**300463.4** Fundamentals of Mechanics
**300021.4** Electrical Fundamentals

And one elective

**Year 2**

**Autumn**

**300005.4** Circuit Theory
**300025.5** Electronics
**300057.7** Signals and Systems
**300018.4** Digital Systems 1

**Spring**

**300076.5** Microprocessor Systems
**300481.4** Engineering Electromagnetics
**300052.5** Power and Machines
**300009.5** Control Systems

**Students may transfer to 3691 Bachelor of Engineering Science at the end of Year 2 of study.**

**Year 3**

**Autumn**

**300007.4** Communication Systems
**300071.4** Electrical Machines 1

Specialisation Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring**

**300771.3** Power Systems
**300069.6** Digital Signal Processing
**300070.6** Electrical Drives

Specialisation Alternate Unit

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

Year 4

**Autumn**

**300772.3** Power Electronics
**301245.3** Final Year Project 1 (UG Engineering)

Specialisation Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring**

**300075.7** Instrumentation and Measurement
**301246.4** Final Year Project 2 (UG Engineering)

Specialisation Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

## Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

**401140.3** Biomechanics
**301122.3** Biomedical Electronics
**301121.4** Biomedical Signals and Data Analysis
**300997.3** Data Communications
**300019.6** Digital Systems 2
**300029.5** Engineering Visualization
**300361.4** Introduction to Human Biology
**300995.3** Power Quality
**300489.4** Radio and Satellite Communication
**300996.3** Smart Grids and Distributed Generation
**300998.3** Sustainable Energy Systems
**300065.7** Wireless Communications

## Specialisation Sub-majors

| | |
|---|---|
| **SM3069.1** | Telecommunications |
| **SM3070.1** | Power Engineering |
| **SM3091.1** | Biomedical Engineering |

## Key Program - Mechanical

### *KT3162.1*

In addition to providing training in conventional mechanical engineering subjects, this program introduces students to concepts around sustainability including sustainable design and sustainable energy engineering. Graduates will be well equipped with broad-based skills that meet the demand of Australian industries and are conscious of the need to promote sustainable design and practices. Examples include mechanical and machinery design; manufacturing; energy production; and marketing and management activities. Skills gained are required in industries such as manufacturing, materials handling, automobile, aerospace, mining, building services and infrastructure development.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |
| Sydney City Campus | Internal |

## Specialisation Structure

Qualification for this award requires the successful completion of 320 credit points, which include the units listed in the recommended sequence below.

## Full-time Autumn Intake

*** All students undertaking the Bachelor of Engineering (Honours) are required to enrol in 300743 Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study.**

The readiness test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether a student will remain in 300743 Mathematics for Engineers Preliminary or be transferred by the School to 200237 Mathematics for Engineers 1.

Students remaining in 300743 Mathematics for Engineers Preliminary will be required to complete 200237 Mathematics for Engineers 1 during second semester and will be encouraged to complete 200238 Mathematics for Engineers 2 during the Summer session.

**Year 1**

**Autumn**

| | |
|---|---|
| **300743.4** | Mathematics for Engineers Preliminary |

Or

| | |
|---|---|
| **200237.5** | Mathematics for Engineers 1 |
| **300027.4** | Engineering Computing |
| **300963.3** | Engineering Physics |
| **300964.3** | Introduction to Engineering Practice |

**Spring**

| | |
|---|---|
| **200238.3** | Mathematics for Engineers 2 |
| **300463.4** | Fundamentals of Mechanics |
| **300965.3** | Engineering Materials |

And one elective

**Year 2**

**Autumn**

| | |
|---|---|
| **300035.5** | Kinematics and Kinetics of Machines |
| **300040.4** | Mechanics of Materials |
| **300762.4** | Fluid Mechanics |
| **301287.2** | Design Graphics: Engineering Documentation |

**Spring**

| | |
|---|---|
| **300480.4** | Dynamics of Mechanical Systems |
| **300735.4** | Automated Manufacturing |
| **300760.4** | Thermodynamics and Heat Transfer |
| **300761.3** | Advanced Mechanics of Materials |

**Students may transfer to 3691 Bachelor of Engineering Science at the end of Year 2 of study.**

**Year 3**

**Autumn**

| | |
|---|---|
| **300764.3** | Mechanical Design |
| **300763.3** | Advanced Dynamics |

Specialisation Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring**

| | |
|---|---|
| **300759.4** | Thermal and Fluid Engineering |
| **300488.6** | Numerical Methods in Engineering |
| **300487.5** | Mechatronic Design |

Specialisation Alternate Unit

**Industrial Experience**

| | |
|---|---|
| **300741.4** | Industrial Experience (Engineering) |

**Year 4**

**Autumn**

| | |
|---|---|
| **300056.6** | Robotics |
| **301245.3** | Final Year Project 1 (UG Engineering) |

Specialisation Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring**

**301000.4** Computer Aided Engineering
**301246.4** Final Year Project 2 (UG Engineering)

Specialisation Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

## Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

**401140.3** Biomechanics
**301122.3** Biomedical Electronics
**301121.4** Biomedical Signals and Data Analysis
**300999.3** Computational Fluid Dynamics
**301290.2** Design Graphics: Communication for Manufacture
**301091.3** Graphics 4: Kinetic Narratives
**300570.4** Human-Computer Interaction
**300361.4** Introduction to Human Biology
**300044.4** Microcontrollers and PLCs
**300043.6** Mobile Robotics
**301081.3** Sustainable Design 2: Product Service Systems

**Replaced Units**

The units listed below count towards completion of the course (or major) for students who may have passed these units in 2019 or earlier.

301076 - Graphics 2: Visual Simulation

301079 - Graphics 3: 3D Engineering Specifications and Visualisation

## Specialisation Sub-majors

**SM3072.1** Automation
**SM3091.1** Biomedical Engineering
**SM3099.1** Computer Aided Design (Mechanical)

## Key Program - Robotics and Mechatronics

### *KT3163.1*

The Robotics and Mechatronics program provides the skills necessary for the design of smart machines of all types: cruise control in automobiles, pilotless spacecraft, automated factories and medical telerobotics. Students will have the opportunity to be involved in an extensive and integrated hands-on laboratory program, which is concerned with the design of intelligent mechanical systems and automation, and includes the study of robotics, computer control, automated manufacturing, microprocessor applications and machine design. Graduates of this program acquire the combined skills of mechanical and computer/electrical engineering that are needed in leading-edge industries such as aerospace systems, the car industry, automation and robotic applications, biomedical engineering, laser systems, and building materials manufacture.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

Qualification for this award requires the successful completion of 320 credit points, which include the units listed in the recommended sequence below.

## Full-time Autumn Intake

*** All students undertaking the Bachelor of Engineering (Honours) are required to enrol in 300743 Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study.**

The readiness test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether a student will remain in 300743 Mathematics for Engineers Preliminary or be transferred by the School to 200237 Mathematics for Engineers 1.

Students remaining in 300743 Mathematics for Engineers Preliminary will be required to complete 200237 Mathematics for Engineers 1 during second semester and will be encouraged to complete 200238 Mathematics for Engineers 2 during the Summer session.

**Year 1**

**Autumn**

**300743.4** Mathematics for Engineers Preliminary

Or

**200237.5** Mathematics for Engineers 1
**300027.4** Engineering Computing
**300963.3** Engineering Physics
**300964.3** Introduction to Engineering Practice

**Spring**

**200238.3** Mathematics for Engineers 2
**300463.4** Fundamentals of Mechanics
**300021.4** Electrical Fundamentals

And one elective

**Year 2**

**Autumn**

**300035.5** Kinematics and Kinetics of Machines
**300040.4** Mechanics of Materials
**300005.4** Circuit Theory
**300018.4** Digital Systems 1

**Spring**

**300480.4** Dynamics of Mechanical Systems
**300735.4** Automated Manufacturing
**300052.5** Power and Machines

**300044.4** Microcontrollers and PLCs

**Students may transfer to 3691 Bachelor of Engineering Science at the end of Year 2 of study.**

**Year 3**

**Autumn**

**300764.3** Mechanical Design
**300763.3** Advanced Dynamics
**300025.5** Electronics

Specialisation Alternate Unit

**Spring**

**300043.6** Mobile Robotics
**300487.5** Mechatronic Design

Specialisation Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4**

**Autumn**

**300056.6** Robotics
**301245.3** Final Year Project 1 (UG Engineering)

Specialisation Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring**

**300075.7** Instrumentation and Measurement
**301246.4** Final Year Project 2 (UG Engineering)

Specialisation Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

## Alternate Units

Alternate units may be used to complete one of the Specialisation sub-majors listed below.

**401140.3** Biomechanics
**301122.3** Biomedical Electronics
**301121.4** Biomedical Signals and Data Analysis
**300999.3** Computational Fluid Dynamics
**301000.4** Computer Aided Engineering
**300029.5** Engineering Visualization
**300762.4** Fluid Mechanics
**301287.2** Design Graphics: Engineering Documentation
**301290.2** Design Graphics: Communication for Manufacture
**300361.4** Introduction to Human Biology
**300759.4** Thermal and Fluid Engineering
**300760.4** Thermodynamics and Heat Transfer

**Please note**

**The units listed below count towards completion of the course (or major) for students who may have passed these units in 2019 or earlier.**

**301076.3** Graphics 2: Visual Simulation
**301079.3** Graphics 3: 3D Engineering Specifications and Visualisation

## Specialisation Sub-majors

**SM3093.1** Computer Aided Design (Mechatronics)
**SM3074.1** Thermal and Fluid Systems
**SM3091.1** Biomedical Engineering

## Key Program - Construction

### *KT3166.1*

The Construction Key Program consists of core subjects in structural engineering, project management and construction technologies. Graduates will work in the fields of construction, structural design, and project management. Career opportunities include those in the private or public sector on projects covering highways, airports, residential and commercial buildings.

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

Qualification for this award requires the successful completion of 320 credit points, which include the units listed in the recommended sequence below.

## Full-time Autumn Intake

*** All students undertaking the Bachelor of Engineering (Honours) are required to enrol in 300743 Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study.**

The readiness test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether a student will remain in 300743 Mathematics for Engineers Preliminary or be transferred by the School to 200237 Mathematics for Engineers 1.

Students remaining in 300743 Mathematics for Engineers Preliminary will be required to complete 200237 Mathematics for Engineers 1 during second semester and

will be encouraged to complete 200238 Mathematics for Engineers 2 during the Summer session.

**Year 1**

**Autumn**

**300743.4** Mathematics for Engineers Preliminary

Or

**200237.5** Mathematics for Engineers 1
**300027.4** Engineering Computing
**300963.3** Engineering Physics
**300964.3** Introduction to Engineering Practice

**Spring**

**200238.3** Mathematics for Engineers 2
**300463.4** Fundamentals of Mechanics
**300965.3** Engineering Materials

And one elective

**Year 2**

**Autumn**

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials
**301208.3** Building Measurement
**300985.4** Soil Mechanics

**Spring**

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**301207.3** Building Estimates and Tendering

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Year 3**

**Autumn**

**300732.4** Structural Analysis
**301229.1** Construction Project Management
**300736.4** Concrete Structures (UG)

Specialisation Alternate Unit

**Spring**

**300730.4** Steel Structures
**301230.1** Construction Scheduling
**301001.3** Engineering Geomechanics

Specialisation Alternate Unit

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 4**

**Autumn**

**301231.1** Residential Building Project

**301245.3** Final Year Project 1 (UG Engineering)

Specialisation Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Spring**

**301222.1** Envelope and Services
**301246.4** Final Year Project 2 (UG Engineering)

Specialisation Alternate Unit

And one elective

*Elective units must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary unit)

**Specialisation Alternate Units**

Specialisation Alternate Units may be used to complete one of the Specialisation sub-majors listed below.

**300986.3** Applied Mechanics
**300987.3** Composite Structures
**300988.3** Highway Infrastructure
**300990.3** Pile Foundations
**300739.4** Timber Structures (UG)
**200503.4** Construction Information Systems
**301234.1** Building Cost Studies
**301233.1** Advanced Building Measurement
**300748.4** Quality and Value Management

**Specialisation Sub-majors**

**SM3121.1** Structures
**SM3100.1** Construction Economics

## Key Program - Civil

### *KT3167.1*

Civil engineering covers the fields of structural design, geotechnical engineering and water engineering, together with infrastructure design and environmental engineering. Graduates will work in the fields of design, construction and management of engineering structures. Projects may cover residential and commercial buildings, highways and airports, water supply and sewerage schemes, etc. You may be an engineer in private industry, government departments, or in city, municipal or shire councils.

## Specialisation Structure

## Full-time - Autumn Intake

**Year 1**

**Autumn session**

**200237.5** Mathematics for Engineers 1
**300963.3** Engineering Physics

BBus core unit 1

BBus core unit 2

**Spring session**

**200238.3** Mathematics for Engineers 2
**300965.3** Engineering Materials

BBus core unit 3
BBus core unit 4

**Year 2**

**Autumn session**

**300027.4** Engineering Computing

BBus professional unit 1
BBus professional unit 2
BBus major unit 1

**Spring session**

**300021.4** Electrical Fundamentals
**300463.4** Fundamentals of Mechanics

BBus major unit 2
BBus major unit 3

**Year 3**

**Autumn session**

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics
**300985.4** Soil Mechanics

**Spring session**

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**300737.6** Environmental Engineering
**300765.4** Hydraulics

**Year 4**

**Autumn session**

**300732.4** Structural Analysis
**300736.4** Concrete Structures (UG)
**301329.2** Surface Water Hydrology

BBus major unit 4

**Spring session**

**300730.4** Steel Structures
**301001.3** Engineering Geomechanics

BBus major unit 5
BBus major unit 6

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 5**

**Autumn session**

**301245.3** Final Year Project 1 (UG Engineering)

BBus professional unit 3
BBus major unit 7
BBus major unit 8

**Spring session**

**300798.4** Sustainability and Risk Engineering
**301246.4** Final Year Project 2 (UG Engineering)
**300488.6** Numerical Methods in Engineering

BBus professional unit 4

**Replaced Units**

The units listed below count towards completion of this specialisation for students who passed these units in 2020 or earlier.

300983 - Surface Water Hydrology

## Key Program - Construction

### *KT3168.1*

The Construction Key Program consists of core subjects in structural engineering, project management and construction technologies. Graduates will work in the fields of construction, structural design, and project management. Career opportunities include those in the private or public sector on projects covering highways, airports, and residential & commercial buildings.

## Specialisation Structure

## Full-time - Autumn Intake

**Year 1**

**Autumn session**

**200237.5** Mathematics for Engineers 1
**300963.3** Engineering Physics

BBus core unit 1
BBus core unit 2

**Spring session**

**200238.3** Mathematics for Engineers 2
**300965.3** Engineering Materials

BBus core unit 3
BBus core unit 4

**Year 2**

**Autumn session**

**300027.4** Engineering Computing

BBus professional unit 1
BBus professional unit 2
BBus major unit 1

**Spring session**

**300021.4** Electrical Fundamentals
**300463.4** Fundamentals of Mechanics

BBus major unit 2
Bbus major unit 3

**Year 3**

**Autumn session**

**300738.5** Surveying for Engineers
**300040.4** Mechanics of Materials
**301208.3** Building Measurement
**300985.4** Soil Mechanics

**Spring session**

**300984.3** Pavement Materials and Design
**300733.4** Introduction to Structural Engineering
**301207.3** Building Estimates and Tendering
**301227.2** Non-Residential Building

**Year 4**

**Autumn session**

**300732.4** Structural Analysis
**300736.4** Concrete Structures (UG)
**301229.1** Construction Project Management

BBus major unit 4

**Spring session**

**300730.4** Steel Structures
**301230.1** Construction Scheduling

BBus major unit 5
BBus major unit 6

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 5**

**Autumn session**

**300798.4** Sustainability and Risk Engineering
**301245.3** Final Year Project 1 (UG Engineering)

BBus professional unit 3
BBus major unit 7

**Spring session**

**301001.3** Engineering Geomechanics
**301246.4** Final Year Project 2 (UG Engineering)

BBus professional unit 4
BBus major unit 8

## Key Program - Electrical

### *KT3169.1*

This program includes core subjects from all branches of electrical engineering. Graduates will work in the fields of electronic components, computers, electro-magnetics, power generation and distribution systems, power and control systems in public utilities, telecommunications, manufacturing, and electrical systems.

## Specialisation Structure

## Full-time - Autumn Intake

**Year 1**

**Autumn session**

**200237.5** Mathematics for Engineers 1
**300963.3** Engineering Physics

BBus core unit 1
BBus core unit 2

**Spring session**

**200238.3** Mathematics for Engineers 2
**300965.3** Engineering Materials

BBus core unit 3
BBus core unit 4

**Year 2**

**Autumn session**

**300027.4** Engineering Computing

BBus professional unit 1
BBus professional unit 2
BBus major unit 1

**Spring session**

**300021.4** Electrical Fundamentals
**300463.4** Fundamentals of Mechanics

BBus major unit 2
Bbus major unit 3

**Year 3**

**Autumn session**

**300005.4** Circuit Theory
**300025.5** Electronics
**300057.7** Signals and Systems
**300018.4** Digital Systems 1

**Spring session**

**300076.5** Microprocessor Systems
**300481.4** Engineering Electromagnetics
**300052.5** Power and Machines

**300009.5** Control Systems

**Year 4**

**Autumn session**

**300007.4** Communication Systems
**300071.4** Electrical Machines 1

BBus major unit 4

BBus major unit 5

**Spring session**

**300771.3** Power Systems
**300069.6** Digital Signal Processing

BBus major unit 6

BBus major unit 7

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 5**

**Autumn session**

**300772.3** Power Electronics
**301245.3** Final Year Project 1 (UG Engineering)

BBus professional unit 3

BBus major unit 8

**Spring session**

**300075.7** Instrumentation and Measurement

From Spring 2022 students are advised to select 301474 Instrumentation and Measurement

**301246.4** Final Year Project 2 (UG Engineering)
**300070.6** Electrical Drives

BBus professional unit 4

## Key Program - Mechanical

### *KT3170.1*

In addition to providing training in conventional mechanical engineering subjects, the course structure introduces students to units of study that address sustainability including sustainable design and sustainable energy engineering. Graduates will be well equipped with broad-based skills that meet the demand of Australian industries and are conscious of the need to promote sustainable design and practices. Examples include mechanical and machinery design; manufacturing; energy production; and marketing and management activities. Skills gained are required in industries such as manufacturing, materials handling, automobile, aerospace, mining, building services and infrastructure development.

## Specialisation Structure

**Year 1**

**Autumn session**

**200237.5** Mathematics for Engineers 1
**300963.3** Engineering Physics

BBus core unit 1

BBus core unit 2

**Spring session**

**200238.3** Mathematics for Engineers 2
**300965.3** Engineering Materials

BBus core unit 3

BBus core unit 4

**Year 2**

**Autumn session**

**300027.4** Engineering Computing

BBus professional unit 1

BBus professional unit 2

BBus major unit 1

**Spring session**

**300021.4** Electrical Fundamentals
**300463.4** Fundamentals of Mechanics

BBus major unit 2

Bbus major unit 3

**Year 3**

**Autumn session**

**300035.5** Kinematics and Kinetics of Machines
**300040.4** Mechanics of Materials
**300762.4** Fluid Mechanics
**301290.2** Design Graphics: Communication for Manufacture

**Spring session**

**300480.4** Dynamics of Mechanical Systems
**300735.4** Automated Manufacturing
**300760.4** Thermodynamics and Heat Transfer
**300761.3** Advanced Mechanics of Materials

**Year 4**

**Autumn session**

**300764.3** Mechanical Design
**300763.3** Advanced Dynamics

BBus major unit 4

BBus major unit 5

**Spring session**

**300759.4** Thermal and Fluid Engineering
**300488.6** Numerical Methods in Engineering

BBus major unit 6

BBus major unit 7

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 5**

**Autumn session**

**300056.6** Robotics
**301245.3** Final Year Project 1 (UG Engineering)

BBus professional unit 3

BBus major unit 8

**Spring session**

**301000.4** Computer Aided Engineering
**301246.4** Final Year Project 2 (UG Engineering)
**300487.5** Mechatronic Design

BBus professional unit 4

**Replaced Units**

The units listed below count towards completion of this specialisation for students who passed these units in 2019 or earlier.

301079 - Graphics 3: 3D Engineering Specifications and Visualisation

## Key Program - Robotics and Mechatronics

### *KT3171.1*

This program provides the skills necessary for the design of smart machines of all types: cruise control in automobiles, pilotless spacecraft, automated factories and medical telerobotics. The course, accompanied by an extensive and integrated hands-on laboratory program, is essentially concerned with the design of intelligent mechanical systems and automation, and includes the study of robotics, computer control, automated manufacturing, microprocessor applications and machine design. Graduates in the program acquire the combined skills of mechanical and computer/electrical engineering that are needed in leading-edge industries such as aerospace systems, the car industry, automation and robotic applications, biomedical engineering, laser systems, and building materials manufacture.

## Specialisation Structure

**Year 1**

**Autumn session**

**200237.5** Mathematics for Engineers 1
**300963.3** Engineering Physics

BBus core unit 1

BBus core unit 2

**Spring session**

**200238.3** Mathematics for Engineers 2
**300965.3** Engineering Materials

BBus core unit 3

BBus core unit 4

**Year 2**

**Autumn session**

**300027.4** Engineering Computing

BBus professional unit 1

BBus professional unit 2

BBus major unit 1

**Spring session**

**300021.4** Electrical Fundamentals
**300463.4** Fundamentals of Mechanics

BBus major unit 2

Bbus major unit 3

**Year 3**

**Autumn session**

**300035.5** Kinematics and Kinetics of Machines
**300040.4** Mechanics of Materials
**300005.4** Circuit Theory
**300018.4** Digital Systems 1

**Spring session**

**300480.4** Dynamics of Mechanical Systems
**300735.4** Automated Manufacturing
**300052.5** Power and Machines
**300044.4** Microcontrollers and PLCs

**Year 4**

**Autumn session**

**300764.3** Mechanical Design
**300763.3** Advanced Dynamics
**300025.5** Electronics

BBus major unit 4

**Spring session**

**300043.6** Mobile Robotics

BBus major unit 5

BBus major unit 6

BBus major unit 7

**Industrial Experience**

**300741.4** Industrial Experience (Engineering)

**Year 5**

**Autumn session**

**300056.6** Robotics

**301245.3** Final Year Project 1 (UG Engineering)

BBus major unit 8

BBus professional unit 3

**Spring session**

**300075.7** Instrumentation and Measurement

From Spring 2022 students are advised to select 301474 Instrumentation and Measurement

**301246.4** Final Year Project 2 (UG Engineering)
**300487.5** Mechatronic Design

BBus professional unit 4

## Key Program - Civil

### *KT7000.1*

### Location

| Campus | Mode |
|---|---|
| Online | Multi Modal |

### Specialisation Structure

Choose three of the following alternate units

**700111.4** Fluid Mechanics (WSTC AssocD)
**700115.4** Introduction to Structural Engineering (WSTC AssocD)
**700102.4** Mathematics for Engineers 2 (WSTC AssocD)
**700116.4** Mechanics of Materials (WSTC AssocD)
**700239.3** Pavement Materials and Design (WSTC AssocD)
**700245.3** Soil Mechanics (WSTC AssocD)
**700120.4** Surveying for Engineers (WSTC AssocD)

Please note: Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## Key Program - Electrical

### *KT7001.1*

### Location

| Campus | Mode |
|---|---|
| Online | Multi Modal |

### Specialisation Structure

Choose three of the following alternate units

**700243.4** Circuit Theory (WSTC AssocD)
**700240.4** Digital Systems 1 (WSTC AssocD)
**700242.3** Electronics (WSTC AssocD)
**700102.4** Mathematics for Engineers 2 (WSTC AssocD)
**700241.3** Signals and Systems (WSTC AssocD)

Please note: Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## Key Program - Mechanical

### *KT7002.1*

### Location

| Campus | Mode |
|---|---|
| Online | Multi Modal |

### Specialisation Structure

Choose three of the following units

**700111.4** Fluid Mechanics (WSTC AssocD)
**700244.3** Kinematics and Kinetics of Machines (WSTC AssocD)
**700102.4** Mathematics for Engineers 2 (WSTC AssocD)
**700116.4** Mechanics of Materials (WSTC AssocD)

## Key Program - Robotics and Mechatronics

### *KT7003.1*

### Location

| Campus | Mode |
|---|---|
| Online | Multi Modal |

### Specialisation Structure

Choose three of the following alternate units

Choose at least one of the following units

**700244.3** Kinematics and Kinetics of Machines (WSTC AssocD)
**700116.4** Mechanics of Materials (WSTC AssocD)

and choose either one or two of the following units depending on how many units have been completed from the list above.

**700243.4** Circuit Theory (WSTC AssocD)
**700240.4** Digital Systems 1 (WSTC AssocD)
**700242.3** Electronics (WSTC AssocD)
**700102.4** Mathematics for Engineers 2 (WSTC AssocD)

Please note: Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## Key Program - Mechanical

### *KT7004.1*

The Associate Degree in Engineering is a two-year program (full-time) in Engineering designed for people who have workplace experience and wish to upgrade their qualifications in Engineering and possibly continue to the full Bachelor degree program. The Associate Degree in Engineering has a common first year program for all engineering disciplines, exposing students to a wide range of experiences in the first year. In the second year students may choose from the key programs in Civil, Electrical, Mechanical or Robotics & Mechatronics. If students choose to apply to study in the the Bachelor of Engineering (Honours) after graduating from the Associate Degree in Engineering they may be given advanced standing in up to 12 units.

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Multi Modal |
| The College - Nirimba Education Precinct | Multi Modal |

### Specialisation Structure

**Choose three of the following alternate units**

| | |
|---|---|
| **700312.1** | Thermodynamics and Heat Transfer (WSTC AssocD) |

AND two units from the following units:

| | |
|---|---|
| **700116.4** | Mechanics of Materials (WSTC AssocD) |
| **700111.4** | Fluid Mechanics (WSTC AssocD) |
| **700244.3** | Kinematics and Kinetics of Machines (WSTC AssocD) |
| **700102.4** | Mathematics for Engineers 2 (WSTC AssocD) |

Please note: Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## Major - Visualisation and Graphics

### *M3091.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

Students must complete 80 credit points as follows.

**Core Units**

| | |
|---|---|
| **301074.3** | Graphics 1: 2D and 3D Industrial Design Communication |
| **301076.3** | Graphics 2: Visual Simulation |
| **301079.3** | Graphics 3: 3D Engineering Specifications and Visualisation |
| **300570.4** | Human-Computer Interaction |

**Alternate Units**

| | |
|---|---|
| **301091.3** | Graphics 4: Kinetic Narratives |
| **301092.3** | Graphics 5: Creative Computing |
| **300580.4** | Programming Fundamentals |

Choose one of

| | |
|---|---|
| **300976.2** | Technologies for Mobile Applications |
| **301088.3** | Tangible Interaction Design |

## Major - Design Management and Entrepreneurship

### *M3092.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

Students must complete 80 credit points as follows.

**Core Units**

| | |
|---|---|
| **301082.2** | Design Management 2: Operation and Supply Chain |
| **300014.4** | Design Management 3: Organisational Skills for Designers |
| **301095.2** | Sustainable Design 1: Materials and Technology |
| **301081.3** | Sustainable Design 2: Product Service Systems |

**Alternate Units**

| | |
|---|---|
| **200862.1** | Creating Change and Innovation |
| **301093.2** | Design Management 1: Process and Manufacturing |
| **301094.2** | Design Management 4: Strategy and Lean Start-Up |
| **200863.1** | Leadership and Entrepreneurship |

## Major - Design-led Innovation and Management

### *M3093.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

Students must complete 80 credit points as follows.

**Core Units**

| | |
|---|---|
| 300014.4 | Design Management 3: Organisational Skills for Designers |
| 301084.3 | Design Studio 6: Ambience, Place and Behaviour |

**Alterate Units**

| | |
|---|---|
| 200088.3 | Brand and Product Management |
| 301094.2 | Design Management 4: Strategy and Lean Start-Up |
| 200094.4 | International Marketing |
| 200083.3 | Marketing Principles |
| 101184.4 | Psychology: Human Behaviour |
| 301088.3 | Tangible Interaction Design |

## Major - Visualisation and Graphics

### *M3123.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

The Bachelor of Design and Technology is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

Students must complete 80 credit points as follows.

**Core Units**

| | |
|---|---|
| 301283.2 | Design Graphics: Presenting Innovation |
| 301287.2 | Design Graphics: Engineering Documentation |
| 301290.2 | Design Graphics: Communication for Manufacture |
| 300570.4 | Human-Computer Interaction |

**Major Alternate Units**

| | |
|---|---|
| 301308.2 | Design Practice: Sustainable Manufacturing |
| 301307.2 | Creative Digital: Robots and Avatars |
| 300580.4 | Programming Fundamentals |

Choose one of

| | |
|---|---|
| 300976.2 | Technologies for Mobile Applications |
| 301088.3 | Tangible Interaction Design |

## Major - Design Management and Entrepreneurship

### *M3124.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Multi Modal |

### Specialisation Structure

The Bachelor of Design and Technology is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

Students must complete 80 credit points as follows.

**Core Units**

| | |
|---|---|
| 301288.2 | Sustainable Materials and Smart Manufacturing |
| 301293.2 | Designing for Circular Economy (Advanced) |
| 301302.2 | Design Thinking for Competitive Advantage |
| 301301.2 | Design Thinking for Successful Brands and Products |

**Major Alternate Units**

| | |
|---|---|
| 301305.2 | New Product Innovation with IoT Data |
| 301304.2 | Start-Up Product Launch |
| 200863.1 | Leadership and Entrepreneurship |
| 200862.1 | Creating Change and Innovation |

## Major - Design-led Innovation & Management

### *M3125.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

The Bachelor of Design and Technology is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

Students must complete 80 credit points as follows.

**Core Units**

| | |
|---|---|
| 301301.2 | Design Thinking for Successful Brands and Products |
| 301295.1 | Studio: Design Synthesis Capstone |

Choose five of

| | |
|---|---|
| 200083.3 | Marketing Principles |
| 301088.3 | Tangible Interaction Design |
| 101184.4 | Psychology: Human Behaviour |
| 200094.4 | International Marketing |

**200088.3** Brand and Product Management
**301304.2** Start-Up Product Launch

## Major - Technology Entrepreneurship

### *M3126.1*

The Technology Entrepreneurship major is focused on guiding students through all stages of turning their innovative idea into a start-up company. In an entrepreneurial ecosystem, you will learn the knowledge and techniques for opportunity discovery, impact analysis, customer analysis, strategic team-building and leadership, the psychology and ethics of the start-up, funding modelling and financial analysis, growth and exit strategies. We will be helping you with defining your idea, forming a team around it, building a prototype, developing a pitch for investors and running a start-up company.

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

**Students in courses 3506, 3634 must complete 80 credit points as follows**

**300580.4** Programming Fundamentals
**100483.2** Principles of Professional Communication 1
**301165.4** Incubator 1: Innovation and Creativity for Entrepreneurship
**301206.4** Incubator 2: Start-up Essentials
**301168.2** Incubator 3: Product Development
**301169.2** Incubator 4: Commercial and Financial Setting of Entrepreneurship
**301170.3** Incubator 5: Operational Aspects of Entrepreneurship
**301171.2** Incubator 6: Funding and Start-up

**Students in courses 3639, 3684, 3687, 3688 must complete 80 credit points as follows**

**301165.4** Incubator 1: Innovation and Creativity for Entrepreneurship
**301206.4** Incubator 2: Start-up Essentials
**301168.2** Incubator 3: Product Development
**301169.2** Incubator 4: Commercial and Financial Setting of Entrepreneurship
**301170.3** Incubator 5: Operational Aspects of Entrepreneurship
**301171.2** Incubator 6: Funding and Start-up
**301172.4** Incubator 7: Growth and Exit Strategies
**200979.2** Foundations of Entrepreneurship

**Students in courses 3730, 3731, 3769 must complete 80 credit points as follows**

**301165.4** Incubator 1: Innovation and Creativity for Entrepreneurship
**301206.4** Incubator 2: Start-up Essentials
**301168.2** Incubator 3: Product Development
**301169.2** Incubator 4: Commercial and Financial Setting of Entrepreneurship
**301170.3** Incubator 5: Operational Aspects of Entrepreneurship
**301171.2** Incubator 6: Funding and Start-up
**301172.4** Incubator 7: Growth and Exit Strategies

Choose one of

**200979.2** Foundations of Entrepreneurship
**300580.4** Programming Fundamentals
**100483.2** Principles of Professional Communication 1

## Major - Architecture

### *M3127.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

Students must complete 80 credit points as follows

**Year 2**

**Autumn**

**101589.3** Cities: Introduction to Urban Studies
**301283.2** Design Graphics: Presenting Innovation

**Year 2**

**Spring**

**301198.4** Architecture Studio - Fundamentals of Digital Design

**Year 3**

**Autumn**

**301197.3** Architecture Studio - Fundamentals of Analogue Design

**Spring**

**301316.2** Architecture Studio: Urban Architecture

**Electives**

Elective recommendations are available in the course vUWS page which students will have access to after enrolling. Other electives considered in consultation with an Academic Course Advisor

## Major - Design Practice

### *M3129.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

Students must complete 80 credit points as follows

| | |
|---|---|
| 301302.2 | Design Thinking for Competitive Advantage |
| 301304.2 | Start-Up Product Launch |
| 200862.1 | Creating Change and Innovation |
| 301306.2 | Simulation in Virtual and Augmented Realities |
| 301170.3 | Incubator 5: Operational Aspects of Entrepreneurship |
| 301165.3 | Incubator 1: Innovation and Creativity for Entrepreneurship |

Choose two of

| | |
|---|---|
| 301206.4 | Incubator 2: Start-up Essentials |
| 301158.3 | Modern Construction Enterprises |
| 301168.2 | Incubator 3: Product Development |

## Major - Applied Finance

### *MT2021.1*

The Applied Finance major equips you with the expert skills to create a career as a finance specialist. In this major you will develop in-depth knowledge of finance with a focus on investment and securities, economics, and banking and finance. The core units in the Bachelor of Business will provide you a foundation of business knowledge and develop your skills in innovation, career planning, and numeracy. The Applied Finance major builds on this knowledge and skills in an applied discipline based context. Finance specialists work in a range of roles within the rapidly growing finance sector. This major fulfils the educational requirements for admission as an Associate (A Fin) of the Financial Services Institute of Australasia (FINSIA) provided the applicant is at least working in the financial services industry. All other students are eligible to apply for Affiliate membership (no postnominals apply).

### Location

| Campus | Mode |
|---|---|
| Parramatta City Campus-Macquarie Street | Internal |
| Sydney City Campus | Internal |
| Uni of Economics Ho Chi Minh City | Internal |

### Specialisation Structure

Qualification for this major requires the successful completion of 80 credit points including all of the core units listed below.

### Core Units for this Major

| | |
|---|---|
| 200818.1 | Bank Management |
| 200488.6 | Corporate Financial Management |
| 200079.3 | Derivatives |
| 200916.1 | Economic and Financial Modelling |
| 200048.3 | Financial Institutions and Markets |
| 200055.5 | International Finance |
| 200819.2 | Investment Management |
| 200921.1 | Security Analysis and Business Valuation |

### Professional Units for Careers in Money

Students undertaking the Applied Finance major are advised to take the following four units to satisfy the requirements for their professional core:

| | |
|---|---|
| 200537.4 | Economics and Finance Engagement Project |
| 200917.2 | Innovation, Enterprise and Society |
| 200914.1 | Working in Professions |

Choose one of

| | |
|---|---|
| 200052.7 | Introduction to Economic Methods |
| 200032.7 | Statistics for Business |

### Recommended Sequence

Qualification for the award of Bachelor of Business with a major in Applied Finance requires the successful completion of 240 credit points as per the recommended sequence below.

### Full-time

**Year 1**

**Autumn session**

| | |
|---|---|
| 200909.2 | Enterprise Law |
| 200910.2 | Financing Enterprises |
| 200048.3 | Financial Institutions and Markets |

Choose one of

| | |
|---|---|
| 200052.7 | Introduction to Economic Methods |
| 200032.7 | Statistics for Business |

**Spring session**

| | |
|---|---|
| 200912.1 | Enterprise Leadership |
| 200488.6 | Corporate Financial Management |
| 200911.1 | Enterprise Innovation and Markets |

And one elective

**Year 2**

**Autumn session**

| | |
|---|---|
| 200819.2 | Investment Management |
| 200914.1 | Working in Professions |

And two electives

**Spring session**

**200916.1** Economic and Financial Modelling
**200055.5** International Finance

And two electives

**Year 3**

**Autumn session**

**200818.1** Bank Management
**200079.3** Derivatives
**200917.2** Innovation, Enterprise and Society

And one elective

**Spring session**

**200921.1** Security Analysis and Business Valuation

Enterprise Engaged Unit

**200537.4** Economics and Finance Engagement Project

And two electives

## Part-time

**Year 1**

**Autumn session**

**200909.2** Enterprise Law
**200048.3** Financial Institutions and Markets

**Spring session**

**200911.1** Enterprise Innovation and Markets
**200910.2** Financing Enterprises

**Year 2**

**Autumn session**

**200488.6** Corporate Financial Management

Choose one of

**200052.7** Introduction to Economic Methods
**200032.7** Statistics for Business

**Spring session**

**200912.1** Enterprise Leadership

And one elective

**Year 3**

**Autumn session**

**200819.2** Investment Management

And one elective

**Spring session**

**200914.1** Working in Professions

And one elective

**Year 4**

**Autumn session**

**200055.5** International Finance

And one elective

**Spring session**

**200916.1** Economic and Financial Modelling

And one elective

**Year 5**

**Autumn session**

**200818.1** Bank Management
**200917.2** Innovation, Enterprise and Society

**Spring session**

**200079.3** Derivatives

And one elective

**Year 6**

**Autumn session**

Enterprise Engaged Unit

**200537.4** Economics and Finance Engagement Project

And one elective

**Spring session**

**200921.1** Security Analysis and Business Valuation

And one elective

## Major - Economics

### *MT2022.1*

The Economics major provides a broad pluralist perspective on fundamental aspects of relationships between individuals, firms, institutions and countries. Students will learn how economies function and how public policy and the way organisations behave affect diverse social, economic and environmental problems. Students are introduced to a wide array of competing economic theories, so that they are critically informed about the ways in which they can transform the world. A major in Economics prepares students to be active participants in addressing the wide range of problems faced by governments, social organisations and the business community in the domestic and international economies. Students who study economics can expect to develop their analytical and problem solving skills and to be intellectually challenged, whether they view the discipline as providing specific vocational skills or as an area of academic and intellectual interest to them. An Economics major is very highly regarded in the business world and opens up a very large range of career prospects in general business, finance and the public sector.

## Location

| Campus | Mode |
|---|---|
| Parramatta City Campus-Macquarie Street | Internal |

## Specialisation Structure

Qualification for the Economics major requires the successful completion of 80 credit points including all of the core units listed below.

## Core Units for this Major

**201099.1** Consumers, Firms and Markets
**200923.1** Corporations, Economic Power and Policy
**200924.3** Cost Benefit Analysis
**200916.1** Economic and Financial Modelling
**200815.2** Globalisation and Sustainability
**200925.1** Growth, Cycles and Crises
**200926.1** Macroeconomic Measures and Models
**200549.3** The Australian Macroeconomy

## Professional Units for Careers in Money

Students undertaking the Economics major are advised to take the following four units to satisfy the requirements for their professional core:

**200537.4** Economics and Finance Engagement Project
**200917.2** Innovation, Enterprise and Society
**200914.1** Working in Professions

Choose one of

**200052.7** Introduction to Economic Methods
**200032.7** Statistics for Business

## Recommended Sequence

Qualification for the award of Bachelor of Business with a major in Economics requires the successful completion of 240 credit points as per the recommended sequence below.

## Full-time

### Year 1

#### Autumn session

**200909.2** Enterprise Law
**200910.2** Financing Enterprises
**201099.1** Consumers, Firms and Markets

Choose one of

**200052.7** Introduction to Economic Methods
**200032.7** Statistics for Business

#### Spring session

**200549.3** The Australian Macroeconomy
**200912.1** Enterprise Leadership
**200911.1** Enterprise Innovation and Markets

And one elective

### Year 2

#### Autumn session

**200924.3** Cost Benefit Analysis
**200914.1** Working in Professions

And two electives

#### Spring session

**200916.1** Economic and Financial Modelling
**200926.1** Macroeconomic Measures and Models

And two electives

### Year 3

#### Autumn session

**200815.2** Globalisation and Sustainability
**200923.1** Corporations, Economic Power and Policy
**200917.2** Innovation, Enterprise and Society

And one elective

#### Spring session

**200925.1** Growth, Cycles and Crises

Enterprise Engaged Unit

**200537.4** Economics and Finance Engagement Project

And two electives

## Part-time

### Year 1

#### Autumn session

**200909.2** Enterprise Law
**200911.1** Enterprise Innovation and Markets

#### Spring session

**200910.2** Financing Enterprises
**201099.1** Consumers, Firms and Markets

### Year 2

#### Autumn session

**200549.3** The Australian Macroeconomy

Choose one of

**200052.7** Introduction to Economic Methods
**200032.7** Statistics for Business

#### Spring session

**200912.1** Enterprise Leadership

And one elective

### Year 3

#### Autumn session

**200924.3** Cost Benefit Analysis

And one elective

**Spring session**

**200914.1** Working in Professions

And one elective

**Year 4**

**Autumn session**

**200926.1** Macroeconomic Measures and Models

And one elective

**Spring session**

**200916.1** Economic and Financial Modelling

And one elective

**Year 5**

**Autumn session**

**200815.2** Globalisation and Sustainability
**200917.2** Innovation, Enterprise and Society

**Spring session**

**200923.1** Corporations, Economic Power and Policy

And one elective

**Year 6**

**Autumn session**

Enterprise Engaged Unit

**200537.4** Economics and Finance Engagement Project

And one elective

**Spring session**

**200925.1** Growth, Cycles and Crises

And one elective

## Replaced Units

The unit listed below count towards completion of this course for students who passed this unit in 2021 or earlier.

200922 - Consumers, Firms and Markets, replaced by 201099 Consumers, Firms and Markets

## Major - Hospitality Management

### *MT2023.1*

The Hospitality Management major is designed to prepare you for a career that goes beyond providing customer 'service' and focuses on providing customer 'experience'. This major equips you with the expert skills required to effectively and efficiently manage hotels, resorts, clubs, food-service enterprises or other service-oriented businesses. The Hospitality Management major units focus on hospitality operations management, planning and design of hospitality facilities, and business management, with opportunities to undertake industry-related projects. Hospitality Management leads to exciting and varied careers across a range of local and international sectors.

## Location

| Campus | Mode |
|---|---|
| Parramatta City Campus-Macquarie Street | Internal |
| Sydney City Campus | Internal |

## Specialisation Structure

Qualification for this major requires the successful completion of 80 credit points including all of the core units listed below.

## Core Units for this Major

**200708.2** Hospitality Industry
**200584.3** Hospitality Management Operations
**200273.5** Managing Service and Experience
**200709.2** Managing the Accommodation Experience
**200710.4** Managing the Food and Beverage Experience
**200148.2** Planning and Design of Hospitality Facilities
**200707.3** Service Industry Studies
**200742.2** Sport and Hospitality Event Management

## Professional Units for Careers in Markets

Students undertaking the Hospitality Management major are advised to take the following four units to satisfy the requirements for their professional core:

**200918.1** Design Thinking for Creativity
**200561.4** Hospitality Management Applied Project
**200032.7** Statistics for Business
**200915.3** The Service Enterprise

## Recommended Sequence

Qualification for the award of Bachelor of Business with a major in Hospitality Management requires the successful completion of 240 credit points as per the recommended sequence below.

## Full-time

**Year 1**

**Autumn session**

**200911.1** Enterprise Innovation and Markets
**200912.1** Enterprise Leadership
**200710.4** Managing the Food and Beverage Experience
**200032.7** Statistics for Business

**Spring session**

**200909.2** Enterprise Law
**200910.2** Financing Enterprises
**200709.2** Managing the Accommodation Experience

And one elective

**Year 2**

**Autumn session**

**200915.3** The Service Enterprise
**200707.3** Service Industry Studies

And two electives

**Spring session**

**200742.2** Sport and Hospitality Event Management
**200584.3** Hospitality Management Operations
**200918.1** Design Thinking for Creativity

And one elective

**Year 3**

**Autumn session**

**200273.5** Managing Service and Experience
**200708.2** Hospitality Industry

And two electives

**Spring session**

**200148.2** Planning and Design of Hospitality Facilities

Enterprise Engaged Unit:

**200561.4** Hospitality Management Applied Project

And two electives

## Part-time

**Year 1**

**Autumn session**

**200911.1** Enterprise Innovation and Markets
**200909.2** Enterprise Law

**Spring session**

**200910.2** Financing Enterprises
**200032.7** Statistics for Business

**Year 2**

**Autumn session**

**200710.4** Managing the Food and Beverage Experience
**200709.2** Managing the Accommodation Experience

**Spring session**

**200912.1** Enterprise Leadership

And one elective

**Year 3**

**Autumn session**

**200915.3** The Service Enterprise

And one elective

**Spring session**

**200742.2** Sport and Hospitality Event Management

And one elective

**Year 4**

**Autumn session**

**200707.3** Service Industry Studies

And one elective

**Spring session**

**200584.3** Hospitality Management Operations
**200148.2** Planning and Design of Hospitality Facilities

**Year 5**

**Autumn session**

**200708.2** Hospitality Industry

And one elective

**Spring session**

**200918.1** Design Thinking for Creativity

And one elective

**Year 6**

**Autumn session**

**200273.5** Managing Service and Experience

And one elective

**Spring session**

Enterprise Engaged Unit:

**200561.4** Hospitality Management Applied Project

And one elective

## Major - Human Resource Management

### *MT2024.1*

This major (including online) is accredited with the Australian Human Resources Institute (AHRI). The Human Resource Management Major is designed for people who seek careers in human resource management and industrial relations. Graduates' careers focus on enhancing the value of human and social capital through supporting employee engagement for many different kinds of organisations, market-oriented and community-oriented organisations and many kinds of people. The teaching philosophy is based on knowledge in action, a fusion of the Australia Human Resource Institute's capabilities for HR professionals and the Western Sydney University Graduate Attributes designed to secure success. An aim of the program is to instil those values and attitudes that can support leaders in judgements about balancing the pursuit of organisational objectives with creating opportunities for

developing people's capacities and careers. The perspectives are local and international, with an emphasis on the value of cultural and demographic diversity. Graduates have knowledge of how leadership and management of people can support organisational objectives and create organisational opportunities. This capacity comes from grounding in human resource management and industrial relations practice using contemporary law and research in applied projects. Students combine this with an education in the pressures organisations experience in inter-disciplinary subjects focused on money, markets and management. That is, graduates develop commercial acumen and appreciate the competing interests around work, aware of trends locally and internationally. Throughout the program, students are challenged to develop and demonstrate communication, cultural, and analytic skills required to be innovative and responsible team-members and leaders.

## Location

| Campus | Mode |
|---|---|
| Bankstown Campus | Internal |
| Campbelltown Campus | Internal |
| Parramatta City Campus-Macquarie Street | Internal |
| WSU Online | Multi Modal |

## Specialisation Structure

Qualification for this major requires the successful completion of 80 credit points including all of the core units listed below.

## Core Units for this Major

**200614.3** Enterprise Industrial Relations
**200740.5** Human Resource and Industrial Relations Strategy
**200859.1** Human Resource Development
**200621.3** International Human Resource Management
**200300.2** Managing People at Work
**200613.3** Negotiation, Bargaining and Advocacy
**200860.1** People, Work and Society
**200739.2** Reward and Performance Management

## Professional Units for Careers in Management

Students undertaking the Human Resource Management major are advised to take the following four units to satisfy the requirements for their professional core:

**200919.1** Innovation and Professional Practice
**301123.2** Management Analytics
**200376.4** Managing and Developing Careers
**200575.3** Processes and Evaluation in Employment Relations

Note: Students enrolled in MT2024 Human Resource Management are advised that the enterprise engaged unit 200575 Processes and Evaluation in Employment Relations is required for accreditation purposes.

## Recommended Sequence

Qualification for the award of Bachelor of Business with a major in Human Resource Management requires the successful completion of 240 credit points as per the recommended sequence below.

## Full-time

### Year 1

#### Autumn session

**200910.2** Financing Enterprises
**200912.1** Enterprise Leadership
**200909.2** Enterprise Law
**200300.2** Managing People at Work

#### Spring session

**200911.1** Enterprise Innovation and Markets
**200859.1** Human Resource Development
**301123.2** Management Analytics

And one elective

### Year 2

#### Autumn session

**200614.3** Enterprise Industrial Relations
**200621.3** International Human Resource Management

And two electives

#### Spring session

**200739.2** Reward and Performance Management
**200376.4** Managing and Developing Careers

And two electives

### Year 3

#### Autumn session

**200860.1** People, Work and Society
**200613.3** Negotiation, Bargaining and Advocacy
**200919.1** Innovation and Professional Practice

And one elective

#### Spring session

**200740.5** Human Resource and Industrial Relations Strategy

Enterprise Engaged Unit

**200575.3** Processes and Evaluation in Employment Relations

And two electives

## Part-time

### Year 1

#### Autumn session

**200910.2** Financing Enterprises
**200912.1** Enterprise Leadership

#### Spring session

**301123.2** Management Analytics

**200911.1** Enterprise Innovation and Markets

**Year 2**

**Autumn session**

**200909.2** Enterprise Law
**200300.2** Managing People at Work

**Spring session**

**200859.1** Human Resource Development

And one elective

**Year 3**

**Autumn session**

**200614.3** Enterprise Industrial Relations

And one elective

**Spring session**

**200376.4** Managing and Developing Careers

And one elective

**Year 4**

**Autumn session**

**200621.3** International Human Resource Management

And one elective

**Spring session**

**200739.2** Reward and Performance Management

And one elective

**Year 5**

**Autumn session**

**200860.1** People, Work and Society

And one elective

**Spring session**

**200919.1** Innovation and Professional Practice

And one elective

**Year 6**

**Autumn session**

**200613.3** Negotiation, Bargaining and Advocacy

And one elective

**Spring session**

**200740.5** Human Resource and Industrial Relations Strategy

Enterprise Engaged Unit

**200575.3** Processes and Evaluation in Employment Relations

## Major - International Business

### *MT2025.1*

The global economy is becoming increasingly important for organisations seeking out new opportunities to expand their customer base and develop partnerships. Managers who are well versed in the needs of doing business internationally and who can exploit these opportunities will therefore play an integral role in any such corporation. Building on a solid foundation in domestic business education, including global sustainability, international business strategy, managing in a global environment, and international marketing, this major equips graduates with the detailed knowledge of the international dimension of business and the necessary understanding of the workings of that market system.

### Location

| Campus | Mode |
|---|---|
| Parramatta City Campus-Macquarie Street | Internal |
| Sydney City Campus | Internal |

### Specialisation Structure

Qualification for this major requires the successful completion of 80 credit points including all of the core units listed below.

### Core Units for this Major

**200589.3** Export Strategy and Applications
**200815.2** Globalisation and Sustainability
**200626.3** International Business Strategy
**200094.4** International Marketing
**200591.2** Introduction to International Business
**200863.1** Leadership and Entrepreneurship
**200864.2** Managing in the Global Environment
**200098.4** The Markets of Asia

### Professional Units for Careers in Markets

Students undertaking the International Business major are advised to take the following four units to satisfy the requirements for their professional core:

**200918.1** Design Thinking for Creativity
**200590.2** International Business Project
**200032.7** Statistics for Business
**200915.3** The Service Enterprise

### Recommended Sequence

Qualification for the award of Bachelor of Business with a major in International Business requires the successful completion of 240 credit points as per the recommended sequence below.

## Full-time

### Year 1

#### Autumn session

**200911.1** Enterprise Innovation and Markets
**200912.1** Enterprise Leadership
**200591.2** Introduction to International Business
**200032.7** Statistics for Business

#### Spring session

**200909.2** Enterprise Law
**200910.2** Financing Enterprises
**200864.2** Managing in the Global Environment

And one elective

### Year 2

#### Autumn session

**200915.3** The Service Enterprise
**200815.2** Globalisation and Sustainability

And two electives

#### Spring session

**200589.3** Export Strategy and Applications
**200098.4** The Markets of Asia

And two electives

### Year 3

#### Autumn session

**200094.4** International Marketing
**200918.1** Design Thinking for Creativity
**200863.1** Leadership and Entrepreneurship

And one elective

#### Spring session

**200626.3** International Business Strategy

Enterprise Engaged Unit

**200590.2** International Business Project

And two electives

## Part-time

### Year 1

#### Autumn session

**200911.1** Enterprise Innovation and Markets
**200909.2** Enterprise Law

#### Spring session

**200910.2** Financing Enterprises
**200912.1** Enterprise Leadership

### Year 2

#### Autumn session

**200591.2** Introduction to International Business
**200032.7** Statistics for Business

#### Spring session

**200864.2** Managing in the Global Environment

And one elective

### Year 3

#### Autumn session

**200815.2** Globalisation and Sustainability

And one elective

#### Spring session

**200915.3** The Service Enterprise

And one elective

### Year 4

#### Autumn session

**200589.3** Export Strategy and Applications

And one elective

#### Spring session

**200098.4** The Markets of Asia

And one elective

### Year 5

#### Autumn session

**200094.4** International Marketing
**200863.1** Leadership and Entrepreneurship

#### Spring session

**200918.1** Design Thinking for Creativity

And one elective

### Year 6

#### Autumn session

**200626.3** International Business Strategy

And one elective

#### Spring session

Enterprise Engaged Unit

**200590.2** International Business Project

And one elective

## Major - Management

### *MT2026.1*

The Management major equips you with the expert skills to create a career as a management specialist. You will be prepared to succeed in a range of roles in contemporary private, public, and not-for-profit organisations in Australia and abroad. In this major you will develop strategic management knowledge to enable effective organisational decision making. The units in this major focus on organisational learning and development and behaviour, operations management, leadership and entrepreneurship, change and innovation, and policy. You can look forward to a range of careers in the broad and complex field of management.

### Location

| Campus | Mode |
|---|---|
| Bankstown Campus | Internal |
| Campbelltown Campus | Internal |
| Parramatta City Campus-Macquarie Street | Internal |
| Sydney City Campus | Internal |
| WSU Online | Multi Modal |

### Specialisation Structure

Qualification for this major requires the successful completion of 80 credit points including all of the core units listed below.

### Core Units for this Major

**200158.4** Business, Society and Policy
**200862.1** Creating Change and Innovation
**200863.1** Leadership and Entrepreneurship
**200864.2** Managing in the Global Environment
**200865.2** Managing Operations
**200585.4** Organisational Behaviour
**200157.4** Organisational Learning and Development
**200587.2** Strategic Management

### Professional Units for Careers in Management

Students undertaking the Management major are advised to take the following four units to satisfy the requirements for their professional core:

**200568.3** Contemporary Management Issues
**200919.1** Innovation and Professional Practice
**301123.2** Management Analytics
**200376.4** Managing and Developing Careers

### Recommended Sequence

Qualification for the award of Bachelor of Business with a major in Management requires the successful completion of 240 credit points as per the recommended sequence below.

### Full-time

**Year 1**

**Autumn session**

**200910.2** Financing Enterprises
**200912.1** Enterprise Leadership
**200911.1** Enterprise Innovation and Markets
**200585.4** Organisational Behaviour

**Spring session**

**200909.2** Enterprise Law
**301123.2** Management Analytics
**200864.2** Managing in the Global Environment

And one elective

**Year 2**

**Autumn session**

**200158.4** Business, Society and Policy
**200862.1** Creating Change and Innovation

And two electives

**Spring session**

**200865.2** Managing Operations
**200157.4** Organisational Learning and Development
**200376.4** Managing and Developing Careers

And one elective

**Year 3**

**Autumn session**

**200863.1** Leadership and Entrepreneurship
**200919.1** Innovation and Professional Practice

And two electives

**Spring session**

**200587.2** Strategic Management

Enterprise Engaged Unit

**200568.3** Contemporary Management Issues

And two electives

### Part-time

**Year 1**

**Autumn session**

**200910.2** Financing Enterprises
**200912.1** Enterprise Leadership

**Spring session**

**200909.2** Enterprise Law
**301123.2** Management Analytics

**Year 2**

**Autumn session**

**200911.1** Enterprise Innovation and Markets
**200585.4** Organisational Behaviour

**Spring session**

**200864.2** Managing in the Global Environment

And one elective

**Year 3**

**Autumn session**

**200158.4** Business, Society and Policy

And one elective

**Spring session**

**200865.2** Managing Operations

And one elective

**Year 4**

**Autumn session**

**200862.1** Creating Change and Innovation

And one elective

**Spring session**

**200376.4** Managing and Developing Careers

And one elective

**Year 5**

**Autumn session**

**200863.1** Leadership and Entrepreneurship

And one elective

**Spring session**

**200157.4** Organisational Learning and Development

And one elective

**Year 6**

**Autumn session**

**200919.1** Innovation and Professional Practice

And one elective

**Spring session**

**200587.2** Strategic Management

Enterprise Engaged Unit

**200568.3** Contemporary Management Issues

## Major - Marketing

### *MT2027.1*

Marketing focuses on the exchange process built around understanding and satisfying the needs and wants of customers. Often this is associated as doing business within a highly competitive business environment, yet marketing strategy is also important for government and not-for-profit organisations. This major introduces students to the core concepts of marketing theory, consumer behaviour, marketing communications, brand management, and marketing strategy. Graduates are equipped with the skills for marketing careers in a range of diverse industries across an international platform. This major satisfies the educational requirements for recognition as a Certified Practising Marketer and eligibility for membership of the Australian Marketing Institute.

### Location

| Campus | Mode |
|---|---|
| Bankstown Campus | Internal |
| Campbelltown Campus | Internal |
| Parramatta City Campus-Macquarie Street | Internal |
| Sydney City Campus | Internal |
| Uni of Economics Ho Chi Minh City | Internal |
| WSU Online | Multi Modal |

### Specialisation Structure

Qualification for this major requires the successful completion of 80 credit points including all of the core units listed below.

### Core Units for this Major

**200088.3** Brand and Product Management
**200091.4** Business to Business Marketing
**200084.2** Consumer Behaviour
**200094.4** International Marketing
**200086.3** Marketing Communications
**200083.3** Marketing Principles
**200592.2** Marketing Research
**200087.3** Strategic Marketing Management

### Professional Units for Careers in Markets

Students undertaking the Marketing major are advised to take the following four units to satisfy the requirements for their professional core:

**200918.1** Design Thinking for Creativity
**200096.3** Marketing Planning Project
**200032.7** Statistics for Business
**200915.3** The Service Enterprise

## Recommended Sequence

Qualification for the award of Bachelor of Business with a major in Marketing requires the successful completion of 240 credit points as per the recommended sequence below.

## Full-time

### Year 1

#### Autumn session

200911.1 Enterprise Innovation and Markets
200912.1 Enterprise Leadership
200083.3 Marketing Principles
200032.7 Statistics for Business

#### Spring session

200910.2 Financing Enterprises
200909.2 Enterprise Law
200084.2 Consumer Behaviour

And one elective

### Year 2

#### Autumn session

200915.3 The Service Enterprise
200086.3 Marketing Communications

And two electives

#### Spring session

200088.3 Brand and Product Management
200592.2 Marketing Research

And two electives

### Year 3

#### Autumn session

200091.4 Business to Business Marketing
200918.1 Design Thinking for Creativity
200094.4 International Marketing

And one elective

#### Spring session

200087.3 Strategic Marketing Management

Enterprise Engaged Unit

200096.3 Marketing Planning Project

And two electives

## Part-time

### Year 1

#### Autumn session

200911.1 Enterprise Innovation and Markets
200909.2 Enterprise Law

#### Spring session

200083.3 Marketing Principles
200032.7 Statistics for Business

### Year 2

#### Autumn session

200912.1 Enterprise Leadership
200084.2 Consumer Behaviour

#### Spring session

200910.2 Financing Enterprises

And one elective

### Year 3

#### Autumn session

200915.3 The Service Enterprise

And one elective

#### Spring session

200086.3 Marketing Communications

And one elective

### Year 4

#### Autumn session

200592.2 Marketing Research

And one elective

#### Spring session

200088.3 Brand and Product Management

And one elective

### Year 5

#### Autumn session

200091.4 Business to Business Marketing

And one elective

#### Spring session

200918.1 Design Thinking for Creativity

And one elective

### Year 6

#### Autumn session

200094.4 International Marketing
200087.3 Strategic Marketing Management

#### Spring session

Enterprise Engaged Unit

200096.3 Marketing Planning Project

And one elective

## Major - Sport Management

### *MT2029.1*

The Sport Management major is designed for people who seek careers in Australian and international Sport management. Specialist units provide students with a capacity to understand and function within the increasingly dedicated context in which sport is played, organised and managed. Students who complete this major will be equipped with the skills and knowledge to manage sport experiences pertaining to globalisation and emerging contemporary issues in sport. Graduates find career employment at all levels of government as well as within the private sector for both commercial and non-commercial organisations. Positions include project management of facilities and events, management and coordination of leisure, sport and civic event departments, sport marketing, player management and sport public relations, elite sport development, sport and leisure programming.

### Location

| Campus | Mode |
|---|---|
| Campbelltown Campus | Internal |
| Parramatta City Campus-Macquarie Street | Internal |

### Specialisation Structure

Qualification for this major requires the successful completion of 80 credit points including all of the core units listed below.

### Core Units for this Major

**400335.3** Contemporary Issues in Sport Management
**200273.5** Managing Service and Experience
**200707.3** Service Industry Studies
**200742.2** Sport and Hospitality Event Management
**200664.2** Sport Management Internship
**200754.2** Sports Management - Planning and Development
**200665.2** Strategic Communication in Sport
**200705.2** The World of Sport Management

### Professional Units for Careers in Markets

Students undertaking the Sport Management major are advised to take the following four units to satisfy the requirements for their professional core:

**200918.1** Design Thinking for Creativity
**200751.2** Sport Management Applied Project
**200032.7** Statistics for Business
**200915.3** The Service Enterprise

### Recommended Sequence

Qualification for the award of Bachelor of Business with a major in Sport Management requires the successful completion of 240 credit points as per the recommended sequence below.

### Full-time

**Year 1**

**Autumn session**

**200911.1** Enterprise Innovation and Markets
**200912.1** Enterprise Leadership
**200705.2** The World of Sport Management
**200032.7** Statistics for Business

**Spring session**

**200910.2** Financing Enterprises
**200909.2** Enterprise Law
**200665.2** Strategic Communication in Sport

And one elective

**Year 2**

**Autumn session**

**200915.3** The Service Enterprise
**200707.3** Service Industry Studies

And two electives

**Spring session**

**200742.2** Sport and Hospitality Event Management
**200664.2** Sport Management Internship
**200918.1** Design Thinking for Creativity

And one elective

**Year 3**

**Autumn session**

**200754.2** Sports Management - Planning and Development
**200273.5** Managing Service and Experience

And two electives

**Spring session**

**400335.3** Contemporary Issues in Sport Management

Enterprise Engaged Unit:

**200751.2** Sport Management Applied Project

And two electives

### Part-time

**Year 1**

**Autumn session**

**200911.1** Enterprise Innovation and Markets
**200909.2** Enterprise Law

**Spring session**

**200910.2** Financing Enterprises
**200912.1** Enterprise Leadership

**Year 2**

**Autumn session**

**200705.2** The World of Sport Management
**200032.7** Statistics for Business

**Spring session**

**200665.2** Strategic Communication in Sport

And one elective

**Year 3**

**Autumn session**

**200915.3** The Service Enterprise

And one elective

**Spring session**

**200742.2** Sport and Hospitality Event Management

And one elective

**Year 4**

**Autumn session**

**200707.3** Service Industry Studies

And one elective

**Spring session**

**200918.1** Design Thinking for Creativity

And one elective

**Year 5**

**Autumn session**

**200754.2** Sports Management - Planning and Development

And one elective

**Spring session**

**200664.2** Sport Management Internship

And one elective

**Year 6**

**Autumn session**

**200273.5** Managing Service and Experience

And one elective

**Spring session**

**400335.3** Contemporary Issues in Sport Management

Enterprise Engaged Unit:

**200751.2** Sport Management Applied Project

## Major - Hospitality Management

### *MT2035.1*

The Hospitality Management major is designed to prepare you for a career that goes beyond providing customer 'service' and focuses on providing customer 'experience'. This major equips you with the expert skills required to effectively and efficiently manage hotels, resorts, clubs, food-service enterprises or other service-oriented businesses. The Hospitality Management major units focus on hospitality operations management, planning and design of hospitality facilities, and business management, with opportunities to undertake industry-related projects. Hospitality Management leads to exciting and varied careers across a range of local and international sectors.

### Location

| Campus | Mode |
|---|---|
| Parramatta City Campus-Macquarie Street | Internal |
| Sydney City Campus | Internal |

### Specialisation Structure

Qualification for this major requires the successful completion of 80 credit points including all of the core units listed below.

### Core Units for this Major

**200992.2** Food and Beverage Management
**200995.2** Hospitality and Tourism in Practice
**200989.2** Hospitality Places and Spaces
**200994.2** Hospitality Profitability and Entrepreneurship
**200991.2** Service Industry Analytics
**200990.1** Special Event Management
**200993.2** The Accommodation Industry
**200988.2** The Business of Hospitality

### Professional Units for Careers in Markets

Students undertaking the Hospitality Management major are advised to take the following four units to satisfy the requirements for their professional core:

**200918.1** Design Thinking for Creativity
**200561.4** Hospitality Management Applied Project
**200032.7** Statistics for Business
**200915.3** The Service Enterprise

### Recommended Sequence

Qualification for the award of Bachelor of Business with a major in Hospitality Management requires the successful completion of 240 credit points as per the recommended sequence below.

### Full-time

**Year 1**

**Autumn session**

**200911.1** Enterprise Innovation and Markets
**200912.1** Enterprise Leadership
**200988.2** The Business of Hospitality
**200032.7** Statistics for Business

**Spring session**

**200909.2** Enterprise Law
**200910.2** Financing Enterprises
**200992.2** Food and Beverage Management

And one elective

**Year 2**

**Autumn session**

**200915.3** The Service Enterprise
**200993.2** The Accommodation Industry
**200990.1** Special Event Management

And one elective

**Spring session**

**200989.2** Hospitality Places and Spaces
**200918.1** Design Thinking for Creativity

And two electives

**Year 3**

**Autumn session**

**200991.2** Service Industry Analytics
**200994.2** Hospitality Profitability and Entrepreneurship

And two electives

**Spring session**

**200995.2** Hospitality and Tourism in Practice

Enterprise Engaged Unit

**200561.4** Hospitality Management Applied Project

And two electives

## Part-time

**Year 1**

**Autumn session**

**200911.1** Enterprise Innovation and Markets
**200909.2** Enterprise Law

**Spring session**

**200910.2** Financing Enterprises
**200032.7** Statistics for Business

**Year 2**

**Autumn session**

**200988.2** The Business of Hospitality
**200912.1** Enterprise Leadership

**Spring session**

**200992.2** Food and Beverage Management

And one elective

**Year 3**

**Autumn session**

**200915.3** The Service Enterprise
**200993.2** The Accommodation Industry

**Spring session**

**200994.2** Hospitality Profitability and Entrepreneurship

And one elective

**Year 4**

**Autumn session**

**200990.1** Special Event Management

And one elective

**Spring session**

**200989.2** Hospitality Places and Spaces

And one elective

**Year 5**

**Autumn session**
Two electives

**Spring session**

**200918.1** Design Thinking for Creativity

And one elective

**Year 6**

**Autumn session**

**200991.2** Service Industry Analytics

And one elective

**Spring session**

**200995.2** Hospitality and Tourism in Practice

Enterprise Engaged Unit

**200561.4** Hospitality Management Applied Project

## Major - Sport Management

### *MT2036.1*

The Sport Management major is designed for people who seek careers in Australian and international Sport management. Specialist units provide students with a capacity to understand and function within the increasingly dedicated context in which sport is played, organised and

managed. Students who complete this major will be equipped with the skills and knowledge to manage sport experiences pertaining to globalisation and emerging contemporary issues in sport. Graduates find career employment at all levels of government as well as within the private sector for both commercial and non-commercial organisations. Positions include project management of facilities and events, management and coordination of leisure, sport and civic event departments, sport marketing, player management and sport public relations, elite sport development, sport and leisure programming.

## Location

| Campus | Mode |
|---|---|
| Campbelltown Campus | Internal |
| Parramatta City Campus-Macquarie Street | Internal |

## Specialisation Structure

Qualification for this major requires the successful completion of 80 credit points including all of the core units listed below.

## Core Units for this Major

**200997.1** Developing Sport Professionals
**201001.1** Our Sporting Future
**200991.2** Service Industry Analytics
**200990.1** Special Event Management
**201079.1** Sport and Society
**200996.1** Sport Entertainment
**200998.1** Strategic Sport Leadership
**201000.1** The World of Sport Business

Note: From 2021 unit 200999 Sport and Society replaced by 201079 Sport and Society.

## Professional Units for Careers in Markets

Students undertaking the Sport Management major are advised to take the following four units to satisfy the requirements for their professional core:

**200918.1** Design Thinking for Creativity
**200751.2** Sport Management Applied Project
**200032.7** Statistics for Business
**200915.3** The Service Enterprise

## Recommended Sequence

Qualification for the award of Bachelor of Business with a major in Sport Management requires the successful completion of 240 credit points as per the recommended sequence below.

## Full-time

### Year 1

#### Autumn session

**200911.1** Enterprise Innovation and Markets
**200912.1** Enterprise Leadership
**201000.1** The World of Sport Business
**200032.7** Statistics for Business

#### Spring session

**200910.2** Financing Enterprises
**200909.2** Enterprise Law
**200996.1** Sport Entertainment

And one elective

### Year 2

#### Autumn session

**200915.3** The Service Enterprise
**201079.1** Sport and Society
**200990.1** Special Event Management

And one elective

#### Spring session

**200997.1** Developing Sport Professionals
**200918.1** Design Thinking for Creativity

And two electives

### Year 3

#### Autumn session

**200998.1** Strategic Sport Leadership
**200991.2** Service Industry Analytics

And two electives

#### Spring session

**201001.1** Our Sporting Future

Enterprise Engaged Unit

**200751.2** Sport Management Applied Project

And two electives

## Part-time

### Year 1

#### Autumn session

**200911.1** Enterprise Innovation and Markets
**200909.2** Enterprise Law

#### Spring session

**200910.2** Financing Enterprises
**200912.1** Enterprise Leadership

### Year 2

#### Autumn session

**201000.1** The World of Sport Business
**200032.7** Statistics for Business

#### Spring session

**200996.1** Sport Entertainment

And one elective

**Year 3**

**Autumn session**

**200915.3** The Service Enterprise
**201079.1** Sport and Society

**Spring session**

Two electives

**Year 4**

**Autumn session**

**200990.1** Special Event Management

And one elective

**Spring session**

**200918.1** Design Thinking for Creativity

And one elective

**Year 5**

**Autumn session**

**200998.1** Strategic Sport Leadership

And one elective

**Spring session**

**200997.1** Developing Sport Professionals

And one elective

**Year 6**

**Autumn session**

**200991.2** Service Industry Analytics

And one elective

**Spring session**

**201001.1** Our Sporting Future

Enterprise Engaged Unit

**200751.2** Sport Management Applied Project

## Replaced Units

The core unit listed below counts towards completion of this course for students who passed this unit in 2020 or earlier.

200999 - Sport and Society

## Major - Marketing

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### *MT2040.1*

Contemporary marketing uses strategies and technologies to create significant customer relationships and brand experiences. Through an in-depth understanding of the marketing field including the challenges of global forces, new technologies and changing customer demographics, students develop practical skills that contribute to improving organisational performance. The major is based on industry expectations and students work on industry-based projects and case studies equipping them to take on roles across numerous organisations including in digital marketing, campaign strategies, business and data analytics. This major satisfies the educational requirements for recognition as a Certified Practising Marketer and eligibility for student membership of the Australian Marketing Institute and The Research Society.

## Location

| Campus | Mode |
|---|---|
| Bankstown Campus | Internal |
| Campbelltown Campus | Internal |
| Parramatta Campus - Victoria Road | External |
| Parramatta City Campus-Macquarie Street | Internal |
| Sydney City Campus | Internal |
| Uni of Economics Ho Chi Minh City | Internal |
| WSU Online | Multi Modal |

## Specialisation Structure

Qualification for this major requires the successful completion of 80 credit points including all of the core units listed below.

## Core Units for this Major

**200083.3** Marketing Principles
**201082.1** Customer Experience Fundamentals
**201086.1** Marketing and Digital Communications
**201083.1** Strategic Brand Management
**201084.1** Customer Insights
**200087.3** Strategic Marketing Management
**201085.1** Fundamentals of Marketing Analytics
**201087.1** Omnichannel Marketing

## Professional Units for Careers in Markets

Students undertaking the Marketing major are advised to take the following four units to satisfy the requirements for their professional core:

**200918.1** Design Thinking for Creativity
**200096.3** Marketing Planning Project
**200032.7** Statistics for Business
**200915.3** The Service Enterprise

## Recommended Sequence

Qualification for the award of Bachelor of Business with a major in Marketing requires the successful completion of 240 credit points as per the recommended sequence below.

## Full-time

**Year 1**

**Autumn session**

**200911.1** Enterprise Innovation and Markets
**200912.1** Enterprise Leadership

200083.3 Marketing Principles
200032.7 Statistics for Business

**Spring session**

200910.2 Financing Enterprises
200909.2 Enterprise Law
201085.1 Fundamentals of Marketing Analytics

And one elective

**Year 2**

**Autumn session**

200915.3 The Service Enterprise
201082.1 Customer Experience Fundamentals
201084.1 Customer Insights

And one elective

**Spring session**

201086.1 Marketing and Digital Communications
201083.1 Strategic Brand Management

And two electives

**Year 3**

**Autumn session**

200918.1 Design Thinking for Creativity
200087.3 Strategic Marketing Management

And two electives

**Spring session**

201087.1 Omnichannel Marketing

Enterprise Engaged Unit

200096.3 Marketing Planning Project

And two electives

## Part-time

**Year 1**

**Autumn session**

200911.1 Enterprise Innovation and Markets
200909.2 Enterprise Law

**Spring session**

200083.3 Marketing Principles
200032.7 Statistics for Business

**Year 2**

**Autumn session**

200912.1 Enterprise Leadership
201085.1 Fundamentals of Marketing Analytics

**Spring session**

200910.2 Financing Enterprises

And one elective

**Year 3**

**Autumn session**

200915.3 The Service Enterprise

And one elective

**Spring session**

201082.1 Customer Experience Fundamentals

And one elective

**Year 4**

**Autumn session**

201084.1 Customer Insights

And one elective

**Spring session**

201086.1 Marketing and Digital Communications

And one elective

**Year 5**

**Autumn session**

201083.1 Strategic Brand Management

And one elective

**Spring session**

200918.1 Design Thinking for Creativity

And one elective

**Year 6**

**Autumn session**

201087.1 Omnichannel Marketing
200087.3 Strategic Marketing Management

**Spring session**

Enterprise Engaged Unit

200096.3 Marketing Planning Project

And one elective

## Major - Quantity Surveying

### *MT3035.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

### Specialisation Structure

Elective units may be used toward obtaining an additional approved major (80 credit points).

Choose 8 from

| | |
|---|---|
| **301233.1** | Advanced Building Measurement |
| **301234.1** | Building Cost Studies |
| **300885.3** | Building Regulations Studies |
| **200503.4** | Construction Information Systems |
| **301225.2** | Digital Construction |
| **200909.2** | Enterprise Law |
| **301158.3** | Modern Construction Enterprises |
| **301159.3** | Modern Construction Projects |
| **300053.6** | Professional Practice |
| **200602.2** | Principles of Valuation |
| **200874.1** | Property Development Process |
| **300748.4** | Quality and Value Management |

The units listed below count towards completion of the major for students who may have passed these units in 2020 or earlier.

301224 - Contract Administration

## Major - Building Surveying

### *MT3036.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

### Specialisation Structure

Elective units may be used toward obtaining an additional approved major (80 credit points).

Choose 8 from

| | |
|---|---|
| **301085.3** | Built Heritage |
| **200292.2** | Building Law |
| **300885.3** | Building Regulations Studies |
| **200503.4** | Construction Information Systems |
| **300723.4** | Development Control |
| **200909.2** | Enterprise Law |
| **301158.3** | Modern Construction Enterprises |
| **301159.3** | Modern Construction Projects |
| **301105.3** | Negotiation in the Built Environment |
| **300053.6** | Professional Practice |
| **200874.1** | Property Development Process |
| **300748.4** | Quality and Value Management |
| **301399.2** | Sustainable Construction Materials |

The units listed below count towards completion of the major for students who may have passed these units in 2020 or earlier.

301224 - Contract Administration

300748 - Quality and Value Management

## Major - Quantity Surveying

### *MT3037.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

### Specialisation Structure

Elective units may be used toward obtaining an additional approved major (80 credit points).

Choose 8 from

| | |
|---|---|
| **200487.5** | Quantity Surveying 2 |

From Spring 2022 students are advised to select 301233 Advanced Building Measurement which will replace 200487 Quantity Surveying 2

| | |
|---|---|
| **301233.1** | Advanced Building Measurement |
| **300726.4** | Estimating 2 |

From Spring 2022 students are advised to select 301234 Building Cost Studies which will replace 300726 Estimating 2

| | |
|---|---|
| **301234.1** | Building Cost Studies |
| **301224.1** | Contract Administration |
| **301225.2** | Digital Construction |
| **200503.4** | Construction Information Systems |
| **300885.3** | Building Regulations Studies |
| **301158.3** | Modern Construction Enterprises |
| **301159.3** | Modern Construction Projects |
| **300748.4** | Quality and Value Management |
| **300053.6** | Professional Practice |
| **200602.2** | Principles of Valuation |
| **200874.1** | Property Development Process |
| **300723.4** | Development Control |
| **301105.3** | Negotiation in the Built Environment |

## Sub-major - Indigenous Australian Studies

### *SM1049.1*

What does it mean to live in Indigenous Australia? The Indigenous Australian Studies sub-major offers students the exciting opportunity to acquire key cultural competencies that will enable them to understand and work more effectively with Indigenous Australians in professions such as the arts, communications, media industries; education; government and non-government; policy; health; sciences; and community services. The Indigenous Australian Studies sub-major addresses the cultural, historical, social and economic issues affecting Indigenous and Non-Indigenous Australians and relationships.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

Students must successfully complete 40 credit points from the units below.

Students must complete the following compulsory unit

**101751.2** Contextualising Indigenous Australia (Day Mode)

Students must also complete 3 units from the following pool

**Level 1 unit**

**102805.1** Indigenous Landscapes

**Level 2 units**

**101752.2** Pigments of the Imagination
**101753.3** Revaluing Indigenous Economics (Day Mode)
**101754.3** From Corroborees to Curtain Raisers (Day Mode)
**101755.2** From Ochre to Acrylics to New Technologies

**Level 3 units**

**101756.2** Bridging the Gap: Re-engaging Indigenous Learners
**101757.2** The Making of the `Aborigines'
**101758.2** Learning through Indigenous Australian Community Service (Day Mode)
**101759.2** Rethinking Research with Indigenous Australians: Independent Study Project (Day Mode)

**Equivalent Specialisation Units**

The Level 3 unit listed below counts towards completion of the Sub-major for students who successfully completed the unit in 2019 or earlier.

100961 - Humanities Internship

The Level 1 unit listed below counts towards completion of the Sub-major for students who successfully completed the unit in Autumn 2020 or earlier.

101878 - Indigenous Landscapes

## Sub-major - Social Ecology

### *SM1068.1*

The Social Ecology sub-major explores the rich diversity of relationships between the individual, society and environment. Social Ecology embraces a transdisciplinary approach to learning emphasising reflective thinking, criticality, creativity, participation and communication. Students develop skills in ecologically informed analysis, creative thinking and action, social and environmental relationships and transformative education with an emphasis on sustainability, social change and leadership. The sub-major in Social Ecology is available as an elective package to students across all degrees. Students may also choose any Social Ecology unit as a single elective.

## Location

| Campus | Mode |
|---|---|
| Bankstown Campus | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

Students may take out a Social Ecology sub-major by completing 40 Credit Points from the following pool of units.

**101259.3** Learning and Creativity
**101263.1** Education and Transformation
**101663.2** Education for Sustainability
**101569.3** Sustainable Futures
**101874.3** Experiential Learning in Communities (ELC)

## Sub-major - Cultural and Social Analysis

### *SM1070.1*

Cultural and Social Analysis is an interdisciplinary sub-major developing knowledge, research skills and analytic capacities relevant to understanding and interpreting landscapes of cultural diversity and social difference in our contemporary world, both in terms of the broad contours, as well as specific micro-social environments. This sub-major provides grounding in contemporary debates and methodologies in cultural studies and social theory, and draws on various disciplines including history, sociology, communications, and linguistics. Topics include popular culture, everyday urban life, cultural and social impacts of scientific theories and new technologies, multiculturalism, and contemporary spirituality. Study in this area is relevant for work involving commentary and analysis of contemporary social issues and cultural practices (e.g. journalism, teaching, activism) and fields concerned with designing, delivering and evaluating cultural and artistic productions, and education, communication, welfare or health services, in culturally diverse communities.

## Location

| Campus | Mode |
|---|---|
| Bankstown Campus | Internal |
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

Students must successfully complete 40 credit points as follows.

Please note all Bachelor of Arts students including Pathways to Teaching, Dean's Scholars and double degrees must complete the structure under the heading Bachelor of Arts.

Please note all Bachelor of Creative Industries students including double degrees must complete the structure under the heading Bachelor of Creative Industries.

This specialisation is available to students in other Western Sydney University Courses. If the specialisation is available on your campus, the course structure allows space for enrolment in the specialisation and pre-requisite requirements can be met, please follow the structure under the heading Bachelor of Arts. Consult your Course Advisor for further advice.

*Note: Not all units will be offered each year. Units will be offered on a rotational basis.*

## Bachelor of Arts Students

Arts students must choose at least two of the following four units:

**102410.2** Digital Cultures
**100897.2** Everyday Life
**101906.2** Researching Culture
**101979.1** Understanding Visual Culture

## Bachelor of Creative Industries Students

Creative Industries students will have already completed 100897 Everyday Life as their Introduction to Major unit as part of the core requirements of the course and must choose at least two from the following three units:

**102410.2** Digital Cultures
**101906.2** Researching Culture
**101979.1** Understanding Visual Culture

## Pool Units

Additional units to complete the sub major can be chosen from the following pool units.

*Note: Not all Units will be offered each year. Units will be offered on a rotational basis.*

### Level 2 Unit Pool

**102192.1** Cinema and Censorship
**101967.1** Cultural History of Books and Reading
**101250.3** Digital Futures
**102425.1** Digital Humanities and Research Methods (UG)
**100964.3** Introduction to Film Studies
**100882.3** Politics of Sex and Gender
**101917.1** Representing Everyday Life in Literary and Visual Cultures
**101990.1** The Racial State
**101989.1** Thinking Cinema
**100291.5** Urban Life/Urban Culture
**100298.3** Youth Cultures and Moral Panics

### Level 3 Unit Pool

**101981.1** Activism, Engagement and Social Change
**101265.3** Children's Culture
**101626.5** Children's Literature: Image and Text
**101984.1** Cinema and Experience
**101870.1** Climate Change and Culture
**102413.1** Consumer Culture
**102185.1** Culture, Discourse and Meaning
**102479.1** Cultures of Crime and Punishment
**102529.2** Cyber Justice (UG)
**100996.3** Death and Culture
**100860.3** Emotions, Culture and Community
**100866.3** Film and Drama
**102305.1** Food: A Cultural History
**101716.3** Healing and Culture
**101991.1** History of Sexuality
**101988.1** Human Rights and Culture
**101468.2** Islam, Media and Conflict
**102781.1** Labour and Culture
**102789.1** Philosophy of Race and Racism
**101985.1** Politics, Power and Resistance
**101987.1** Postcolonial Australian Cinema
**102191.1** Queer Culture
**101005.4** Representing Crime
**101009.4** The Body in Culture
**101848.1** Transnationalism and Migration
**101731.3** Understanding Power
**101898.1** Violence in Everyday Life
**101010.3** What is the Human?

**Please note**

The Level 2 and 3 units listed below count towards completion of the sub-major for students from 2015 or earlier, who may have previously passed these units.

**Level 2 units**

101409 - Aboriginal Cultural Texts
100845 - Contemporary Popular Cultures
101408 - Critical Discourse Analysis
SS238A - Genres
101251 - Introduction to Psychoanalysis
100273 - New Ethnicities, Old Racisms
G2006 - Race, Community and National Identity in Australia
100884 - Social Inequalities
100886 - Special Topics in Cultural and Social Analysis
100889 - Technocultures
10371 - The Art Museum-from the Prince to the Public
101411 - Theories of Representation
101879 - Women with Muslim Identity

**Level 3 units**

101295 - Aesthetics
400087 - Applied Critical Methods
100988 - Chaos and Communication
100990 - Cinema, Culture, Memory
100992 - Communication: Power and Practice
100994 - Consumer Culture
100858 - Culture and Globalisation
100998 - Evolutionary Thinking
101844 - Feminist Theories
100999 - Gender at Work
101955 - Honours Foundation
101739 - Literature and Trauma
101732 - Media, The Everyday and Uneven Modernities
101800 - Media, Violence, Protest, Terror
101252 - Psychoanalytic Criticism
101253 - Public Memory and Commemoration
101003 - Religion and Culture
101006 - Social Semiotics
101007 - Story Links and Indigenous Knowledge

101832 - Talking Normal: Sociolinguistics and Modern Literature

101008 - Technologies of Racism

101738 - The Art Game: Fraud, Forgery, Theft and Perfidy

101798 - Understanding Freedom

The Level 3 unit listed below counts towards completion of the Sub-major for students who successfully completed the unit in 2019 or earlier.

100961 - Humanities Internship

## Sub-major - Geography and Urban Studies

### *SM1093.1*

Students in this sub-major examine the geography of contemporary Australian cities and regions. Geography is the integrated study of people, places and environments. The cutting edge interests of today's Geographers include post-colonialism, the emergence of global information economies, indigenous issues, class and cultural disparities, population movement, sexuality and space, and the global diffusion of popular culture. Urban Studies is a newer discipline focused on social justice within the city, through its critical assessments of peoples' access to scarce urban resources, such as housing, transport, education and employment. The political, economic, and cultural forces that shape cities and urban policy are the key concerns of the Urban Studies curriculum. These applied interests in urban well-being and city structure are the intellectual basis for the Urban Planning profession. The Geography and Urban Studies sub-major is a compulsory component of the University's accredited Planning course.

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

### Specialisation Structure

Students must complete four of the following units

**Year 1**

**Autumn session**

**101589.3** Cities: Introduction to Urban Studies

**Year 2**

**Autumn session**

**101590.3** Cultural and Social Geographies

**Spring session**

**101591.3** The Economics of Cities and Regions
**101646.3** Analysis of Spatial Data

**Year 3**

**Autumn session**

**101593.4** Planning the City: Development, Community and Systems
**101645.3** Transport, Access and Equity

**Spring session**

**101694.3** Geographies of Migration
**101905.3** Indigenous Cultures: A Global Perspective

## Sub-major - Graphic Design

### *SM1118.1*

The Graphic Design sub-major provides students from outside the Design program with an introduction to fundamental skills and knowledge in graphic design. The sub-major includes a selection of practice-based and theoretical units and you can opt for study areas such as image design, contextual design studies, web design and branding. In addition, you will have the opportunity to choose a practice-based specialisation from the areas of interactive design; digital design; illustration and photomedia.

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

Students must complete 40 credit points as follows

**Note: Creative Industries Students**

Creative Industries students complete whichever Level 1 unit they did not complete as their introductory major unit. Unit 102263 Image Design or 101922 Web and Time-based Design.

Choose one of

**102263.3** Image Design
**101922.1** Web and Time-based Design

And, complete 30 credit points from the following

Or

Complete 10 credit points from the following and one of the 20 credit point Design parings.

**101923.1** Australian Design
**102275.1** Contextual Design Studies
**102276.2** Graphic Design: Developing a Personal Portfolio
**102266.2** Researching the Visual
**102274.1** Social Design: Research and Practice

### Design Pairings

**Illustration**

**101017.5** Illustrating Narrative
**102271.2** Illustrating Popular Culture

**Interactive**

**102267.2** Interactive Design: Apps
**102272.3** Interactive Design: Games

**Photomedia**

**100941.5** Photomedia: Fashion and Identity
**102268.2** Photomedia: Photographic Practice

**Digital Design**

**102269.2** Data Visualisation
**102273.3** Motion Design

## Sub-major - Property Investment

### *SM2050.1*

The Property Investment sub-major is available to all undergraduate students other than those completing the Property Key Program or Major. This sub-major assists students in the finance and related areas who want to expand their expertise in property investment.

### Location

| Campus | Mode |
|---|---|
| Parramatta City Campus-Macquarie Street | External |
| Parramatta City Campus-Macquarie Street | Internal |

### Specialisation Structure

Students must complete four units as follows.

**200874.1** Property Development Process
**200875.1** Property Finance
**200749.2** Property Investment
**200873.1** Property Portfolio Management

## Sub-major - Business Studies for Secondary Teaching

### *SM2052.1*

The sub-major, Business Studies for Secondary Teaching, develops students' knowledge, skills and understanding of contemporary business issues. The sub-major explores the management of operations, finance, marketing and economics, including the behaviour of firms, the role and function of management and the fundamental concepts of finance theory. Problem solving scenarios and experiential learning allows students to develop their personal and professional skills. This specialisation is designed to meet BOSTES content requirements for teaching Business Studies or Commerce in NSW High Schools.

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

Students must successfully complete 40 credit points, including all of the units listed below.

The units in this sub-major are offered at the Parramatta City campus and the core units in the Bachelor of Arts (Pathway to Teaching Secondary) courses are offered at the Parramatta South, Bankstown and Penrith campuses. Students will be required to travel between campuses in order to complete this sub-major.

**200922.2** Consumers, Firms and Markets
**200488.6** Corporate Financial Management
**200912.1** Enterprise Leadership
**200865.2** Managing Operations

## Sub-major - Construction Economics

### *SM3029.1*

This sub-major is a requirement for membership of the Australian Institute of Quantity Surveyors and is a useful course of study for those interested in the area of cost control and project planning.

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

Students must complete the following four units

**200503.4** Construction Information Systems
**300726.4** Estimating 2
**200487.5** Quantity Surveying 2
**300748.4** Quality and Value Management

## Sub-major - Computer Engineering

### *SM3032.1*

This sub-major is available to students other than those enrolled in B Engineering (Computer) Key Program. This sub-major includes core subjects of computer engineering. It provides a comprehensive introduction to essential aspects of the discipline.

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

Student must complete 40 credit points as follows

| | |
|---|---|
| 300096.7 | Computer Organisation |
| 300029.5 | Engineering Visualization |
| 300167.5 | Systems Programming 1 |

Choose one of

| | |
|---|---|
| 300092.1 | Computer Architecture |
| 300044.4 | Microcontrollers and PLCs |
| 300149.3 | Operating Systems |

## Sub-major - Construction

### *SM3033.1*

This sub-major is available to any student in Western Sydney University other than those enrolled in Bachelor of Construction Management or Bachelor of Housing. This sub-major includes core subjects of construction. It provides a comprehensive introduction to essential aspects of the discipline.

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

Students must complete the following four units

| | |
|---|---|
| 300707.2 | Building 2 |
| BG302A.1 | Building Regulation Studies |
| 200471.6 | Construction Technology 5 (Envelope) |
| MG313A.1 | Project Management |

## Sub-major - Electrical Engineering

### *SM3034.1*

This sub-major is available to students other than those enrolled in B Engineering (Electrical) Key Program. This sub-major includes core subjects of electrical engineering. It provides a comprehensive introduction to essential aspects of the discipline.

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

Student must complete 40 credit points as follows

| | |
|---|---|
| 300071.4 | Electrical Machines 1 |
| 300481.4 | Engineering Electromagnetics |

Choose two of

| | |
|---|---|
| 300070.6 | Electrical Drives |
| 300024.2 | Electronic Systems Design |
| 300026.3 | Energy Systems |

## Sub-major - Environmental Engineering

### *SM3035.1*

This sub-major is available to students other than those enrolled in B Engineering (Environmental) Key Program. This sub-major includes core subjects of environmental engineering. It provides a comprehensive introduction to essential aspects of the discipline.

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

Students must complete the following four units

| | |
|---|---|
| EH321A.1 | Air Quality Assessment & Management (UG) |
| 300469.2 | Introductory Chemistry |
| EY101A.1 | Terrestrial Environment Management |
| MG309A.2 | Water and Waste Management |

## Sub-major - Visualisation

### *SM3084.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

Students must complete 40 credit points as follows.

**Core Units**

| | |
|---|---|
| 301074.3 | Graphics 1: 2D and 3D Industrial Design Communication |
| 301076.3 | Graphics 2: Visual Simulation |
| 301079.3 | Graphics 3: 3D Engineering Specifications and Visualisation |

**Alternate Unit**

| | |
|---|---|
| 301091.3 | Graphics 4: Kinetic Narratives |

## Sub-major - Human-Computer Interaction

### *SM3085.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

Students must complete 40 credit points as follows.

**Core Unit**

**300570.4** Human-Computer Interaction

**Sub-major Alternate Units**

**300580.4** Programming Fundamentals
**300976.2** Technologies for Mobile Applications
**301088.3** Tangible Interaction Design

## Sub-major - Industrial Manufacturing

### *SM3086.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

Students must complete 40 credit points as follows.

**Core Units**

**301082.2** Design Management 2: Operation and Supply Chain
**301076.3** Graphics 2: Visual Simulation
**301079.3** Graphics 3: 3D Engineering Specifications and Visualisation

**Alternate Unit**

**301093.2** Design Management 1: Process and Manufacturing

## Sub-major - Design Management

### *SM3087.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

Students must complete 40 credit points as follows.

**Core Units**

**301082.2** Design Management 2: Operation and Supply Chain
**300014.4** Design Management 3: Organisational Skills for Designers

**Alternate Units**

**301093.2** Design Management 1: Process and Manufacturing
**301094.2** Design Management 4: Strategy and Lean Start-Up

## Sub-major - Responsible Design and Sustainability

### *SM3088.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

Students must complete 40 credit points as follows.

**Core Units**

**301095.2** Sustainable Design 1: Materials and Technology
**301081.3** Sustainable Design 2: Product Service Systems

**Alternate Units**

**301094.2** Design Management 4: Strategy and Lean Start-Up
**101184.4** Psychology: Human Behaviour

## Sub-major - Construction Economics

### *SM3094.1*

This sub-major is a requirement for membership of the Australian Institute of Quantity Surveyors and is a useful course of study for those interested in the area of cost control and project planning.

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

### Specialisation Structure

Students must successfully complete four of the following six specialist units

**200503.4** Construction Information Systems

**300726.4** Estimating 2
**301158.3** Modern Construction Enterprises
**301159.3** Modern Construction Projects
**200487.5** Quantity Surveying 2
**300748.4** Quality and Value Management

## Sub-major - Digital Innovation

### *SM3103.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Multi Modal |

### Specialisation Structure

The Bachelor of Design and Technology is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

Students must complete 40 credit points as follows.

**301305.2** New Product Innovation with IoT Data
**301306.2** Simulation in Virtual and Augmented Realities
**301088.3** Tangible Interaction Design
**301307.2** Creative Digital: Robots and Avatars

Students may need to seek academic advice regarding the availability of units.

## Sub-major - Design Practice

### *SM3104.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Multi Modal |

### Specialisation Structure

The Bachelor of Design and Technology is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

Students must complete 40 credit points as follows.

**301308.2** Design Practice: Sustainable Manufacturing
**301309.2** Design Practice: Sustainable Components
**301310.2** Design Practice: Manufactured Product Lifecycle
**301311.1** Design Practice: Self-Directed Specialised Mentor Project

Students may need to seek academic advice regarding the availability of units.

## Sub-major - Strategic Design Management

### *SM3105.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Multi Modal |

### Specialisation Structure

The Bachelor of Design and Technology is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

Students must complete 40 credit points as follows.

**301301.2** Design Thinking for Successful Brands and Products
**301302.2** Design Thinking for Competitive Advantage
**301303.2** Creative Business Model Innovation
**301304.2** Start-Up Product Launch

## Sub-major - Sustainable Futures

### *SM3106.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Multi Modal |

### Specialisation Structure

The Bachelor of Design and Technology is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

Students must complete 40 credit points as follows.

**400337.6** Social Research Methods

From Autumn 2021, 102816 replaces 400337. Students are advised to enrol in the equivalent unit 102816 Investigating and Communicating Social Problems.

**102816.1** Investigating and Communicating Social Problems
**301062.3** Environmental Building Design

Choose two of

**300812.2** Understanding Landscape
**300840.2** Environmental Planning and Climate Change
**101878.2** Indigenous Landscapes

From Spring 2020, 102805 replaces 101878. Students are advised to enrol in the equivalent unit 102805 Indigenous Landscapes

**102805.1** Indigenous Landscapes

## Sub-major - Visualisation

### *SM3107.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Multi Modal |

### Specialisation Structure

The Bachelor of Design and Technology is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

Students must complete 40 credit points as follows.

**Core Units**

| | |
|---|---|
| 301283.2 | Design Graphics: Presenting Innovation |
| 301287.2 | Design Graphics: Engineering Documentation |
| 301290.2 | Design Graphics: Communication for Manufacture |

**Sub-major Alternate Unit**

| | |
|---|---|
| 301308.2 | Design Practice: Sustainable Manufacturing |

From Autumn 2021 301308 will be replaced with 301285. Students are advised to select 301285 Drawing Skills for Design Thinking.

| | |
|---|---|
| 301285.2 | Drawing Skills for Design Thinking |

## Sub-major - Industrial Manufacturing

### *SM3108.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

The Bachelor of Design and Technology is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

Students must complete 40 credit points as follows.

Core Units

| | |
|---|---|
| 301287.2 | Design Graphics: Engineering Documentation |
| 301290.2 | Design Graphics: Communication for Manufacture |
| 301302.2 | Design Thinking for Competitive Advantage |

**Sub-major Alternate Unit**

| | |
|---|---|
| 301305.2 | New Product Innovation with IoT Data |

## Sub-major - Design Management

### *SM3109.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Multi Modal |

### Specialisation Structure

The Bachelor of Design and Technology is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

Students must complete 40 credit points as follows.

**Core Units**

| | |
|---|---|
| 301302.2 | Design Thinking for Competitive Advantage |
| 301301.2 | Design Thinking for Successful Brands and Products |

**Sub-major Alternate Units**

| | |
|---|---|
| 301305.2 | New Product Innovation with IoT Data |
| 301304.2 | Start-Up Product Launch |

## Sub-major - Responsible Design and Sustainability

### *SM3110.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

The Bachelor of Design and Technology is offered on Parramatta (Victoria Road) Campus only. Students may be required to travel between campuses in order to complete some units within specific majors and sub-majors.

Students must complete 40 credit points as follows.

**Core Units**

| | |
|---|---|
| 301288.2 | Sustainable Materials and Smart Manufacturing |
| 301293.2 | Designing for Circular Economy (Advanced) |

**Sub-major Alternate Units**

| | |
|---|---|
| 101184.4 | Psychology: Human Behaviour |
| 301304.2 | Start-Up Product Launch |

## Sub-major - Design Practice

### *SM3111.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |

### Specialisation Structure

Students must complete 40 credit points as follows

| | |
|---|---|
| 301302.2 | Design Thinking for Competitive Advantage |
| 301304.2 | Start-Up Product Launch |
| 200862.1 | Creating Change and Innovation |
| 301306.2 | Simulation in Virtual and Augmented Realities |

## Sub-major - Sustainable Futures

### *SM3112.1*

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

Students must complete 40 credit points as follows

| | |
|---|---|
| 102805.1 | Indigenous Landscapes |
| 101569.3 | Sustainable Futures |

Choose one of

| | |
|---|---|
| 301062.3 | Environmental Building Design |
| 101870.1 | Climate Change and Culture |
| 301274.1 | Environmental Planning, Policy & Regulation |

Choose one of

| | |
|---|---|
| 102345.2 | Global Structures, Local Cultures |
| 301085.3 | Built Heritage |
| 301227.2 | Non-Residential Building |
| 300802.3 | Biodiversity |

## Sub-major - Civil Engineering

### *SM3621CIVE.1*

This sub-major is available to students other than those enrolled in the B Engineering (Civil) Key Program. This sub-major includes core subjects of civil engineering. It provides a comprehensive introduction to essential aspects of the discipline.

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

Students must complete the following four units

| | |
|---|---|
| 300736.4 | Concrete Structures (UG) |
| 300730.4 | Steel Structures |
| 300732.4 | Structural Analysis |
| 300739.4 | Timber Structures (UG) |

## Sub-major - Ecological Engineering

### *SM3621ECOE.1*

This sub-major is available to students other than those enrolled in the B Engineering (Civil) or (Environmental) Key Program. This sub-major includes core subjects of ecological engineering. It provides a comprehensive introduction to essential aspects of the discipline.

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

Students must complete the following four units

| | |
|---|---|
| 300482.2 | Engineering Geology and Concrete Materials |
| 300737.6 | Environmental Engineering |
| 300738.5 | Surveying for Engineers |
| 300486.2 | Infrastructure Engineering |

**Note: Students are advised to enrol in unit 300982 Transportation Engineering in place of 300486 Infrastructure Engineering.**

## Sub-major - Robotics and Mechatronics

### *SM3621R&M.1*

This sub-major is available to students other than those enrolled in B Engineering (Robotics and Mechatronics) Key Program. The units forming this sub-major provide a comprehensive introduction to essential aspects of mechatronics and robotics. It is intended as a coherent set of units in mechanics of machines, automation and robotics that can add to engineering knowledge gained in other fields of engineering. The sub-major may be taken by students in non-engineering areas provided they satisfy the unit prerequisites and assumed knowledge.

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

Student must complete 40 credit points as follows

| | |
|---|---|
| 300735.4 | Automated Manufacturing |
| 300035.5 | Kinematics and Kinetics of Machines |
| 300044.4 | Microcontrollers and PLCs |

Choose one of

| | |
|---|---|
| 300043.6 | Mobile Robotics |
| 300056.6 | Robotics |

## Sub-major - Soil Engineering

### *SM3621SOE.1*

This sub-major is available to students other than those enrolled in B Engineering (Civil) or (Environmental) Key Programs. This sub-major includes core subjects of soil engineering. It provides a comprehensive introduction to essential aspects of the discipline.

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

Students must complete the following four units

| | |
|---|---|
| 300482.2 | Engineering Geology and Concrete Materials |
| 300485.3 | Foundation Engineering |
| 200237.5 | Mathematics for Engineers 1 |
| 300731.2 | Soil Engineering |

## Sub-major - Structural Engineering

### *SM3621STRE.1*

This sub-major is available to students other than those enrolled in the B Engineering (Civil) or (Environmental) Key Programs. This sub-major includes core subjects of structural engineering. It provides a comprehensive introduction to essential aspects of the discipline.

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

Students must complete the following four units

| | |
|---|---|
| 300463.4 | Fundamentals of Mechanics |
| 300733.4 | Introduction to Structural Engineering |
| 300040.4 | Mechanics of Materials |
| 300732.4 | Structural Analysis |

## Sub-major - Water Engineering

### *SM3621WATE.1*

This sub-major is available to students other than those enrolled in B Engineering (Civil) or (Environmental) Key Programs. This sub-major includes core subjects of water engineering. It provides a comprehensive introduction to essential aspects of the discipline.

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

Students must complete the following four units

| | |
|---|---|
| 300479.1 | Drainage Engineering |
| 200237.5 | Mathematics for Engineers 1 |
| 300740.1 | Water Engineering |
| 300734.1 | Water Resources Engineering (UG) |

## Sub-major - Structures

### *SM3065.1*

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering - Civil or Construction key programs only.

Student must complete 40 credit points from the units listed below:

| | |
|---|---|
| 300986.3 | Applied Mechanics |
| 300987.3 | Composite Structures |
| 300988.3 | Highway Infrastructure |
| 300990.3 | Pile Foundations |
| 300739.4 | Timber Structures (UG) |

## Sub-major - Geotechnical

### *SM3066.1*

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering - Civil key program only.

Student must complete the following four units

| | |
|---|---|
| 300988.3 | Highway Infrastructure |
| 301397.2 | Hydrogeology |
| 300990.3 | Pile Foundations |
| 300994.3 | Waste Management |

**Replaced Units**

The units listed below count towards completion of this Sub-major for students who passed these units in 2020 or earlier.

300989 - Hydrogeology

## Sub-major - Water and Environment

### *SM3067.1*

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

**This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering - Civil key program only.**

Student must complete 40 credit points from the units listed below

| | |
|---|---|
| 300991.3 | Statistical Hydrology |
| 300989.2 | Hydrogeology |

From 2021 this unit is replaced by

| | |
|---|---|
| 301397.2 | Hydrogeology |
| 300993.3 | Water Resource Engineering |
| 300992.3 | Water and Wastewater Treatment |

From Spring 2022, 300992 Water and Wastewater Treatment is replaced by 301424 Water Supply Systems Design

| | |
|---|---|
| 301424.1 | Water Supply Systems Design |
| 300994.3 | Waste Management |
| 300798.4 | Sustainability and Risk Engineering |

## Sub-major - Construction Economics

### *SM3068.1*

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering - Construction key program only.

Student must complete the following four units

| | |
|---|---|
| 200503.4 | Construction Information Systems |
| 300726.4 | Estimating 2 |
| 200487.5 | Quantity Surveying 2 |
| 300748.4 | Quality and Value Management |

## Sub-major - Telecommunications

### *SM3069.1*

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering - Electrical key program only.

Student must complete 40 credit points from the units listed below

| | |
|---|---|
| 300997.3 | Data Communications |
| 300019.6 | Digital Systems 2 |
| 300029.5 | Engineering Visualization |
| 300489.4 | Radio and Satellite Communication |
| 300065.7 | Wireless Communications |

## Sub-major - Power Engineering

### *SM3070.1*

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering - Electrical key program only.

Student must complete the following four units

| | |
|---|---|
| 300019.6 | Digital Systems 2 |
| 300995.3 | Power Quality |
| 300996.3 | Smart Grids and Distributed Generation |
| 300998.3 | Sustainable Energy Systems |

## Sub-major - Computer Aided Design (Mechanical)

### *SM3071.1*

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

Student must complete the following four units

**300999.3** Computational Fluid Dynamics

Choose one of

**301081.3** Sustainable Design 2: Product Service Systems
**300306.4** Sustainable Design: Sustainable Futures

Choose one of

**301076.3** Graphics 2: Visual Simulation
**300310.3** Industrial Graphics 3: 3D Solids

Choose one of

**301091.3** Graphics 4: Kinetic Narratives
**300312.3** Industrial Graphics 4: Surface

## Sub-major - Automation

### *SM3072.1*

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering - Mechanical key program only.

Student must complete the following four units

**300999.3** Computational Fluid Dynamics
**300570.4** Human-Computer Interaction
**300044.4** Microcontrollers and PLCs
**300043.6** Mobile Robotics

## Sub-major - Computer Aided Design (Mechatronics)

### *SM3073.1*

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

Student must complete the following four units

**301000.4** Computer Aided Engineering
**300029.5** Engineering Visualization

Choose one of

**301079.3** Graphics 3: 3D Engineering Specifications and Visualisation
**300282.2** Industrial Graphics 2: Transition

Choose one of

**301076.3** Graphics 2: Visual Simulation
**300310.3** Industrial Graphics 3: 3D Solids

## Sub-major - Thermal and Fluid Systems

### *SM3074.1*

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

### Specialisation Structure

This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering - Robotics & Mechatronics key program only.

Student must complete the following four units

**300999.3** Computational Fluid Dynamics
**300762.4** Fluid Mechanics
**300760.4** Thermodynamics and Heat Transfer
**300759.4** Thermal and Fluid Engineering

## Sub-major - Biomedical Engineering

### *SM3091.1*

The Biomedical Engineering sub-major includes elements from the bioelectronics, biomechanical and biomechatronic specialisations. This allows students to undertake multidisciplinary study within engineering, which combines knowledge from electronics, chemical, materials, mechanical and mechatronic engineering with the life sciences of medicine, biology and molecular biology. Graduates will be equipped with professional skills to work

in biomedical industry as engineers, with a good understanding of multidisciplinary principles and practices.

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering - Electrical, Mechanical and Robotics & Mechatronics key programs only.

Student must complete the following four units

| | |
|---|---|
| 401140.3 | Biomechanics |
| 301122.3 | Biomedical Electronics |

Students are advised to select 301475 Biomedical Engineering from Autumn 2022

| | |
|---|---|
| 301121.4 | Biomedical Signals and Data Analysis |
| 300361.4 | Introduction to Human Biology |

## Sub-major - Computer Aided Design (Mechanical)

### *SM3092.1*

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering - Mechanical key program only.

Student must complete the following four units

| | |
|---|---|
| 300999.3 | Computational Fluid Dynamics |
| 301076.3 | Graphics 2: Visual Simulation |
| 301091.3 | Graphics 4: Kinetic Narratives |
| 301081.3 | Sustainable Design 2: Product Service Systems |

## Sub-major - Computer Aided Design (Mechatronics)

### *SM3093.1*

## Location

| Campus | Mode |
|---|---|
| Penrith Campus | Internal |

## Specialisation Structure

This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering - Robotics & Mechatronics key program only.

Student must complete the following four units

| | |
|---|---|
| 301000.4 | Computer Aided Engineering |
| 300029.5 | Engineering Visualization |
| 301287.2 | Design Graphics: Engineering Documentation |
| 301290.2 | Design Graphics: Communication for Manufacture |

**Please note**

**The units listed below count towards completion of the course (or major, or sub-major) for students who may have passed these units in 2019 or earlier.**

| | |
|---|---|
| 301076.3 | Graphics 2: Visual Simulation |
| 301079.3 | Graphics 3: 3D Engineering Specifications and Visualisation |

## Sub-major - Water and Environment

### *SM3098.1*

## Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |

## Specialisation Structure

**This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering - Civil key program only.**

Student must complete 40 credit points from the units listed below

| | |
|---|---|
| 300991.3 | Statistical Hydrology |
| 301397.2 | Hydrogeology |
| 300993.3 | Water Resource Engineering |
| 300992.3 | Water and Wastewater Treatment |

From Spring 2022, 300992 Water and Wastewater Treatment is replaced by 301424 Water Supply Systems Design

| | |
|---|---|
| 301424.1 | Water Supply Systems Design |
| 300994.3 | Waste Management |

**Replaced Units**

The units listed below count towards completion of this Sub-major for students who passed these units in 2020 or earlier.

300989 - Hydrogeology

## Sub-major - Computer Aided Design (Mechanical)

### *SM3099.1*

### Location

| Campus | Mode |
|---|---|
| Parramatta Campus - Victoria Road | Internal |
| Penrith Campus | Internal |
| Sydney City Campus | Internal |

### Specialisation Structure

This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) - Mechanical key program only.

Student must complete the following four units

| | |
|---|---|
| **300999.3** | Computational Fluid Dynamics |
| **301290.2** | Design Graphics: Communication for Manufacture |
| **301293.1** | Designing for Circular Economy (Advanced) |
| **301308.1** | Design Practice: Sustainable Manufacturing |

**Please note**

**The units listed below count towards completion of the course (or major or sub-major) for students who may have passed these units in 2020 or earlier.**

301079 Graphics 3: 3D Engineering Specifications and Visualisation

301081 Sustainable Design 2: Product Service Systems

301091 Graphics 4: Kinetic Narratives

## Sub-major - Construction Economics

### *SM3100.1*

### Specialisation Structure

This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) KT3166 Construction key program only.

Student must complete the following four units

| | |
|---|---|
| **301233.1** | Advanced Building Measurement |
| **301234.1** | Building Cost Studies |
| **200503.4** | Construction Information Systems |
| **300748.4** | Quality and Value Management |

## Sub-major - Structures

### *SM3121.1*

### Specialisation Structure

This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering - Civil or Construction key programs only.

Student must complete 40 credit points from the units listed below

| | |
|---|---|
| **300986.3** | Applied Mechanics |
| **300987.3** | Composite Structures |
| **300988.3** | Highway Infrastructure |
| **300990.3** | Pile Foundations |
| **300739.4** | Timber Structures (UG) |

## Sub-major - Geotechnical

### *SM3122.1*

### Location

| Campus | Mode |
|---|---|
| Penrith Campus | Multi Modal |

### Specialisation Structure

This sub-major is only available to students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering - Civil key program only.

Student must complete the following four units

| | |
|---|---|
| **300988.3** | Highway Infrastructure |
| **301397.2** | Hydrogeology |
| **300990.3** | Pile Foundations |
| **300994.3** | Waste Management |

**Replaced Units**

The units listed below count towards completion of this Sub-major for students who passed these units in 2020 or earlier.

300989 - Hydrogeology

## Units

### 301247.3 A Cosmic Perspective

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Knowledge of Mathematics equivalent to 2-unit HSC, and experience with the use of computer software such as Excel or Word would be beneficial. Previous experience of statistics or computer programming will be an advantage but is not essential.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

.....

The unit explores and challenges scientific as well as cultural perspectives on the cosmos, from its composition, expansion and the development and endings of the stars and planets, to life, its limits, evolution and mass extinctions on Earth. The unit also considers the development of consciousness, astrology vs astronomy, expanding horizons, space travel and space exploration.

### 700056.3 Academic English (WSTC Prep)

**Credit Points** 10 **Level** Z

**Equivalent Units**

900021 - Academic English (UWSC)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College.

.....

This unit is designed to improve English proficiency for overseas and local students who wish to progress to university studies. In particular, the course aims to help students access the conventions of academic English by focusing on attitudes to knowledge, the ways in which ideas are structured and presented and surface language correctness. In addition, the course encourages students to develop strategies to maximize their learning and to reflect on their own learning styles.

### 700200.2 Academic Skills for Construction Management (WSTC Prep)

**Credit Points** 10 **Level** Z

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College.

.....

This unit is designed to assist students to become successful independent and reflective learners. It introduces students to a range of theories and concepts to facilitate the development of practical skills and personal attitudes necessary for success in tertiary study. The unit also develops basic competencies in using computers and application software for the Building Design Management and Construction Management industries. The unit covers the use of word-processing software and spreadsheets. Students are also introduced to project management and design software.

### 700005.7 Accounting Information for Managers (WSTC)

**Credit Points** 10 **Level** 1

**Equivalent Units**

200101 - Accounting Information for Managers

**Incompatible Units**

200972 Accounting in Context, 700274 Accounting in Context (WSTC)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year Two units.

.....

This unit provides exposure to financial and management accounting information from the viewpoint of a non-accounting specialist. The unit aims to provide breadth of awareness and knowledge in relevant fields of accounting essential to decision making for managers.

### 101981.1 Activism, Engagement and Social Change

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

.....

This unit is designed for students interested in the politics, processes and ethics of social change. It covers the topics of Internet activism, NGO politics and ethics, identity politics, legal lobbying, revolutions and regime changes, and the role of art in consciousness raising. We will explore the efficacy of different social change strategies, the ethics of various modes of activism, the role that national and transnational politics plays in campaigning, the importance of identity for engagement with social change processes, and the ideologies informing theories of change.

### 200897.2 Advanced Analysis and Interpretation

**Credit Points** 10 **Level** 4

**Corequisite**

**800166.1** Research Design 1: Theories of Enquiry

**Unit Enrolment Restrictions**

Students must be enrolled in course 8083 Bachelor of Research Studies/Master of Research.

.....

Building on the introduction to the analysis of qualitative data presented in the core unit Research Design 1: Theories of Enquiry this unit, Advanced Analysis and Interpretation, will provide candidates with the techniques necessary to use, analyse and interpret qualitative data in business research. Presented as a series of seminar-workshops, candidates consider the theories that underpin the employed analytical methods, and then move to employ introduced qualitative software tools to analyse and interpret research data.

## 301010.3 Advanced Applied Mechanics

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Students should have prior knowledge of strain, stress and deflection analysis of simple structures as well as knowledge of energy principle for structural analysis.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

Applied mechanics deals with the mechanical responses of structural components under various loading and support conditions. This unit will introduce the theory of elasticity and study the bending, buckling and vibration behaviours of beams, plates and shells and their associated applications in engineering practices.

## 301233.1 Advanced Building Measurement

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Students must complete 200 credit points before enrolling in this unit.

.....

This unit is designed to help students develop greater understanding of measurement for complex building works such as commercial and industrial construction. Students will be introduced to measurement used in specialised trades, such as building services and structural steel.

## 301363.1 Advanced Cloud Computing

**Credit Points** 10 **Level** 7

**Prerequisite**

**301042.2** Cloud Computing

.....

This unit offers the Amazon Web Services (AWS) Academy “Academy Cloud Architecting” (ACA) curriculum and provides deeper understanding of advanced cloud computing services and how to architect cloud solutions. Students will learn advanced cloud computing concepts including notification and messaging, serverless computing, API gateways, NoSQL databases, and content delivery networks. The unit also explores strategies to enable high scalability, reliability, cost-efficiency, performance, and operational excellence in a cloud-based system. All these aspects are explored in practice with AWS services. Upon completion of this unit, students will be prepared for the AWS Certified Solutions Architect – Associate exam.

## 301008.3 Advanced Composite Structures

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

This unit enables students to gain an in-depth knowledge into composite structures based on Australian Standards and International Standards. Recent advances in the design of composite beams, slabs, columns and connections will be introduced.

## 301023.3 Advanced Computational Fluid Dynamics

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Finite element methods, Thermal dynamics and Fluid mechanics.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

This unit introduces students to commonly used numerical methods used in computational fluid dynamics (CFD). The unit covers the theory and the application of CFD for solving engineering problems. The numerical methods for solving the in viscid flow and the viscous flow problems will be introduced. The students learn the application of the engineering software in the engineering problems.

## 301022.3 Advanced Computer Aided Engineering

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Students are assumed to have a good understanding on basics of finite element method and analysis, fundamentals and advanced topics in mechanics of materials, fundamentals on fluid mechanics and heat transfer and thermal dynamics.

**Unit Enrolment Restrictions**

Students must be enrolled in 3693 Master of Engineering, 3695 Graduate Certificate in Engineering, or the Master of Research.

**Special Requirements - Essential Equipment**

Finite element analysis packages - Abaqus, ANSYS and SolidWorks

.....

This unit focuses on advanced topics in computer aided engineering and their applications in mechanical engineering in analysing a wide range of engineering problems. The objective of this unit is to advance students’ knowledge and skill level on the finite element method (FEM)-based computer aided engineering (CAE) and its advanced applications in the fields of solid mechanics, fluid mechanics, thermodynamics and heat transfer and product design and development as well. Academic skills on

research and communication are ensured to be achieved through conducting FEM-based CAE projects.

## 300603.5 Advanced Control Systems

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Knowledge is assumed in Continuous time control systems, the use of Laplace and Z-transforms, Analog to digital, digital to analog conversion, Vector matrix difference equations, State variable models and familiarity with Matlab or similar software Knowledge is assumed in: Continuous time control systems; The use of Laplace and Z-transforms; Analog to digital, digital to analog conversion; Vector matrix difference equations; State variable models; Introductory Classical Control Systems Theory; Familiarity with MATLAB.

**Incompatible Units**

300211 - Digital Control, 300172 - Advanced Control Systems

**Unit Enrolment Restrictions**

Students must have competence in the use of test equipment, components and data sheets. Students must be enrolled in a postgraduate course.

.....

This unit covers continuous and discrete control systems. It reviews and builds on the fundamental concepts of the theory of feedback in continuous and discrete time to examine the analysis and design of advanced continuous and discrete time linear control systems. Transfer function and state variable methods are employed. Instruction makes use of extensive experimental tasks. There is also considerable use of Matlab simulations.

## 300173.5 Advanced Data Networks

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Communication Systems / Digital Communication

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

This unit covers all major network technologies: asynchronous transfer mode (ATM), Internet, and telephony. Essential networking topics such as protocol layering, multiple access, switching, scheduling, routing, congestion control, error and flow control, and network security are covered in detail. An engineering approach is taken to provide insight into network design.

## 301019.3 Advanced Dynamic Systems

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

This unit covers three-dimensional kinematics and kinetics of a rigid body. The principles of virtual work are used to investigate the equilibrium and dynamics of mechanisms. Some key aspects of mechanical vibrations are introduced, including vibration response, vibration isolation and vibration measurement.

## 300763.3 Advanced Dynamics

**Credit Points** 10 **Level** 3

**Prerequisite**

**300480.1** Dynamics of Mechanical Systems OR **300035.3** Kinematics and Kinetics of Machines

**Incompatible Units**

300009 - Control Systems

.....

This unit covers the analysis and control of dynamical behaviour of mechanical systems. It discusses the fundamental principles in controlling mechanical dynamic systems. In particular, the unit will cover contents in: multi-degree of freedom vibration analysis and modelling; open and closed loop systems; transfer function and state variable methods in mechanical system modelling; concepts of stability; design and analyse control systems using root-locus, bode diagram and state-space methods for mechanical systems.

## 300601.5 Advanced Electrical Machines and Drives

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Electric Circuits and Basic Electro magnetics.

**Incompatible Units**

300208 - Variable Speed Electric Drives, 300204 - Special Electrical Machines

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

The subject covers various types of electrical motors and drive systems, their applications and control. The unit aims to introduce an advanced study of electrical machines and drives. It also covers application considerations and modern developments in high performance drive systems. This course covers various types of the speed control, the starting, the braking and the dynamics of different electrical machines and drives.

## 300969.3 Advanced Engineering Thesis 1: Preliminary Investigations

**Credit Points** 10 **Level** 4

**Unit Enrolment Restrictions**

Students must be enrolled in 3690 Bachelor of Engineering Advanced (Honours) and have completed 220 credit points with a Grade Point Average 5.0 or above.

.....

Advanced Engineering Thesis 1 - Preliminary Investigations unit consists of a research project designed and implemented under the direction of an academic supervisor and research mentor. This unit is the culmination of studies for students who have completed their first three years of an undergraduate degree and provides substantial training

in Preliminary Investigations. Under staff supervision, students are allocated a particular topic for their research, design their own programme of research, and perform the research. The emphasis of this unit is on the application of research knowledge gained in other units to the practical conduct of the individual research project. This unit provides final year Advanced engineering students with the opportunity to undertake research on a specialist topic within their Key Program of undergraduate study.

## 300666.4 Advanced Engineering Topic 1

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Students must be enrolled in course 3666 Bachelor of Engineering (Advanced) or 3690 Bachelor of Engineering Advanced (Honours) and must have a course GPA equal to or greater than 5.5. Students should have successfully completed 160 credit points to be able to study the advanced engineering topics in the unit.

.....

This unit provides students with the opportunity to tackle challenging engineering problems. They will study advanced topics in selected areas under the supervision of academics. The advanced topics will prepare students for further study and research.

## 300667.4 Advanced Engineering Topic 2

**Credit Points** 10 **Level** 4

**Prerequisite**

**300666.2** Advanced Engineering Topic 1

**Unit Enrolment Restrictions**

Students must be enrolled in course 3666 Bachelor of Engineering (Advanced) or 3690 Bachelor of Engineering Advanced (Honours) and must have a course GPA equal to or greater than 5.5.

.....

This unit provides students with the opportunity to tackle engineering problems that are more challenging than those in Advanced Engineering Topic 1. They will study advanced topics in selected areas under the supervision of academics. The advanced topics will prepare students for further study and research.

## 300604.5 Advanced Geotechnical Engineering

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Fundamental knowledge of soil mechanics.

**Equivalent Units**

300520 - Foundation Engineering (PG)

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

This unit will provide an overview of soil mechanics concepts required for the solution of practical geotechnical engineering problems. Students will be taught soil and foundation analysis including design techniques. The topics will cover shallow foundations, pile foundations, the stability of earth retaining structures, excavations, soft soils, groundwater flow and stability of slopes. Practical engineering cases will be emphasized.

## 301011.4 Advanced Highway Infrastructure

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Soil mechanics at undergraduate level.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

.....

This unit teaches pavement design and ground engineering design as part of construction of the highway. The aim is to provide students with advanced knowledge in designing pavement structures and ground improvement techniques to deal with soft and weak grounds for construction of highway and highway embankments. These aspects will be taught in relation to Australian practices.

## 301176.2 Advanced Mathematical Investigations

**Credit Points** 20 **Level** 7

**Assumed Knowledge**

Undergraduate level of knowledge in mathematics or statistics

**Unit Enrolment Restrictions**

Students must be enrolled in 8086 Master of Research.

.....

Advanced Mathematical Investigations is an integral part of the Master of Research for students planning a future in mathematical and/or statistical research. Students will carry out extensive investigations under the supervision of an academic staff member that will allow the development of skills, knowledge and a way of thinking that will assist in the learning of mathematics and/or statistics needed for research in their chosen field of mathematics. They will also develop their written and oral communication skills, culminating in a paper which will be written as though it is to be submitted to a mathematics/statistics journal for publication (including following the journal's requirements for presentation) and an oral presentation of the style expected at a mathematics/statistics conference.

## 300761.3 Advanced Mechanics of Materials

**Credit Points** 10 **Level** 3

**Prerequisite**

**300040.1** Mechanics of Materials

.....

This unit builds on the Mechanics of Materials to provide students with knowledge about impacts of deformation, stresses, strains and strength on materials and components essential in understanding how to improve mechanical design. Students' analytic and problem solving skills are developed through analysis of impacts including non-elastic deformation, orientation of the reference axes,

and how materials fail. Using knowledge about materials, students evaluate impacts on materials, the mechanisms to control properties of materials, and use mathematical calculations and techniques to determine stresses and strains on simple components. Overall, students develop the capacity to select appropriate materials and improve mechanical design.

## 301020.3 Advanced Mobile Robotics

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Some basic skills in MATLAB and C/C++ programming.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

This unit is designed to develop an understanding of the concepts involved in Mobile Robotics. The areas of mobile robot mechanics, localisation, map building and path planning will be introduced. Various sensors and their applications in mobile robotics are also to be introduced.

## 301024.3 Advanced Numerical Methods in Engineering

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Students should have prior knowledge of strain, stress and deflection analysis of simple structures as well as knowledge of energy principle for structural analysis.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

The finite element method is an essential tool for the analysis and design of machine parts and civil engineering structures. The objective of this unit is to introduce the principles of finite element method and the applications of one, two and three dimensional elements in solving various engineering problems.

## 301025.3 Advanced Power Quality

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Students are expected to be familiar with basic power system calculations including balanced and unbalanced three-phase systems.

**Unit Enrolment Restrictions**

Students must be enrolled in 3693 Master of Engineering, 3695 Graduate Certificate in Engineering or the Master of Research.

.....

This unit is to introduce students to power quality phenomena such as voltage sag/swell, distortions, unbalance, and flicker that occur in power systems. The unit also introduces terms and definitions associated with power quality, following which each phenomenon, that is, voltage sag/swell, transient overvoltage, and harmonics. In addition, flicker is presented and discussed in detail for students to understand the sources and impact of these occurrences on power system as well as typical mitigation techniques. Finally, students are introduced to power quality benchmarking, monitoring, assessment. In addition Advanced knowledge on network frequency responses is presented.

## 300599.5 Advanced Robotics

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Some Knowledge of MATLAB/Simulink

**Incompatible Units**

300176 - Advanced Robotics, 300192 - Mobile Robotic Systems

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

This unit is designed to introduce the engineering concepts involved in Robotics. The kinematics, dynamics, control and sensing aspects in robotics will be introduced. In addition, the concepts of artificial intelligence and their applications in robotics will also be discussed and assessed.

## 300596.5 Advanced Signal Processing

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Engineering mathematics, circuit theory, signals and systems.

**Equivalent Units**

300200 - Signal Processing 1

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

This unit covers the principles and techniques in signal processing. The subject matter includes advanced topics in discrete-time signals and systems, the z-transform and its applications in signal processing, advanced topics in the sampling of continuous-time signals, FIR and IIR filter design, filter structures, and the discrete Fourier transform and its computation. Students develop skills of analysing and designing digital signal processing systems.

## 301026.3 Advanced Smart Grids and Distributed Generation

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

This unit is designed to model, analyse and control of newly developing areas of distributed generation and smart grids. The unit will cover modelling, control, simulation and protection of such systems. The unit will also cover the impacts of renewable sources and power electronics on the operation of smart grids and micro-grids. The unit will also

cover environmental and economic impacts of such systems.

## 401414.1 Advanced Sport and Exercise Science

**Credit Points** 20 **Level** 7

**Assumed Knowledge**

Students to have completed an undergraduate degree in Sport and Exercise Science or other closely related Health, Allied Health or Medical Science/Medicine undergraduate equivalent.

**Unit Enrolment Restrictions**

Students must be enrolled in 8083 - Bachelor of Research Studies/ Masters of Research

**Special Requirements - Essential Equipment**

Students must meet discipline specific requirements, e.g. personal protective clothing.

.....

Please note, unit 401291.1 Advanced Sport and Exercise Science replaced by 401414.1 Advanced Sport and Exercise Science from 2020.This unit provides Bachelor of Research Studies/Masters of Research candidates with an interest in Sport & Exercise Science with an opportunity to further their knowledge and skill-sets in the field. Working closely with their assigned supervisor(s), students will prepare a work-plan to further enhance their theoretical knowledge through a combination of independent and guided-study. The unit will provide students with an opportunity to strengthen their knowledge and expertise in their selected field of Sport & Exercise Science. The unit is focused on the development of discipline-specific knowledge (theoretical and practical) to prepare students for their research thesis and future career in a Sport & Exercise Science related field.

## 301013.3 Advanced Statistical Hydrology

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

This unit covers at-site flood frequency analysis, regional flood frequency analysis, trend analysis of hydrological data, linear regression analysis and multivariate statistical techniques to solve advanced hydrological problems.

## 300594.6 Advanced Structural Analysis

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Students must have knowledge in engineering mathematics, engineering mechanics at intermediate level and structural analysis at fundamental level.

**Incompatible Units**

300205 - Linear and Nonlinear Analysis of Structures, 300367 - Advanced Structural Engineering, 300195 - Numerical and Finite Element Methods

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

.....

This unit will introduce students at postgraduate level to structural analysis of trusses, beams, frames and plates. It covers the slope defection method and matrix method for analysis of beams, trusses and frames, and the bending and buckling analysis of beams and plates under various loading conditions. The theories learned in classes will be reinforced in practical sessions by using computer software packages.

## 301021.3 Advanced Thermal and Fluid Engineering

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Fundamental knowledge of fluid mechanics, theory of thermodynamics, knowledge of heat transfer including conduction, convection.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

This unit covers fundamental principles in the thermal and fluid engineering. While the main focus will remain on incompressible fluids, effects of compressible fluids will also be discussed. The contents of this unit include fluid mechanics, thermodynamics and heat transfer. Students will learn the engineering applications of thermal and fluid principles.

## 301009.3 Advanced Timber Structures

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

.....

This unit enables students to gain an in-depth knowledge into timber structures based on Australian Standards. Design of timber beams, floors, columns and connections will be introduced with a focus on the use of plywood, round timbers, glue-laminated timber and structural laminated veneer lumber.

## 301196.2 Advanced Topics in Artificial Intelligence

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

This unit requires basic skills in programming with either JAVA or C++ as the programming language.

**Incompatible Units**

300245 Intelligent Agents; 300385 Automated Negotiation and e-Trading; 300769 Intelligent Agents for eMarkets

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit introduces the most fundamental techniques of artificial intelligence (AI), including knowledge representation, searching, machine learning and intelligent agents. Students will learn the basic theories and algorithms that are essential in the design and development of intelligent systems. The unit will focus on two typical AI applications: game playing and e-trading. Students will have the chance of using existing multiagent system platforms to design and develop intelligent software for game playing and automated trading in e-markets.

## 301236.2 Advanced Topics in Cybersecurity

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

The students should be familiar with the fundamentals of computer networking and security. It is advisable that the students must have either taken appropriate units in these areas (e.g., 300695 Network Technologies and 300696 Systems and Network Security) or have equivalent knowledge.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit focuses on the advanced features of Cybersecurity, contemporary views on security, and the solutions that aim to protect the emerging services and technologies. The emphasis is on the development of student skills to enable them to do proficient research and development works and studies in the cybersecurity discipline. On successful completion of this unit, students will be equipped with an in-depth understanding of relevant issues, attacks on massively interconnected systems, and the evolving approaches to improve the reliability of advanced services.

## 300694.4 Advanced Topics in ICT

**Credit Points** 10 **Level** 7

**Prerequisite**

**301005.1** Professional Practice and Communication

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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The information and communications technologies are advancing at an ever-increasing rate. The whole world is now interconnected. The World Wide Web community is actively engaged in developing the next generation of the Web. Social networking on the Internet is facilitated by the latest developments such as Facebook, YouTube and MySpace. Artificial Intelligence is increasingly intertwined with the decisions we make every day. Large scale storage technologies are leading to Cloud Computing where data and applications may reside anywhere in the world. Research in how to access meaningful data from the vast amounts on the Web has led to initiatives such as Semantic Web and Linked Data. Mashups mix data from disparate sources to enable users to work more efficiently. Wireless and mobile computing are changing the market place. All of these trends are still in their early stages. To make sense of all these developments, the top echelons of the World Wide Web Consortium are actively engaged in creating a new discipline called Web Science. Advanced Topics in ICT will enable the students to appreciate the scale of new developments and create prototypes of applications in their desired ambit. This unit consists of three Topics selected each semester. Assessment will be by a series of discussion paper assignments here students will show they have met the unit learning outcomes.

## 300252.4 Advanced Topics in Networking

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Students should be familiar with the fundamentals of computer networking. In particular, students should have a good understanding of the OSI model, the TCP/IP protocol suite, and current Internet and networking technologies. Therefore, it is strongly advised that students must have either taken an appropriate unit in computer networking (e. g., 300695 Network Technologies), or have equivalent knowledge.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

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This unit focuses on the advanced features of networked systems and the emerging network technologies and services. The unit provides students with an in-depth understanding of relevant protocols, the emerging standards, and standards organisations. The emphasis of the unit is on development of the student skills to enable them to do proficient research and development works and studies in the computer networking discipline.

## 301017.3 Advanced Waste Management

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

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This unit covers sources, identification and characterisation of solid and hazardous waste generated from the community. Sustainable management of waste incorporating minimisation, recycle, recovery and disposable options is discussed. Also, atmospheric pollutants and their control, greenhouse gases and their impact on climate change are examined.

## 300595.5 Advanced Water Engineering

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Exposure to basic hydraulics and engineering hydrologic principles.

**Incompatible Units**

300766 Hydrology; 300983 Surface Water Hydrology

**Unit Enrolment Restrictions**

This is a specialised unit in a specialist discipline in Master of Engineering program. Students must be enrolled in a postgraduate engineering program undertaking a Civil Engineering specialisation or in the Master of Research.

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This unit introduces advanced principles of engineering hydrology as it pertains to the surface water component of the hydrologic cycle. Students are exposed to floodplain analysis techniques. The focus is on practical engineering solutions to issues originating from catchment development. Students are exposed to commonly used hydraulic and hydrologic software packages to delineate flooded areas resulting from such developments.

## 300777.2 Air Quality and Climate Change

**Credit Points** 10 **Level** 3

**Equivalent Units**

EH321A - Air Quality Assessment and Management (UG), 300628 - Air Quality Management

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This unit is designed for students who wish to gain knowledge of air pollution, its causes and control methods. Topics include: Pollution types and sources, ambient air quality ; meteorology and climate change;; emission testing; odour and hydrocarbon control;. At the completion of this unit the student will have a good understanding in the following: Pollution types and sources; Effects of air pollution; Influence of meteorology; Indoor air quality; Dispersion modelling; Monitoring of stationary and mobile sources; Climate Change , and Global air pollution issues.

## EH321A.1 Air Quality Assessment & Management (UG)

**Credit Points** 10 **Level** 3

**Equivalent Units**

EH302A - Air Quality Assessment and Management

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From 2009 this unit was replaced by 300628 - Air Quality Management. This unit is designed for students who wish to gain knowledge of air pollution, it's causes and control methods. Topics include: clean air legislation; air pollution; meteorology; ambient air quality; emission testing; odour and hydrocarbon control; control technology; emissions inventory. At the completion of this unit the student will have a good understanding in the following: pollution types and sources; effects of air pollution; influence of meteorology; indoor air quality; dispersion modelling; monitoring and control of pollution from stationary and mobile sources; legislation and standards, and global air pollution issues.

## 200811.6 Alternative Dispute Resolution

**Credit Points** 10 **Level** 2

**Corequisite**

**200977.3** Fundamentals of Australian Law OR **200006.2** Introduction to Law

**Incompatible Units**

200293 - Alternative Dispute Resolution, 200812 Conflict Resolution

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Alternative Dispute Resolution (ADR) processes are no longer 'alternative' but a major part of the contemporary justice system. Modern legal practice requires lawyers to negotiate settlements on behalf of clients and advise clients how to resolve disputes without litigation. Non-adversarial processes offer many benefits to parties, professionals and the community. This unit will introduce you to the theory and practice of alternative dispute resolution processes and provide you with the opportunity to develop key ADR practice.

## 101646.3 Analysis of Spatial Data

**Credit Points** 10 **Level** 2

**Equivalent Units**

400343 - Analysis of Spatial Data

**Unit Enrolment Restrictions**

Successful completion of 40 credit points.

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The making and the use of maps. This unit involves the critical examination of the way geographical data is produced, analysed, mapped and used to inform both private and public decisions. Natural environment, health, accessibility and residential amenity are examples of phenomena that have an important geographical dimension. Policy responses to these phenomena need to be specific with regard to locations and places. Geographic information systems software and census will be used to produce maps based on the analysis and interpretation of data relating to the student's field of interest.

## 401175.1 Analytic Approaches in Epidemiology

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Introductory skills in epidemiology, including measures of disease frequency and association, epidemiologic study designs, and principles of bias and confounding.

**Prerequisite**

**401076.1** Introduction to Epidemiology OR **401173.1** Introduction to Clinical Epidemiology

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit extends the basic principles of epidemiology introduced in 401076 ‘Introduction to Epidemiology’ and equips students with practical analytical skills to design and conduct epidemiological studies. The unit considers the principle models of causation and analytical approaches to epidemiological study design and analysis. Students will use causal diagrams and evidence from the literature to develop analytic strategies for specific study designs, develop practical skills in calculating and interpreting measures of association and effect modification, and be introduced to principles and strategies for quantitative bias analysis.

## 301312.1 Applied Machine Learning

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Some probability and statistics knowledge would be advantageous.

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This unit introduces the foundation and concepts underpinning Machine Learning (ML) at a more abstract level, and provides more focus on its practical applications in areas such as: the classification and extraction of text data from various documents and web pages, image processing, Google's PageRank algorithm and relational data mining (RDM). These learning objectives are achieved through various ML software and a series of practicals and projects. The unit covers the concepts and notions of supervised, unsupervised and reinforcement learning, perceptron, neural networks, support vector machines (SVM), knowledge representation (KR) based RDM, and a comprehensive introduction to the Scikit-learn ML Python libraries.

## 300986.3 Applied Mechanics

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Student should have prior knowledge of strain, stress and deflection analysis of simple structures.

**Prerequisite**

**300732.2** Structural Analysis

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Applied mechanics deals with the mechanical responses of structural components under various loading and support conditions. This unit will introduce the theoretical foundations and solution methods for the stability and dynamic responses of beams, columns and plates and their associated applications in engineering practices.

## 800215.1 Applied research with marginalised populations and sensitive health topics

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Students will need basic knowledge of research design/ approaches e.g. 800166 'Research Design 1: Theories of Enquiry' or 401076 'Introduction to Epidemiology' or 401080 'Research Protocol Design and Practice' or similar.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit will teach students practical knowledge and skills for conducting research with marginalised populations and on sensitive health topics. Students will learn ethical, methodological, and practical considerations in applied qualitative and mixed method research. Upon completion of the unit students will be able to develop a theoretically coherent qualitative or mixed method research protocol and justify their decision making at every stage of the research process. The skills developed in this unit will enable students to adapt research methods to ensure the integrity of the research process with marginalised populations and sensitive health topics.

## 301197.3 Architecture Studio - Fundamentals of Analogue Design

**Credit Points** 20 **Level** 2

**Unit Enrolment Restrictions**

Must be enrolled in 3753 Bachelor of Architectural Design or 3768 Postgraduate Bridging Program (Architecture). Students not enrolled in 3753 or 3768 who wish to enrol into this unit should have a 5.0 minimum GPA and are required to discuss with the Academic Course Advisor.

**Special Requirements - Essential Equipment**

Drawing and model making supplies (pencils, pens, hardcover sketchbook, architectural scale ruler). A full list will be issued during orientation. A personal laptop is recommended for students who undertake the full 6 semester degree sequence to facilitate their studies (512MB hard drive, 8GB RAM, high quality graphics processor) – specifications will be issued during orientation. Each semester will require students to purchase consumables such as paper, card, plastic, plywood, adhesives, blades, and other essential materials required for assessment tasks.

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This unit will introduce students to fundamentals of spatial composition as it relates to visual and temporal experience in architectural contexts. Project-based assessments will involve the creation of 2D and 3D compositions that explore traditional organisational strategies, classical principles of geometry, materiality, experiential phenomena, and representation. Students will work with analogue and traditional tools including freehand drawing and conventional shop equipment. The unit will also provide an introduction to the history, theory, and discourse of architecture from 4000BC to the Enlightenment.

## 301198.4 Architecture Studio - Fundamentals of Digital Design

**Credit Points** 20 **Level** 2

**Unit Enrolment Restrictions**

Students must be enrolled in 3753 Bachelor of Architectural Design or 3768 Postgraduate Bridging Program (Architecture). Students not enrolled in 3753 or 3768 who wish to enrol into this unit should have a 5.0 minimum GPA and are required to discuss with the Academic Course Advisor.

**Special Requirements - Essential Equipment**

Drawing and model making supplies (pencils, pens, hardcover sketchbook, architectural scale ruler). A full list will be issued during orientation. A personal laptop is recommended for students who undertake the full 6 semester degree sequence to facilitate their studies (512MB hard drive, 8GB RAM, high quality graphics processor) – specifications will be issued during orientation. Each semester will require students to purchase consumables such as paper, card, plastic, plywood, adhesives, blades, and other essential materials required for assessment tasks.

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This unit introduces students to fundamentals of spatial organisation and human experience in the built environment. Principles of making will be practiced and analysed for their relationship to architectural outcomes, the study of Modern organisational strategies, materiality, experiential phenomena, and abstraction. Students work on project-based assessments that involve an iterative process of reflection and refinement, the use of digital techniques of 3D design including NURBS modelling and rapid prototyping to explore architectural concepts. This work is contextualised as students learn about the history, theory, and discourse of architecture from the Industrial Revolution to the Present.

## 301201.2 Architecture Studio - Global Cities

**Credit Points** 20 **Level** 3

**Prerequisite**

**301199.1** Architecture Studio - Rethinking the Sub-urban AND **301200.1** Architecture Studio - Rethinking Urbanism

**Unit Enrolment Restrictions**

Students must be enrolled in 3753 Bachelor of Architectural Design. Students not enrolled in 3753 who wish to enrol into this unit should have a 5.0 minimum GPA and are required to discuss with the Academic Course Advisor.

**Special Requirements - Essential Equipment**

Students are required to purchase consumables such as paper, card, plastic, plywood, adhesives, blades, and other essential materials for assessment tasks.

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This unit will situate learning in the context of the Global City. Projects will be used to investigate scenarios that are common to the contemporary condition of the developing world and the expanding metropolis in various international contexts. Students will either travel to international sites, work with international partners, or work remotely on problems beyond the Australian context. Work integrated learning will be a key feature of the Global Cities studio and will involve relevant members of the professional community to help lead studio investigations. Assessments will include complex urban projects at a large scale, developed using the design, communications, technical, and theoretical studies that have underpinned their education. Assessments will be project-based in real world scenarios and will incorporate sustainable strategies of design. Studies will be supplemented by tuition in structural design and will also be informed by concurrent studies in building science.

## 301199.3 Architecture Studio - Rethinking the Sub-urban

**Credit Points** 20 **Level** 3

**Prerequisite**

**301197.1** Architecture Studio - Fundamentals of Analogue Design AND **301198.1** Architecture Studio - Fundamentals of Digital Design

**Unit Enrolment Restrictions**

Students must be enrolled in 3753 Bachelor of Architectural Design. Students not enrolled in 3753 who wish to enrol into this unit should have a 5.0 minimum GPA and are required to discuss with the Academic Course Advisor.

**Special Requirements - Essential Equipment**

Students are required to purchase consumables such as paper, card, plastic, plywood, adhesives, blades, and other essential materials for assessment tasks.

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This unit will introduce the concept of Sub-urban Transformation, where the architect is an agent of progress and change in the built environment. Students will learn to use architectural design techniques as a medium for speculation and advocacy in the public realm and in daily life of the city. Rethinking the Sub-urban will investigate domesticity at the scale of residential projects and communities. Students will be concurrently trained in the use of Building Information Modelling (BIM) as a means to develop project work and collaborate as they explore new ways of building the suburban fabric. Assessments will be project-based in real world scenarios and will incorporate sustainable strategies of design.

## 301200.3 Architecture Studio - Rethinking Urbanism

**Credit Points** 20 **Level** 3

**Prerequisite**

**301197.1** Architecture Studio - Fundamentals of Analogue Design AND **301198.1** Architecture Studio - Fundamentals of Digital Design

**Unit Enrolment Restrictions**

Students must be enrolled in 3753 Bachelor of Architectural Design. Students not enrolled in 3753 who wish to enrol into this unit should have a 5.0 minimum GPA and are required to discuss with the Academic Course Advisor.

**Special Requirements - Essential Equipment**

Students are required to purchase consumables such as paper, card, plastic, plywood, adhesives, blades, and other essential materials for assessment tasks.

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This unit will extend the concept of Urban Transformation, where the architect is an agent of progress and change in the built environment. Students will refine their use of architectural design as a medium for speculation and advocacy in the public realm and in daily life of the city. Rethinking Urbanism will investigate architecture and civic space at the scale of public projects. Students will use various models of three-dimensional representation for communication and experimentation with new ways of building the urban fabric. Assessments will be project-based in real world scenarios and will incorporate sustainable strategies of design.

## 301202.2 Architecture Studio - The Infrastructural

**Credit Points** 20 **Level** 3

**Prerequisite**

**301199.1** Architecture Studio - Rethinking the Sub-urban AND **301200.1** Architecture Studio - Rethinking Urbanism

**Unit Enrolment Restrictions**

Students must be enrolled in 3753 Bachelor of Architectural Design. Students not enrolled in 3753 who wish to enrol into this unit should have a 5.0 minimum GPA and are required to discuss with the Academic Course Advisor.

**Special Requirements - Essential Equipment**

Students are required to purchase consumables such as paper, card, plastic, plywood, adhesives, blades, and other essential materials for assessment tasks.

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This unit situates learning in the context of the major urban public projects that sit at the intersection of architecture, infrastructure, and urban design and which highlight the pressure of population growth, climate change, or other significant demographic, economic, political, or ecological transformations. Work integrated learning is a key feature of the Rethinking Infrastructure studio which involve relevant members of the professional community to help lead studio investigations and/or embed students in professional practices. Projects include architectural responses to complex urban and infrastructural projects at a large scale such as transit oriented development, high density housing, landscape urbanism. Students develop professional practice skills on these real world projects and incorporate sustainable strategies of design as well as learning skills in advocacy, entrepreneurship, and professional readiness.

## 301316.2 Architecture Studio: Urban Architecture

**Credit Points** 20 **Level** 4

**Unit Enrolment Restrictions**

Students must be enrolled in 3753 Bachelor of Architectural Design or 3768 Postgraduate Bridging Program (Architecture). Students not enrolled in 3753 or 3768 who wish to enrol into this unit should have a 5.0 minimum GPA and are required to discuss with the Academic Course Advisor.

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This unit will introduce students to urban architecture with complex brief requirements, site conditions and technological considerations. Emphasis is on design resolution considering historical, geographical and social aspects. Experimentation at various theoretical levels is expected and students are encouraged to deliver ambitious and imaginative architectural responses.

## 101923.1 Australian Design

**Credit Points** 10 **Level** 2

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This unit continues the focus on academic and visual literacies for visual communication designers initiated in level one units. Students will investigate the Australian visual communication design profession, largely through the documentation of selected output and established methods across industry sectors producing graphic, photographic, illustrative, typographic, broadcast, interactive and online design. Lectures and selected case studies will outline professional scenarios and support the student in learning about the design industry's organisation and methods. Assessment tasks are designed to develop research and writing skills through the evaluation of professional resources and publications.

## 300735.4 Automated Manufacturing

**Credit Points** 10 **Level** 2

**Prerequisite**

Students must have passed the two units 200237 Mathematics for Engineers 1 and 300463 Fundamentals of Mechanics OR must have passed the two units 200191 Fundamentals of Mathematics and 300304 Sustainable Design: Materials Technology before they can enrol in this unit.

**Equivalent Units**

86301 - Automated Manufacturing

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The aim of this unit is to provide an introduction into the fundamentals of manufacturing operations, automation and control technologies including numerical control and industrial robotics. In addition, material handling and identification technologies will be discussed as well as manufacturing systems. The latter will examine single-station manufacturing cells, manual assembly lines, automated production and assembly lines as well as flexible manufacturing systems. Mechanical behaviour of common materials used in manufacturing will be studied, and their suitability for various manufacturing processes including metal cutting, sheet-metal forming, bulk deformation and abrasion. Other processes such as rapid prototyping and rapid tooling will also be included.

## 200818.1 Bank Management

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Students who have completed the unit Corporate Financial Management or equivalent will find this unit more manageable.

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Bank Management provides students with an understanding of modern banking by identifying the main types of risk confronted by banks and applying relevant techniques to measure and manage those risks. Students will recognise that the risks faced, and the methods and markets through which these risks are managed, are similar for the managers of other types of financial institutions such as building societies, investment banks and insurance companies as well as, to some extent, non-financial corporates. Consequently, the unit will prepare students for careers throughout the financial services sector and will also be beneficial for other business professionals.

## 102525.1 Bilingualism and Education

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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Bilingualism and Biculturalism are important aspects of life in Australia. Throughout much of the world, bi-multilingualism is the norm for both children and adults. This unit aims to give students an understanding and appreciation of the most important facets and manifestations of bi-multilingualism and bi-multiculturalism, in the linguistic, cognitive, personal, societal and educational spheres. It also aims to show students how this unit relates to broader studies in education, humanities, linguistics, and social sciences. This unit equips students with current research theories and methods in working effectively in early childhood and primary education, language teaching and other workplaces in bi-multilingual and bi-multicultural contexts.

## 401140.3 Biomechanics

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

It is assumed that students have knowledge of structural and functional anatomy of the human body. Students also need to be able to apply basic concepts in maths and physics.

**Equivalent Units**

400139 - Biomehanics and Kinesiology, 400882 - Introduction to Biomechanics

**Unit Enrolment Restrictions**

Students must be enrolled in 4658 Bachelor of Health Science (Sport and Exercise Science), 4706 Bachelor of Physiotherapy, 4708 Bachelor of Podiatric Medicine or 4709 Bachelor of Podiatric Medicine (Honours) or 3769 Bachelor of Data Science or 4656 Bachelor of Health Science, 6000 Diploma in Health Science/Bachelor of Health Science or 6001 Diploma in Health Science/ Bachelor of Health Science (Health and Physical Education).

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The study of biomechanics, the science that examines the forces acting upon a structure and the effects of these forces, is essential for understanding how the human body moves during daily activities, exercise and sport. It is also important when considering where problems may arise with human movement, such as with disease processes, over exercising and injury and postural pathology. This unit is designed to introduce the student to biomechanics by studying: the mechanical principles of human movement: balance and equilibrium: mechanical factors involved in tissue type and motion; and the analysis of human movement.

## 301292.2 Biomechanics in Product Innovation

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

The ability to generate design concepts that reference human scale and basic knowledge in prototype model fabrication is desirable

**Equivalent Units**

301080 Design Studio 4: Innovation through Systems Thinking

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Designing optimal interactive environments for people requires an overview of human and contextual factors that impact on tasks and activities in the use of everyday products and services as well as specialised equipment. Students will complete a design challenge to improve product usability with healthy and rewarding outcomes for users through an evidence-based approach. Design challenges are completed with the input of specialist health and science resources with students applying knowledge in the areas of human anatomy, physics and the biomechanics of motion providing insights for new product innovation.

## 301122.3 Biomedical Electronics

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Basic electronic (amplifiers and filters); computer skills.

**Prerequisite**

**300005.3** Circuit Theory OR **300735.3** Automated Manufacturing

**Special Requirements - Essential Equipment**

Access to a computer at SCEM computer Labs

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This unit will cover recent advances in biomedical electronics including electronic diagnostic devices, implanted devices, human-computer-interface, bioinstrumentation and neuromorphic engineering. Topics covered span from the bio-electromagnetism and related applications to regulatory aspects (IEC standards and TGA/ FDA approval processes) and electrical safety of instrumentation. This unit will have a strong practical design focus with laboratories and tutorials focused on the design of real instrumentation (including manufacturing) dealing with real biomedical signals.

## 301121.4 Biomedical Signals and Data Analysis

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Basic programming skills.

**Prerequisite**

**300005.3** Circuit Theory OR **300735.3** Automated Manufacturing

**Unit Enrolment Restrictions**

Students must be enrolled in Bachelor of Engineering (Honours).

**Special Requirements - Essential Equipment**

Access to a computer at SCEM computer Labs.

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This unit will cover recent advances in biomedical signal and data analysis including electrocardiography, electroencephalography, human-computer-interface, electromyography, biomedical images and spikes processing. Topics covered span from basic to advanced signal processing. This unit will have a strong practical

design focus with laboratories and tutorials focused on the design of usable software packages dealing with real biomedical signals.

## 200088.3 Brand and Product Management

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Basic understanding of market research and an understanding of the core principles of consumer behaviour.

**Prerequisite**

**200083.2** Marketing Principles

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Brand and Product Management focuses on the role brands and products play in the planning and execution of marketing strategies. Aspects of brand and product management include the building, implementation and maintenance of brands within a range of different contexts are covered in this unit. Students will develop a critical view of the inherent challenges firms encounter in creating and maintaining brands from a marketing perspective. This unit uses workshop sessions and online activities to create an interactive learning environment and bring the content to life.

## 101756.2 Bridging the Gap: Re-engaging Indigenous Learners

**Credit Points** 10 **Level** 3

**Equivalent Units**

101116 - Issues in Aboriginal Education

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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This unit is available to all undergraduate students who have open electives. Bridging the Gap: Re-engaging Indigenous Australian Learners will provide students with knowledge and skills to develop teaching strategies that will bridge the education gaps existing for many Indigenous Australian (Indigenous) learners. Students will gain knowledge of quality teaching frameworks to engage all learners and in particular Indigenous learners. The unit will also increase students' awareness of the complexities of the cultural inter-relationships between many Indigenous and non-Indigenous learners. The unit focuses on empowering students to effectively teach: Indigenous Australians; Indigenous studies in consultation with Indigenous communities; and assess as well as evaluate resources for use in teaching Indigenous studies.

## 300706.3 Building 1

**Credit Points** 10 **Level** 1

**Equivalent Units**

BG101A - Building 1, 700070 - Building 1 (WSTC)

**Unit Enrolment Restrictions**

Students in the following courses cannot enrol in this unit: Bachelor of Business; Bachelor of Business/Bachelor of Laws; Bachelor of Business and Commerce; Bachelor of Business and Commerce/Bachelor of Laws; Bachelor of Business and Commerce (Advanced Business Leadership); Bachelor of Business (Advanced Business Leadership)

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In 2020 this unit replaced by 301226 – Residential Building. This unit provides students with an overview of regulations and construction techniques with an emphasis on low-rise residential buildings in the Australian context. It covers general process; building regulations; environmental issues; surveying techniques; structural elements (footings, framing and bracing); envelope; services; fit-out and finishes.

## 700070.3 Building 1 (WSTC)

**Credit Points** 10 **Level** 1

**Equivalent Units**

300706 - Building 1 301226 - Residential Building

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year 2 units.

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From Term 1, 2021 this unit is replaced by the equivalent unit 700304 Residential Building (WSTC). This unit provides students with an overview of regulations and construction techniques with an emphasis on low-rise residential buildings in the Australian context. It covers general process; building regulations; environmental issues; surveying techniques; structural elements (footings, framing and bracing); envelope; services; fit-out and finishes.

## 300707.2 Building 2

**Credit Points** 10 **Level** 1

**Equivalent Units**

BG103A - Building 2; 700071 - Building 2 (WSTC)

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From Spring 2020, this unit will be replaced by 301227 - Non-Residential Building. The aim of this unit is to provide students with an overview of the design, classification, applicable Australian Standards, structural systems, construction techniques, materials handling systems, building services, fit-out and finishes for larger scale buildings.

## 700071.3 Building 2 (WSTC)

**Credit Points** 10 **Level** 1

**Equivalent Units**

300707 - Building 2

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College. Students enrolled in Extended Diplomas must

pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year Two units.

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This unit has been replaced by equivalanet unit 700305 from Term 3, 2021. The aim of this unit is to provide students with an overview of the design, classification, applicable Australian Standards, structural systems, construction techniques, materials handling systems, building services, fit-out and finishes for larger scale buildings.

## 700318.2 Building Calculations (WSTC Prep)

**Credit Points** 10 **Level** Z

**Equivalent Units**

700264 - Scientific Methods in Construction Management

**Unit Enrolment Restrictions**

Students must be enrolled at The College in 6031 - Diploma in Building Design Management / Bachelor of Building Design Management, 7136 - Diploma in Building Design Extended, 6045 - Diploma in Construction Technology/Bachelor of Construction Technology or 7165 - Diploma in Construction Technology Extended.

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This unit is designed to assist students to become competent in the field of introductory senior mathematics. It introduces and reinforces mathematical skills in the areas of scale, application of scale, Pythagoras theory, trigonometry, sine and cosine, application of sine and cosine, building volumes, application of building volumes, gradients, application of gradients and thermal flow. Emphasis is placed on developing key competencies in building calculations.

## 301234.1 Building Cost Studies

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Building construction including residential, light industrial and small commercial, basic building measurement and estimating.

.....

This unit is designed to provide students with experience of advanced quantity surveying techniques. Students will develop an ability to perform various cost studies, consider sustainability issues and make whole life cost choices. The aim of this unit is to give students a hands-on experience of the tendering process for construction professionals. Students will undertake a team research project to determine the optimum parameters for a building infrastructure estimation.

## 301087.3 Building Design Process

**Credit Points** 10 **Level** 3

**Prerequisite**

**301086.1** Design Brief Formulation

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Building design is an iterative process. In this unit students will gain experience in generating design proposals and responding to simulated client and stakeholder feedback. Holistic designsolutions that address economic, environmental and social issues (triple bottom line assessment) will be generated for realistic building projects.

## 301099.3 Building Design Project 1

**Credit Points** 20 **Level** 4

**Assumed Knowledge**

Students should be familiar with the content from the first three years of the Building Design Management degree, including expertise in CAD, iterative design process and construction technology.

**Prerequisite**

**301087.1** Building Design Process

**Incompatible Units**

301101 Building Design Project 1 (Honours)

**Unit Enrolment Restrictions**

Students must be enrolled in Bachelor of Building Design Management or Diploma in Building Design Management/ Bachelor of Building Design Management. Students must have successfully completed 220 credit points.

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In this unit students will source a suitable design project to complete as a capstone work which illustrates the skills they have developed throughout their study program. The project will contain a level of complexity exceeding that of previous building designs produced in the program. Diverse stakeholder input on the projects impact will be gathered and assessed.

## 301101.3 Building Design Project 1 (Honours)

**Credit Points** 20 **Level** 4

**Assumed Knowledge**

Students should be familiar with the content from the first three years of the Building Design Management degree, including expertise in CAD, iterative design process and construction technology.

**Prerequisite**

**301087.1** Building Design Process

**Incompatible Units**

301099 Building Design Project 1

**Unit Enrolment Restrictions**

Students must be enrolled in 3727 Bachelor of Building Design Management.

.....

In this unit, students who have a record of superior performance in the Building Design Management program, will source a suitable design project at their own initiative, to complete as a capstone work which illustrates the skills they have developed throughout their study program. The project will contain a high level of complexity exceeding that

of previous building designs produced in the program. Both the complexity level and the number of design constraints will distinguish the project undertaken for this unit from the non-honours stream unit. Diverse stakeholder input on the project's impact will be gathered and assessed. The design solution generated will show mastery of complex design problems which integrate technical knowledge with economic and social responsibility. Superior skill in resolving design conflicts will be demonstrated.

## 301100.3 Building Design Project 2

**Credit Points** 20 **Level** 4

**Assumed Knowledge**

Students should be familiar with the content from the first three years of the Building Design Management degree, including expertise in CAD, iterative design process and construction technology.

**Prerequisite**

**301099.1** Building Design Project 1

**Incompatible Units**

301102 Building Project 2 (Honours)

**Unit Enrolment Restrictions**

Students must be enrolled in Bachelor of Building Design Management or Diploma in Building Design Management/ Bachelor of Building Design Management. Students must have successfully completed 260 credit points of study.

.....

In this unit students will develop the design solution they created in Building Design Project 1 into a fully resolved CAD model suitable for costing, scheduling and contracting. Construction Certificate documentation will be generated.

## 301102.3 Building Design Project 2 (Honours)

**Credit Points** 20 **Level** 4

**Assumed Knowledge**

Students should be familiar with the content from the first three years of the Building Design Management degree, including expertise in CAD, iterative design process and construction technology.

**Prerequisite**

**301101.1** Building Design Project 1 (Honours)

**Incompatible Units**

301100 Building Design Project 2

**Unit Enrolment Restrictions**

Students must be enrolled in 3727 Bachelor of Building Design Management.

.....

In this unit, students who have a record of superior performance in the program will continue to develop the design solution they created in Building Design Project 1 (Honours) into a fully resolved CAD model suitable for costing, scheduling and contracting. Construction Certificate documentation of professional standard will be generated. Both the complexity level and the number of design constraints will distinguish the project undertaken for this unit from the non-honours stream unit. Diverse stakeholder input on the projects impact will be gathered and assessed. Complex constraints relating to buildability and efficient project delivery will be resolved. Strict budgetary constraints will be imposed and students will be expected to demonstrate a capacity to use lateral thinking and generate creative solutions in response to problematic situations which arise during project delivery but which were unknown at project commencement.

## BG302A.1 Building Regulation Studies

**Credit Points** 10 **Level** 3

**Equivalent Units**

300722 - Building Regulation Studies

.....

In 2010 this unit replaced by 300722 - Building Regulation Studies. To develop an awareness of the regulatory construction and equipment techniques in the detection, prevention, behaviour and control of fire; an understanding of and an appreciation for buildings; to extend knowledge of the modern built environment for appraisal at Council level in planning and development procedures related to the inspection role, and the legal responsibilities in fire engineering and hazard assessment. Building regulations and fire safety; performance and prescription; fire literature and development; materials in fire, fire resisting construction; detection/alarm systems; egress and human behaviour; spread of fire; work cover; smoke movement and control; fire fighting equipment; essential services and heritage buildings.

## 300722.2 Building Regulations Studies

**Credit Points** 10 **Level** 3

**Equivalent Units**

BG302A - Building Regulation Studies

.....

In 2013 this unit replaced by 300885 Building Regulations Studies. This unit develops an awareness of the regulations used to control risk in buildings. Major sources of risk, such as fire and public health, are identified and controlled. Building regulations of high risk regions, such as cyclonic, seismic and bushfire-prone areas, are also discussed. The unit emphasises the safety of vulnerable occupants, such as young children, disabled people and the elderly. The unit also explores recent developments in the BCA concerning energy efficiency.

## 300885.3 Building Regulations Studies

**Credit Points** 10 **Level** 2

**Equivalent Units**

BG302A - Building Regulation Studies, 300722 - Building Regulation Studies

.....

This unit develops an awareness of the regulations used to control risk in buildings. Major sources of risk, such as fire and public health, are identified and controlled. Building regulations of high risk regions, such as cyclonic, seismic and bushfire-prone areas, are also discussed. The unit emphasises the safety of vulnerable occupants, such as

young children, disabled people and the elderly. The unit also explores recent developments in the National Construction Code (NCC: formerly BCA) concerning energy efficiency.

## 700308.1 Building Science (WSTC)

**Credit Points** 10 **Level** 1

**Equivalent Units**

301219 - Building Science

**Unit Enrolment Restrictions**

Students must be enrolled at The College. Students in Extended Diploma courses must pass 40 CPs of preparatory units in order to enrol in this unit. Students in Integrated Diploma courses must pass or be enrolled in the preparatory units in order to enrol in this unit.

.....

This unit provides students with an introductory overview of the way in which scientific principles impact on the structure, fabric and performance of the built environment. Areas covered will include the concepts of force, energy and work in building structures; properties of common building materials; and significant aspects of heat, light and sound in buildings. All the theoretical content will be contextualised within examples drawn from the construction industry. Students will be able to recognise the critical data required for practical decision-making in the area of building technology.

## 301085.3 Built Heritage

**Credit Points** 10 **Level** 2

.....

This unit explores the history of building design in Australia and applies this contextual knowledge to the design of additions to existing buildings, as well as, to infill development in heritage areas. Built form, scale, materials, finishes and streetscape are considered so that new structures complement rather than detract from existing heritage buildings. The appropriateness of preservation, restoration, renovation, retrofit and adaptation strategies for older buildings is examined in the context of market and regulatory constraints on built heritage.

## 200896.3 Business Analysis Seminars

**Credit Points** 10 **Level** 4

**Unit Enrolment Restrictions**

Students must be enrolled in course 8083 Bachelor of Research Studies/Master of Research.

.....

This unit introduces students to exemplary research in selected contemporary issues in business practice and policy. Presented through a series of seminars by leading business academics, selected issues will be examined in terms of the competing definitions of the problem, the methods of analysis to be used to address the problem, components of the problems and relationships to other contemporary issues. As business research is inherently inter-disciplinary and involves multiple stakeholders, relevant and competing theoretical perspectives explaining selected issues will be examined. Different methods of investigation and analysis of issues will be evaluated.

## 200091.4 Business to Business Marketing

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Basic knowledge of marketing concepts, theories and frameworks

**Prerequisite**

**200083.2** Marketing Principles

**Equivalent Units**

MK318A - Business-to- Business Marketing, 61723 - Business-to-Business Marketing

.....

Unlike consumer marketing where an individual makes decisions based on their own needs or those of their household, business-to-business (B2B) marketing involves individuals or companies promoting and selling products and/or services to other companies. This unit encompasses all these aspects of B2B marketing including organisational buying behaviour, B2B market research, management of the marketing mix from a B2B perspective, relationship and network marketing, supply chain management and Customer Relationship Management (CRM) strategies, and business marketing strategy.

## 200158.4 Business, Society and Policy

**Credit Points** 10 **Level** 2

**Equivalent Units**

700093 - Business, Society and Policy (UWSC)

**Unit Enrolment Restrictions**

Successful completion of 30 credit points.

.....

Business organisations influence and evolve through ongoing social, political and technological change. Taking the perspective that businesses both affect and are affected by government and society, the unit examines the complexities of interactions between three sectors: business, society and government. The unit emphasises the social responsibility of business. The different ideologies used to legitimise the actions of business, the responses from society and the role of government (local, transnational and global) in regulating interactions, are critically evaluated.

## 101265.3 Children's Culture

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

.....

This unit explores the concept of children's culture and the diversity of cultures to which children belong. The unit focuses on current debates about childhood and children's culture, including the rise of children's consumer culture. Students will gain insights into children's lives and culture

by critically engaging with a variety of objects and institutions that are part of children's lives, for example, toys, videogames, children's television programs, films and books. The unit will also examine the role of adults in children's culture, including in marketing and advertising to children.

## 101626.5 Children's Literature: Image and Text

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

.....

This unit focuses on the interrelationships between image and text in children's literature. The unit examines both picture books and other image-based children's texts, including electronic texts and graphic novels. The unit will examine children's texts as cultural artefacts, theories of visual literacy and how image and text combine to create meaning. Students will have the opportunity to create their own picture book for their final project.

## 102192.1 Cinema and Censorship

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Successful completion of 40 credit points of study in currently enrolled course.

.....

Censorship of the arts has long been a contentious issue. This unit examines the cultural contexts and debates surrounding censorship, as well as the institutions, policies, and people that figure prominently in the history of cinema censorship. Censorship discourses reveal shifts in how 'national morality' is constructed, and often display cultural anxieties about changing meanings of gender, sexuality, race, and class. This unit offers an historical survey of film censorship from the 1890s to today, utilising various theoretical approaches (feminist theory, critical race theory, queer theory, and cultural theory), with an emphasis on topics such as obscenity, pornography, violence, and blasphemy.

## 101984.1 Cinema and Experience

**Credit Points** 10 **Level** 3

**Equivalent Units**

63062 - Film, Genre and Affect, 100256 - Film and Affect

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

.....

Film Studies and Literary Studies share some common theoretical foundations and analytical methods. However, considered in its cultural contexts, the question of how a film is experienced by spectators becomes critical. Films engage spectators in an embodied and affective way. The unit will argue that we cannot understand how a film takes up thematic and cultural questions without exploring the dynamics of spectatorship. This unit will explore some key approaches to film spectatorship and will look at how cinematic techniques shape narrative, genre, character, and thematic and cultural questions into embodied and affective experience.

## 300005.4 Circuit Theory

**Credit Points** 10 **Level** 2

**Prerequisite**

**300021.2** Electrical Fundamentals AND **200238.2** Mathematics for Engineers 2 OR **301337.1** Mathematics for Engineers 2 (Advanced)

**Equivalent Units**

700243 - Circuit Theory (WSTC AssocD)

.....

This unit aims to equip the student with the tools needed for the design and analysis of electrical and electronic circuits. It also introduces various techniques of circuit analysis, mutual coupling, frequency response and two-port networks.

## 700243.4 Circuit Theory (WSTC AssocD)

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Ordinary Differential Equations, including first and second order. Laplace transforms, definition, inverse transform, s-shift, unit step function and Dirac delta function, transform of a derivative, solving differential equations.

**Prerequisite**

**700104.2** Electrical Fundamentals (WSTC AssocD)

**Equivalent Units**

300005 - Circuit Theory

**Unit Enrolment Restrictions**

Students must be enrolled in 7022 Associate Degree in Engineering

.....

This unit aims to equip the student with the tools needed for the design and analysis of electrical and electronic circuits. It also introduces various techniques of circuit analysis, convolution, mutual coupling, frequency response and two-ports loops.Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## 101589.3 Cities: Introduction to Urban Studies

**Credit Points** 10 **Level** 1

**Equivalent Units**

101342 - The Urban Context

.....

This unit is a keystone in the Geography and Urban Studies major. It aims to introduce students to the major urban challenges that will shape our society in the future and to the major substantive concerns in the field of urban

management and planning It will develop students' understanding of how their own urban experiences are shaped by broader historical, cultural, economic, and social forces, and will enable students to compare the Australian urban context and issues with those in other world regions.

## 101870.1 Climate Change and Culture

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

.....

This unit introduces climate change as a complex social, cultural and political phenomenon, one that is re-shaping the way we live in the world and future lifestyles. Because climate change is highly contested, the course critically examines the issue from different theoretical, disciplinary, social and cultural perspectives. Topics range from cultural theory and forms of social action to the history and construction of climate change as concepts and debates around nature, culture, science, economics and consumption; to social justice, Indigenous knowledge systems, popular culture, the media and Australian politics, global governance, cities and urban planning.

## 800225.1 Clinical Research in Health Science

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a post-graduate course, Masters by Research, PhD or 8083 Bachelor of Research Studies

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This unit will teach students practical knowledge and skills for conducting clinical research within the field of Health Science. Students will learn ethical, methodological and practical considerations in applied quantitative and mixed-method research within the framework of a human clinical trial. Upon completion of the unit students will have an understanding of basic human clinical trial design, novel clinical trial designs, specialisation within various study fields. They will also have consideration of stakeholders and translational importance, trial governance, regulations and the Therapeutic Goods Administration (TGA), intellectual property, commercialisation, recruitment, and advertising and marketing. Finally, they will understand the importance of translational impact via publications and the media, and be able to synthesise trial data via knowing how to conduct systematic reviews and meta-analyses.

## 301042.2 Cloud Computing

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Basic knowledge of networking and computer systems.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

.....

Cloud computing has become a driving force for information technology over the past several years, and it is moving towards a future in which we won't rely on local computers, but on centralised facilities operated by third-party compute and storage utilities. Governments, research institutes, and industry leaders are rushing to adopt Cloud Computing to solve their ever-increasing computing and storage problems arising in the Internet Age. This unit offers "Academy Cloud Foundations" (ACF) curriculum as part of Amazon Web Services (AWS) Academy. Students will develop knowledge and skills in the areas of virtualization technologies, cloud architecture, AWS core services and their pricing, security, architecture, and support.

## 301282.2 Co-Designing Change with Local Communities

**Credit Points** 10 **Level** 1

**Equivalent Units**

300776 Applied Erognomics; 301073 Design Studio 1: Patterns and Products

**Special Requirements - Essential Equipment**

Online work safety module must have been completed prior to workshop space use. Specific requirements regarding machine use may require student safety inductions per apparatus i.e. drill, sander, laser cutter. Students must bring your own device to all Lecture and Tutorial classes, as these will be required to complete the assignment tasks.

.....

Collaboration is the foundation for some of the most successful world achievements ranging from medical breakthroughs, to space travel, to smart phones, to drones. Effective collaboration in diverse teams promotes a dynamic environment for creativity and innovation with good prospects for developing novel solutions. In a real world collaborative, co-design partnership with an external university partner, students will create a design proposal and prototype, based on a project brief. Through this collaborative process, students will develop skills in research, conceptualisation, communication and reflective practice whilst prototyping and testing their ideas before presenting them to their client.

## 300068.3 Communication Electronics

**Credit Points** 10 **Level** 5

**Prerequisite**

**200238.2** Mathematics for Engineers 2 AND **300025.3** Electronics

**Equivalent Units**

84488 - Advanced Electronics

.....

The unit presents the theory and many of the devices used in radio frequency (RF) communication electronics. S-parameters are presented and advanced to cover areas such as- multiport networks and lossless networks. S-parameter measurement techniques are presented and tested in the lab. The analysis/design of common RF components including power splitters, directional couplers, circulators and phase shifters are developed. Microstrip transmission lines are presented as a practical means of interconnecting devices at RF frequencies. RF transistor

amplifier and oscillator design is presented in detail. RF mixers, RF filters and RF receiver architectures are also discussed in detail.

## 700275.1 Communication Skills for Construction Management (WSTC Prep)

**Credit Points** 10 **Level** Z

**Unit Enrolment Restrictions**

Students must be enrolled in 7136 Diploma in Building Design Management Extended or 7137 Diploma in Construction Management Extended.

.....

This unit is replaced by 700310 Essential Literacy for Construction Professionals I (WSTC Prep) from Term 3, 2020. This unit is designed to improve the English proficiency of Construction Management students to enable them to achieve academic success. The unit assists students to comprehend academic and professional texts, identify key ideas and evidence, and identify and apply certain rhetorical moves which are common in academic communication. It also aims to help students compare and contrast ideas across texts, improve grammatical skills that relate to academic writing, summarise and synthesise information, and understand why, when and how to cite information.

## 300007.4 Communication Systems

**Credit Points** 10 **Level** 3

**Prerequisite**

**300057.3** Signals and Systems

For 3771 Bachelor of Engineering Advanced (Honours) students must have passed 301352 Circuits and Signals

.....

This unit will provide a basic introduction to communication systems and techniques. Specific topics covered include energy and power spectral density, amplitude modulation, frequency modulation, pulse modulation, an overview of digital modulation techniques, noise in communication systems and an overview of current telecommunication systems; spread spectrum systems, optical communication systems, radio broadcasting and mobile communication systems.

## 300987.3 Composite Structures

**Credit Points** 10 **Level** 4

**Prerequisite**

**300730.2** Steel Structures AND **300736.2** Concrete Structures (UG)

.....

This unit builds on knowledge gained in steel and concrete structures, especially the design of structural members using either steel or concrete. Students will learn the design of composite beams, floors, columns and connections based on Australian and International standards as well as mechanics of materials.

## 300999.3 Computational Fluid Dynamics

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Numerical methods, thermal dynamics and fluid mechanics

**Prerequisite**

**300027.2** Engineering Computing AND **300759.1** Thermal and Fluid Engineering

.....

This unit introduces students to the fundamentals of computational fluid dynamics. The unit covers the conventional methods for solving the ordinary and partial differential equations. The numerical method for solving the inviscid flow and the viscous flow problems will be introduced. The students learn the application of the commercial software in the engineering problems.

## 102509.2 Computational Thinking across the STEM Curriculum

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

An understanding of at least one STEM (science, technology, engineering or mathematics) school syllabus.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

.....

This unit will enable students to develop knowledge of computational thinking as it can be applied across the STEM curriculum in schools. Students will learn about the nature of computational thinking as a problem solving approach which can be applied to produce digital solutions. The unit will allow students to undertake a critical examination of innovative, interdisciplinary approaches to the development of computational thinking and relevant pedagogical strategies to maximise student learning and engagement with STEM disciplines.

## 301000.4 Computer Aided Engineering

**Credit Points** 10 **Level** 4

**Prerequisite**

**300488.4** Numerical Methods in Engineering

**Special Requirements - Essential Equipment**

Computer Aided Engineering Packages (Computer Aided Design and Finite element analysis) – ANSYS and SolidWorks

.....

This unit describes the basics and fundamentals of computer aided engineering focusing on the advanced topics of finite element methods, which is a powerful numerical tool for analysing a wide range of engineering problems. Through applied projects students will apply the finite element method (FEM)-based computer aided engineering (CAE) and its applications in the fields of solid mechanics, fluid mechanics, thermodynamics and heat transfer and product design and development as well. The development of students' academic skills in research and

communication are also achieved through the completion of FEM-based CAE projects.

## 300092.1 Computer Architecture

**Credit Points** 10 **Level** 3

**Prerequisite**

**300096.1** Computer Organisation

**Equivalent Units**

14949 - Computer Architecture

.....

This unit is designed for computer science students, particularly those interested in systems programming, hardware/software interfaces, and computer system performance evaluation. The topics cover memory system organisation and architecture, CPU functional organisation, pipelined and superscalar microarchitectures, multiprocessor systems, and I/O systems. After completing this unit students will understand the major issues in the state-of-the-art computer architecture, especially modern microprocessors, and will be able to use this knowledge as a basis for product choice and systems configuration.

## 700201.3 Computer Studies (WSTC Prep)

**Credit Points** 10 **Level** Z

**Equivalent Units**

900028 - Computer Studies (UWSC)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College.

.....

This unit introduces and develops basic competencies in using computers and application software for the Building Design Management and Construction Management industries. The ability to use computers and application software for creating word-processed documents, spreadsheets, as well as understanding the processes involved with creating and analysing designs and managing projects has become an integral part of the required skill set for these industries. This unit has been developed to enhance students' practical ability as well as build a theoretical foundation for further study.

## 300736.4 Concrete Structures (UG)

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Knowledge of engineering mechanics and statics.

**Prerequisite**

**300733.2** Introduction to Structural Engineering

**Corequisite**

**300732.2** Structural Analysis

**Equivalent Units**

85251 - Concrete Structures (UG)

.....

This unit covers the basic elements of structural behaviour and design with reinforced and pre-stressed concrete. Students will learn to analyse the section capacity of reinforced concrete beams, slabs, and columns, and design simple suspended structures. The unit places a strong emphasis on the process of structural design.

## 700290.2 Construction Communication (WSTC)

**Credit Points** 10 **Level** 1

**Equivalent Units**

300674 Engineering, Design & Construction Practice, 300975 Professional Competencies, 700038 Engineering, Design & Construction Practice (WSTC), 700107 Engineering, Design & Construction Practice (Assoc Deg), 301213 Construction Communication and 700154 Professional Competencies (WSTC)

**Unit Enrolment Restrictions**

Students must be enrolled at The College. Students enrolled in Extended Diploma courses: 7136 Dip Building Design Management Extended and 7137 Dip Construction Management Extended must have passed 40 credit points of preparatory units in order to enrol in this unit.

.....

This unit encourages students to explore professional responsibilities and challenges faced by construction professionals. Students are introduced to the construction management profession through the use of industry case studies and project problems. Students engage in a research and problem-solving task that addresses sustainability imperatives and fosters fundamental research and communication skills. Special emphasis is placed on academic and business literacy, project management and teamwork which equip students for subsequent academic and professional contexts.

## 300886.3 Construction in Practice 1

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Local Government planning requirements, residential construction details, quantity surveying, contract documentation, site planning

**Prerequisite**

**300706.2** Building 1 AND **300729.1** Graphic Communication and Design AND **300707.2** Building 2

**Equivalent Units**

200482 - Construction in Practice 1

.....

This unit is designed to allow the student to gain experience with the complexity of the construction industry by integrating knowledge from earlier units. The unit involves group work on construction planning and management, regulatory control and client liaison required for initiating and completing a residential construction project.

## 200482.2 Construction in Practice 1

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Local Government planning requirements, residential construction details, quantity surveying, contract documentation, site planning.

**Prerequisite**

**BG101A.1** Building 1 AND **BG103A.1** Building 2 AND **BG105A.1** Graphic Communication and Design (V1)

.....

In 2013 this unit replaced by 300886 - Construction in Practice 1. This unit is designed to allow the student to gain experience with the complexity of the construction industry by integrating knowledge from earlier units. The unit involves group work on construction planning and management, regulatory control and client liaison required for initiating and completing a residential construction project.

## 200484.7 Construction in Practice 3

**Credit Points** 10 **Level** 4

**Corequisite**

Students in 2607 Bachelor of Construction Management must enrol in 300724 Industry Based Learning before enrolling in this unit.

**Equivalent Units**

BG408A - Building in Practice 3

**Unit Enrolment Restrictions**

Successful completion of 200 credit points.

.....

This unit enables students to integrate and develop knowledge gained earlier in the course allowing them to simulate industry practice. Students are given a brief to undertake large and complex construction projects (eg. high rise buildings, airport construction, or sports stadium construction). They then take account of regulatory control, financial limitations, and stakeholder impacts whilst managing a team and being flexible and responsive to changing demands.

## 200503.4 Construction Information Systems

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Students must be familiar with spreadsheet and database software. Students should also have a basic understanding of contract administration.

.....

This unit is designed to provide skills and knowledge for information management technology and practice as it relates to the building industry. The unit gives and overview of information management, data collection and storage, information classification systems, communications, specialist computer applications and artificial intelligence.

## 301160.4 Construction Management Honours Thesis

**Credit Points** 20 **Level** 4

**Incompatible Units**

300536 - Major Project in Construction

**Unit Enrolment Restrictions**

Students must be enrolled in course 2607 Bachelor of Construction Management. Students must have successfully completed 220 credit points and must have a course GPA equal to or greater than 5.0.

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This unit provides honours level students with the opportunity to undertake research on a specialist topic within their program of undergraduate studies. Each student is assigned to a supervisor (an expert researcher) based on the chosen research topic. Students are expected to meet the supervisor regularly and work progressively to complete the research. This research will be an extended investigation of a chosen subject that is undertaken using appropriate research methods. In addition to the specialist knowledge on the chosen research topic, students will learn a range of skills including academic writing, project management, critical thinking and analytical skills.

## 300728.5 Construction Planning

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

A basic understanding of the construction process of residential and commercial buildings and estimating principles.

**Prerequisite**

**300707.2** Building 2 OR **200486.3** Quantity Surveying 1 OR **301208.1** Building Measurement

**Equivalent Units**

PL302A - Construction Planning

.....

This unit is intended to provide students with the ability to organise the resources required for a major construction project; to plan the sequence and timing of construction operations; and to assess the risk inherent in achieving a construction schedule.

## 301223.1 Construction Research Project

**Credit Points** 20 **Level** 4

**Prerequisite**

**301243.1** Construction Research Methods

**Unit Enrolment Restrictions**

Students must complete 200 credit points in currently enrolled course before enrolling in this unit.

.....

In this unit students will undertake practical research into identified technical, managerial or economic problems in the construction industry. Groups of up to four students will collectively undertake these industry based research

projects and produce an individual final report plus another tangible outcome as agreed at the project proposal stage. A wide range of indicative practical projects will be available to assist and direct the research effort.

## 300720.3 Construction Technology 1 (Civil)

**Credit Points** 10 **Level** 2

**Prerequisite**

**300706.2** Building 1 OR **300707.2** Building 2

**Equivalent Units**

BG204A - Construction Technology 1 (Civil)

.....

This unit develops students' knowledge and skills in appraising site requirements for construction purposes, both at the pre tendering and construction phase of a project. Content: Soil classification, site investigation, site safety, plant and equipment, trenches, detention/retention pits and basins, temporary structures, demolition, site dewatering, building surveying, and site environmental control.

## 300721.5 Construction Technology 2 (Substructure)

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Basic knowledge of building technology from TAFE, university or practical experience.

**Equivalent Units**

BG207A - Construction Technology 2 (Substructure)

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This unit will further develop students knowledge of substructures. Students will investigate how applied loads and the foundation reaction determine the construction of different retaining walls and footings. Students will specifically examine how surface and ground water affect a sub-structure. Students will be expected to solve difficult foundation problems using innovative techniques, including underpinning, grouting and temporary substructures. The types of sub-structures include strip footings, waffle-pod slabs, end-bearing and friction piles, gravity and cantilever retaining walls and tied-earth structures.

## 200502.6 Construction Technology 3 (Concrete Construction)

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Awareness of standard construction systems for residential and commercial construction.

.....

The aim of this unit is to introduce students to the concept of structures, loads and the effect of loads on structures in relation to concrete construction. Students will have an in-depth understanding of concrete as a construction material. It covers the construction technology aspects of concrete structural components and systems, including beams, columns, slabs and frames. Emphasis will be given to formwork design and construction. Students will be introduced to the relevant Australian Standards for concrete construction. The unit also aims at developing students' ability to deal professionally with other building professionals, including architects and structural engineers.

## 200470.7 Construction Technology 4 (Steel Construction)

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Students undertaking this unit should have prior knowledge of construction techniques associated with residential and non-residential building and a basic understanding of structural systems.

.....

This unit deals with the construction of structural steelwork. Students will gain a better understanding of mechanical properties of steel. It covers various components in structural steelwork, and their behaviour under loads. Students will also be introduced to various frame systems in multi-story and high-rise construction and relevant Australian Standards for steel construction. Emphasis will be given to safe erection and assembly of structural steelwork. Due consideration will be given to the requirements of Workcover in relation to site safety and material handling. An introduction will also be given for Steel-concrete composite construction.

## 200471.6 Construction Technology 5 (Envelope)

**Credit Points** 10 **Level** 4

**Corequisite**

Students in 2607 Bachelor of Construction Management must enrol in 300724 Industry Based Learning before enrolling in this unit.

.....

After undertaking this unit, you should understand the way internal spaces are designed and constructed to optimise thermal, visual and acoustic comfort and for energy efficiency.

## 300725.5 Construction Technology 6 (Services)

**Credit Points** 10 **Level** 4

**Equivalent Units**

BG406A Construction Technology 6 (Services)

**Unit Enrolment Restrictions**

Students must be enrolled in Bachelor of Construction Management, Bachelor of Engineering, Bachelor of Engineering Advanced (Honours), Bachelor of Building Design Management, Bachelor of Engineering (Honours) or Diploma in Building Design Management/Bachelor of Building Design Management.

.....

To provide students with a vehicle to develop knowledge and skills needed to comprehend the design of services in major buildings, and in so doing engender a life-long

interpretation of the intricacies of physical installation and their critical sequence in the construction process.

## 700256.3 Construction Work Safety (WSTC)

**Credit Points** 10 **Level** 1

**Equivalent Units**

301061 - Construction Work Safety

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year 2 units.

.....

This unit describes the context of safety management in the Australian construction industry. The topics covered include: The poor long-term record in the construction industry on Workplace Health and Safety (WHS); Strategies for improving the industry performance; Introduction to hazard identification and risk management; and Individual safety awareness and personal responsibility.

## 200084.2 Consumer Behaviour

**Credit Points** 10 **Level** 1

**Equivalent Units**

61721 - Consumer Behaviour, MK105A - Buyer Behaviour, 700027 Consumer Behaviour

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A focus on the consumer is critical in marketing philosophy. Effective marketing strategies are necessarily formulated as a result of the understanding of basic consumer behaviour. The aim of the unit Consumer Behaviour is to introduce students to consumer behaviour as a critical component in marketing philosophy, and fundamental to the development of effective marketing strategies. This unit applies concepts, theories and models derived from disciplines such as sociology, anthropology, psychology, economics, and mass communications theory to a consumer context. Students will learn to apply such concepts, theories and models through a range of individual and collaborative means using a blended learning design that draws on current and future consumer trends in various marketplaces.

## 102413.1 Consumer Culture

**Credit Points** 10 **Level** 3

**Equivalent Units**

100994 - Consumer Culture

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course

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Consumption and consumerism are words that frequently have negative connotations in popular usage, yet globally, rates of consumption and consumerism continue to grow. This unit presents cultural research that investigates the range of consequences - positive, negative or otherwise - that the rise of consumer culture has brought to contemporary global societies. Students analyse a range of cultural products and practices, and consider topics including the ethics of consumption, the role of consumption in forming identities, how consumer culture relates to class, gender, race and ethnicity, the rise of brands, and consumer culture in the digital age.

## 200922.2 Consumers, Firms and Markets

**Credit Points** 10 **Level** 1

**Equivalent Units**

700249 - Consumers, Firms and Markets (WSTC)

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From 2022 this unit replaced by 201099 Consumers, Firms and Markets. This unit is an introduction to microeconomics. It provides students with an understanding of basic concepts such as value, rational consumer behaviour, the behaviour of firms in various market structures, the efficiency and failings of markets, the distribution of wealth and income, and the role of government regulation and intervention. It illuminates these concepts by considering and debating their application to contemporary economic and social issues such as: the influence of marketing on consumer choices, the concentration of market power in Australian industries, rising income and wealth inequality, minimum wage laws, and governmental responses to environmental problems and climate change.

## 201099.1 Consumers, Firms and Markets

**Credit Points** 10 **Level** 1

**Equivalent Units**

700249 - Consumers, Firms and Markets (WSTC), 200922 - Consumers, Firms and Markets

.....

This unit is an introduction to microeconomics. It provides students with an understanding of basic concepts such as value, rational consumer behaviour, the behaviour of firms in various market structures, the efficiency and failings of markets, the distribution of wealth and income, and the role of government regulation and intervention. It illuminates these concepts by considering and debating their application to contemporary economic and social issues such as: the influence of marketing on consumer choices, the concentration of market power in Australian industries, rising income and wealth inequality, minimum wage laws, and governmental responses to environmental problems and climate change.

## 400335.3 Contemporary Issues in Sport Management

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Students should have an understanding of the objectives in Sport Marketing 1

**Equivalent Units**

B3087 - Contemporary Issues in Sport Management

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This unit will be replaced by 200999 Sport and Society from 2018. Sport management operates in an environment where political, economic and legal influences impact on the running of sporting organisations. This unit critically examines contemporary issues influencing the management of sport in Australia.

## 200568.3 Contemporary Management Issues

**Credit Points** 10 **Level** 3

**Prerequisite**

**200571.2** Management Dynamics OR **200912.1** Enterprise Leadership OR **MG102A.3** Management Foundations

**Equivalent Units**

H3740 - Contemporary Management Issues

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This is an engaged unit that requires students to undertake real-world projects to support selected industry or community partners. The unit blends in-class and online activities as well as individual and group work, with self-directed problem-based learning. The focus of students' learning is on sustainable business, including the economic, social and environmental dimensions of business. The in-class workshops support students to conduct the required engagement activities with industry or community partners. As a third-year unit, attention is given to students' application of the knowledge and skills already acquired in their degree programs, and on the practice of business management skills.

## 102275.1 Contextual Design Studies

**Credit Points** 10 **Level** 3

**Prerequisite**

**102266.1** Researching the Visual

**Equivalent Units**

101080 - Design Issues

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Contextual design studies is the study of what happens around design practice – before, during and after – to explain its meaning and effect. Successful communication design has always depended on the connection between form, content, audience and context, and the designer's abilities to analyse, understand and clarify the contexts of communication have become more important to creative practice. In this unit students will learn to apply the theoretical frameworks of semiotic, thematic and rhetorical analysis used by the interdisciplinary field of Design Studies to interpret design’s potential as cultural expression and communication. Students will analyse visual signs and conventions as both targeted and tacit responses to a range of contexts revealing design’s interests in marketplaces, society and identity. Students will analyse various graphic examples, and design literature, as they investigate the significance and agency of design interactions, media artefacts and systems.

## 301090.2 Contextual Inquiry

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Knowledge related to the successful completion of Year 1 and 2 is assumed.

**Prerequisite**

**301083.1** Design Studio 5: Symbol and Meaning Making

**Equivalent Units**

300314 - Designed Inquiry

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From Spring 2020, this unit will be replaced by 301291 - Design Research Methods (Advanced). Design and user research methods are critical in establishing frameworks for efficient and effective process and resource utilisation in designing, conducting and presenting research findings leading to design briefs that are succinct yet open to new innovations. A range of research design methods are presented and students are guided to the strategic selection of methods appropriate to their own self-sourced project theme. Data collection instruments are designed, operationalised, data coded and analysed via both qualitative and quantitative techniques and discussed in a vibrant peer environment inspired by design thinking and other research methods unique to the design profession.

## 101751.2 Contextualising Indigenous Australia (Day Mode)

**Credit Points** 10 **Level** 1

**Equivalent Units**

300455 - Indigenous Australia: Back to the Future

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This unit will provide a comprehensive overview of Indigenous Australian cultures, histories and identities. The scope of the unit spans pre-colonisation to the twenty-first century across Australia and all relevant fields of study. A cross-section of institutional, community and popular culture contexts will be explored through flipped mode of delivery supported by face to face tutorials. This body of knowledge will provide a context for various professions and discussions. Students will have the exciting opportunity to hear from a diverse range of Indigenous educators from academics to artists through to performers and community elders. A broad understanding of Indigenous Australia will position students to be advocates for change in contemporary Australia.

## 700309.1 Contract Administration (WSTC)

**Credit Points** 10 **Level** 2

**Equivalent Units**

301224 Contract Administration

**Incompatible Units**

200487 Quantity Surveying 2

**Unit Enrolment Restrictions**

Students must be enrolled at The College. Students in Extended courses must have passed 30 CPs of preparatory units prior to enrolling in this unit.

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In this unit, students will examine and investigate the contractual aspects with respect to time, cost, quality and scope in building contracts. The students will develop technical skills for the administration of construction contracts and be able to prepare payment certificates and cash flow statements.

## 200011.2 Contracts

**Credit Points** 10 **Level** 2

**Corequisite**

**200006.2** Introduction to Law OR **200977.1** Fundamentals of Australian Law

**Equivalent Units**

69018 - Law of Contract, F1003 - Contracts, LW301A - Contracts

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Contracts covers the formation of contracts, the requirement of writing, privity of contract, contractual terms and their interpretation, breach of contract, discharge of contractual obligations and elements vitiating its formation such as misrepresentation, misleading and deceptive conduct, mistake, undue influence, unconscionability, duress and discharge. Statutory developments are also considered such as the Contracts Review Act 1980 (NSW) and the Australian Consumer Law, as are the historic and theoretical aspects of the development of the law of contract.

## 300009.5 Control Systems

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

200238 - Mathematics for Engineers 2 • Ordinary Differential Equations • First order, Second order, and Higher order. • Laplace transforms • Multivariable Calculus • Functions of two or more variables • Double integrals • Triple integrals. Similar to that contained in 200238 - Mathematics for Engineers 2. Students should also have the appropriate background and competence in the safe use of computers, test equipment, components and data sheets.

**Prerequisite**

**300057.3** Signals and Systems OR **300480.2** Dynamics of Mechanical Systems

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This unit introduces the fundamental concepts of automatic control engineering. It covers traditional and contemporary design and analysis techniques; the concepts required to design continuous time and discrete time controllers. Matlab is utlilized considerably.

## 401178.1 Controversies in Epidemiology

**Credit Points** 10 **Level** 7

**Prerequisite**

**401076.1** Introduction to Epidemiology OR **401173.1** Introduction to Clinical Epidemiology

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit offers students an opportunity to synthesise theories and methodologies from epidemiology. It highlights current controversies and practices in epidemiology. Students attend weekly presentations on topics related to content area interests, and other relevant seminars. Students will convene with faculty to reflect on and critique components of research presentations relevant to the students' interest and to the contemporaneous topics being covered in the core epidemiology curriculum. Course assignments involve critical appraisal of conceptual and methodological issues presented in the seminars, and related issues relevant to student's own research.

## 102853.1 Cool Green Cities

**Credit Points** 10 **Level** 7

**Equivalent Units**

102698 - Green Urbanscapes: Bio-physical Functions and Services

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Climate change, urban expansion and densification result in hotter microclimates and loss of green infrastructure. The increasing frequency and severity of heatwaves, floods and droughts require changes to how we design and retrofit existing neighbourhoods and build new suburbs. Contemporary urban planning and design principles recognise blue and green infrastructure as a 'must have'. Blue and green infrastructure is key to building cool and resilient cities capable of functioning well within the social, environmental and economic challenges of the 21st century. This unit provides knowledge about what it takes to deliver cool green cities. Focusing on practical applications at precinct or suburb scale, it enables students to implement learned principles in their professional practice.

## 200923.1 Corporations, Economic Power and Policy

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Knowledge gained around consumers and markets, the Australian economy, economic methods and analysis.

**Equivalent Units**

200530 - Microeconomic Theory and Applications

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Australia's industrial, financial and retail sectors are dominated by powerful corporations which engage in a wide variety of competitive and cooperative behaviours. This unit examines how modern corporations position

themselves in terms of investment in large-scale production, technological innovation, the manipulation of information, marketing, and cooperative strategies to gain market share and enhance their profitability. It also explores the effects of the interactions of corporate behaviour and public policy, including the governmental function of constructing and regulating explicit market rules of exchange.

## 200924.3 Cost Benefit Analysis

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Basic understanding of economics.

**Prerequisite**

**200911.1** Enterprise Innovation and Markets OR **200525.3** Principles of Economics OR **200922.1** Consumers, Firms and Markets

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Students will learn and apply Cost Benefit Analysis, the most commonly used economic tool in business, consultancy and government organisations. The unit is a core unit in the Economics major but is open to all students who have a basic understanding of economics and a desire to improve their analytical skills and employability. At the completion of the unit, students will be able to explain the economic foundations of cost-benefit analysis and they will have experience with analysing, critically evaluating and developing a cost-benefit analysis for a specific proposal. Students will also consider risk analysis and cost-effectiveness analysis.

## 200862.1 Creating Change and Innovation

**Credit Points** 10 **Level** 3

**Equivalent Units**

200570 Management of Change, H3741 Management of Change

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This unit introduces the concepts of change and innovation as they relate to organisational transformation. It explores change as a human and social process, looking at the vital roles of leadership, entrepreneurship, and creativity in change management. In doing so, it provides the theoretical and practical understandings that you will need as both a student of change and a future manager.

## 301303.2 Creative Business Model Innovation

**Credit Points** 10 **Level** 4

**Unit Enrolment Restrictions**

Successful completion of 100 credit points

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Innovation requires an agile mindset (being flexible and responsive), a broad view of social, economic, and environmental factors, and awareness of interdisciplinary approaches to succeed in a competitive marketplace. Students explore strategic directions for enterprises in creative ways through practical engagement and application of business model innovation methods and tools in a fully online learning environment comprising digital content and live webinars. Creative sustainable business model specialists are sought after in the marketplace, and this unit provides insights in developing these specialist skills, thus highlighting students' potential as future business leaders.

## 301307.2 Creative Digital: Robots and Avatars

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Understanding of 3D CAD and basic programming is desirable.

**Equivalent Units**

301092 - Graphics 5: Creative Computing

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This is a project-based learning unit that assists students to creatively synthesise skills learned in previous units. Students are introduced to current problem solving in professional practice that negotiates between physical and digital components to form smart artefacts. That relation is represented with the development of an interactive robot and its digital mirror counterpart as its avatar. The unit also assists in the preparation of a professional portfolio show piece for job applications in the industry. Learning by experimentation, the unit links traditional skillsets including software and 3D printing with new forms of design, from engineering narratives to digital creativity within augmented and virtual environments.

## 102211.3 Creativity, Innovation and Design Thinking

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Students must be enrolled in The Academy @ Western Sydney or at the discretion of the Director of Academic Program and/or Head of The Academy and must have successfully completed 40 credit points of study.

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From 1H 2022 this unit replaced by 800237 Creativity, Design Thinking and Visualisation. The aim of this cross-disciplinary unit is to encourage students to explore their creative potential and broaden their perspectives of innovation through the lens of design thinking. Design thinking offers a range of strategic and practical approaches to both creativity and innovation including an understanding of stages of thinking and reflection; an evaluation of the dynamics of team work; the workings of conversation and dialogue to generate new thinking about complex problems. Students will learn about design thinking methodologies, and apply these towards addressing broader social issues in innovative and creative ways.

## 200010.3 Criminal Law

**Credit Points** 10 **Level** 2

**Corequisite**

**200006.2** Introduction to Law OR **200977.1** Fundamentals of Australian Law

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This unit introduces students to the basic principles of criminal law and criminal responsibility and the criminal justice process as located in its broader social and political context, including the impact of the criminal justice system on Indigenous Australians. Students will engage in collaborative class learning with a particular focus on legal problem solving and participate in a mock bail application.

## 101590.3 Cultural and Social Geographies

**Credit Points** 10 **Level** 2

**Equivalent Units**

700055 - Cultural and Social Geographies (UWSC)

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Examines the nexus between society, culture and place. Considers contemporary social and cultural planning issues including: local community relations, place management, place redefinitions, ethnic concentration, cultural precincts, and the spatial politics of gender and sexuality. The roles of cultural products in carrying spatial information and reinforcing identity are examined. Introduction to cultural and social geography, and developments in cognate fields of cultural studies and anthropology. Key theories of identity. Case studies range across ethnicity, religion, age, gender, sexuality, class and nationalism. The analysis and assessment advances an appreciation of social and cultural difference and social justice.

## 101967.1 Cultural History of Books and Reading

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Successful completion of 40 credit points of study in currently enrolled course.

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This unit examines the development of the book as a material and cultural object, and the evolution of cultures of reading from codex and clay tablet to digital book and e-Reader. Exploring the historical and technical change taking the book from singular object (painstakingly copied by hand and read by a learned elite) to 'book' as notional object (deliverable 'content', in a range of formats, to readers on demand), this unit focuses on moments of contestation and crisis in reading, writing and print culture: copyright and the role of authorship, censorship, the plundering of libraries, and that most radical proscription, book-burning.

## 102185.1 Culture, Discourse and Meaning

**Credit Points** 10 **Level** 3

**Incompatible Units**

101408 - Critical Discourse Analysis

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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In Culture, Discourse and Meaning students explore our culture by looking closely at how we make and share meaning. You look at how power operates by supporting and promoting some ideas and ways of life but not others. In Culture, Discourse and Meaning you also consider how students might change our culture. In your work in the unit, you will develop analytical, interpretive, and critical skills for culture analysis. Through project-based work, students will develop the capacity to analyse and critique the production and operations of power and consider changes in cultural practice.

## 102479.1 Cultures of Crime and Punishment

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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The focus of this unit is on the ways in which crime and punishment are defined and practiced in a range of different cultures, and how different countries' social customs and cultural values influence the evolution of their understanding of, and response to, criminal behaviour. Drawing on both theoretical frameworks and practical examples, the unit will provide students with an opportunity to work in a collaborative learning environment, working with both instructors and other students to undertake and communicate research logically.

## 201082.1 Customer Experience Fundamentals

**Credit Points** 10 **Level** 2

**Equivalent Units**

200084 - Consumer Behaviour

**Special Requirements - Essential Equipment**

An iPad, equivalent smart device, or laptop (PC/MAC) is essential in order for students to complete assessment and engage in tutorial activities.

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Customer experiences occur when there is interaction between a company and their customers. Increasing digitisation of this interface has resulted in a shift of buyer expectations where communication is no longer a one-way process. The result being that this exchange comprises of the customer journey where internal factors such as attitudes, learning and emotions combined with external factors such as culture, social communities, and global networks influence decisions. This unit introduces the complexity of technology driven relationships where customers become co-creators of their own personalized experiences and how companies can be part of this. Students will learn the importance of creating positive customer experiences and how this adds value to organisation strategy.

## 201084.1 Customer Insights

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

It is recommended that students have an understanding of data analytics

**Prerequisite**

**200032.7** Statistics for Business

**Equivalent Units**

200592 - Marketing Research, 200991 - Service Industry Analytics, 200085 - Fundamentals of Marketing Research

**Special Requirements - Essential Equipment**

A computer and internet access

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Digital technologies are generating large volumes of information (data) about customers and markets. The key is determining how to organise and analyse this data to generate useful insights about customers for marketing decisions. The focus of this unit is on data analysis and reasoning to better understand the culture of insight-driven businesses. Students will examine different sources of information and the processes needed to ensure the generation of quality output. Activities around data visualization, and the role of social media platforms which support this, will prepare students for their future business careers.

## 102529.2 Cyber Justice (UG)

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Successful completion of second-year subjects in cultural and society, history and political thought, law, psychology or criminology would be useful, but are not required. Experience of using social media would also be useful but not required.

**Incompatible Units**

201018 - Cyber Law and Justice

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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The world is being transformed by digital technologies. The same technologies that make life more comfortable for some can unleash violence and destruction for others. Cyber war and cyber terrorism offer new risks for the international community. Bullying, identity theft and bank fraud, on a more local level, are given a new life in the cyber world. Cyber technologies also provide enhanced opportunities for detecting and apprehending criminals, resolving disputes and modernising justice processes. New social spaces are opened up (social media networks, the 'dark web'), and new identities made possible (online grooming profile, avatars). How does the law keep up with the emergence of new crimes and technology-enhanced versions of old ones, and how do the cultural worlds of hackers, crackers and trackers work? The subject examines how justice processes and spaces, as well as criminal networks and strategies, are being reimagined to take advantage of the new technologies.

## 300997.3 Data Communications

**Credit Points** 10 **Level** 3

**Prerequisite**

**300057.3** Signals and Systems

**Incompatible Units**

300010 - Data Networks

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This unit is concerned with the principles and topics of fundamental importance to digital data communication, computer communication networks and telecommunications. The lower layers of the protocol structure (physical layer, data link layer and some aspects of the network layer) and the physical medium (hardware and transmission lines) are emphasized. An engineering approach will be taken to provide an insight to transmission and transmission media, communication techniques and transmission efficiency.

## 401179.2 Data Management and Programming for Epidemiology

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

High school mathematics (arithmetic, formulas and algebra, reading graphs). Basic computer competency and basic programming skills.

**Corequisite**

**401077.1** Introduction to Biostatistics

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

**Special Requirements - Essential Equipment**

Home computer or laptop or access to a machine on which software can be installed. (Necessary for assignments). Software required includes Git (free, open-source, multi-platform) and R (free, open-source, multi-platform).

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Modern epidemiology deals with ever increasing volumes of data and complexity of analysis. This course is aimed at equipping students with effective practices for managing data and programme code and ensuring the security of their data. Students will be taught the fundamentals of managing code and data in a revision control system as well as good programming practices and techniques which can form a basis for a robust, repeatable and test-driven research methodology. Programming instruction and exercises will use the SAS and R languages, and SQL databases.

## 300010.3 Data Networks

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Students are expected to have done an introductory Electrical Engineering course in Signals and Systems that includes continuous-time and discrete time forms of

signals, Fourier Transforms (in different forms) and an introduction to probability and random processes. An elementary knowledge of communication systems will also be assumed. Prior completion of Engineering Maths 3 and Communication Systems is recommended.

**Prerequisite**

**300057.3** Signals and Systems

**Equivalent Units**

84355 - Data Communication & Computer Networks, 89038 - Data Communications & Network Technology

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This unit is concerned with the principles and topics of fundamental importance to data communication, computer communication networks and telecommunications. The lower layers of the OSI reference model are emphasized (hardware, physical layer, data link layer and network layer). Also, it will cover all major network technologies-SONET, ATM, Internet, and Telephony. Essential network engineering topics such as protocol layering, multiple access, switching, scheduling, routing, congestion control, error control, flow control, and network security shall also be included. An engineering approach will be taken to provide an insight into network design.

## 102269.2 Data Visualisation

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Students should have at least moderate skills in producing documents or illustrations using Photoshop and Illustrator.

**Prerequisite**

**101922.1** Web and Time-based Design OR **102264.1** Graphic Design: Process and Practice

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We live in an era of data. The designer's role is increasingly one of structuring and transforming data into accessible and meaningful information. In this unit students will be introduced to basic techniques for the visual representation of data. This unit covers both how to design successful charts, maps, and diagrams, as well as how to use these graphics to compose cohesive storytelling pieces. Students will also discuss both practical and theoretical issues when visualising data, and how Graphic Design and Interactive Design principles apply to the visualisation of information. Students will learn how to design basic infographics and mock ups for interactive visualisations, and they will develop skills to start producing compelling and elegant infographics and data visualisation.

## 100996.3 Death and Culture

**Credit Points** 10 **Level** 3

**Equivalent Units**

SS240A - Death and Culture, 100902 - Death and Culture

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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This unit is a critical introduction to the social practices surrounding death in modernity. Although primarily addressing social arrangements in the West, the unit examines the bio-politics of death in a wider cultural framework, with attention to geographies of power and economic influence. The unit traces the historical development of concepts of the individual; the impact on Western ideas around death of genocide and modern warfare; and assesses contemporary ethical, social and medical controversies (like euthanasia and the trade in body parts). The unit attempts to demonstrate the relationship of death to: social institutions; ideas of community and the construction of self in modernity.

## 200485.2 Decision Making for Construction Professionals

**Credit Points** 10 **Level** 2

**Prerequisite**

**300674.2** Engineering, Design and Construction Practice

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From 2016 this unit will be replaced by 301105 Negotiation in the Built Environment. This unit will provide you with an understanding of decision-making and support the development of critical thinking skills. The skills that are learnt in this unit will be applied in the Construction in Practice strand, Major Project in Construction and Honours Thesis.

## 301015.3 Deep Foundations

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

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This unit covers advanced analysis and design criteria for deep foundations. Both statically and dynamically loaded deep foundations are covered including the site investigation methods and field testing methods adopted in practice for determining integrity and load carrying capacity. Appropriate computer software will be introduced to carry out the deep foundation design according to the Australian Standards.

## 301086.3 Design Brief Formulation

**Credit Points** 10 **Level** 3

**Prerequisite**

**300729.3** Graphic Communication and Design OR **301228.1** Drawing and CAD

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This unit explores the process of formulating the quantitative and qualitative requirements for a complex construction project. Students will analyse and evaluate competing parameters for a specific building project which contains residential, commercial and community facilities.

## 301290.2 Design Graphics: Communication for Manufacture

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Prior knowledge of computer aided design modelling as well as working knowledge of Australian Standard AS1100 for engineering drawing would be desirable

**Prerequisite**

**301287.1** Design Graphics: Engineering Documentation

**Equivalent Units**

300282 Industrial Graphics 2: Transition

**Special Requirements - Essential Equipment**

-Vernier Calipers - analogue or digital

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Students will design manufacture ready product samples through the use of computer graphics including three-dimensional (3D) surfacing and solids modelling methods used by professionals engaged in engineering and industrial design practice. Students will produce two-dimensional (2D) and three-dimensional (3D) documentation, which can be widely applied to facilitate the understanding and production of parts and assemblies.

## 301287.2 Design Graphics: Engineering Documentation

**Credit Points** 10 **Level** 2

**Equivalent Units**

301076 - Graphics 2: Visual Simulation

**Special Requirements - Essential Equipment**

Vernier Calipers - analogue or digital

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Current and future growth in the areas of product design, virtual reality, and high technology innovation industries require a foundation and working knowledge of 3D computer modelling. In this unit students will be introduced to 3D modelling software and the fundamental principles of current Australian Standards for engineering drawing and documentation. The skills gained will contribute to preparation for future complex projects in engineering, industrial design and creative industries that require prototyping, files for additive manufacturing (3D printing), and component designs that can perform at exact specifications and standards.

## 301283.2 Design Graphics: Presenting Innovation

**Credit Points** 10 **Level** 1

**Equivalent Units**

300302 Industrial Graphics 1: Presentation 301074 Graphics 1: 2D & 3D Industrial Design Communication

**Special Requirements - Essential Equipment**

Subscription to graphic software required USB or external storage device to store graphic files

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Design visualisation in the form of 2D and 3D graphics is fundamental to the overall design process. This unit provides students with essential knowledge of design principles as used in visual communication. Students will employ graphic techniques to effectively convey a design proposal using creativity, technical skill, and quality design principles in a manner that is consistent with industry expectations. Students will produce graphic work that is portfolio-ready and suitable to display to potential clients and employers.

## 301093.2 Design Management 1: Process and Manufacturing

**Credit Points** 10 **Level** 2

**Equivalent Units**

300012 - Design Management 1: Product Design Audit

**Special Requirements - Essential Equipment**

Access to vUWS and Western Sydney University library

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From 2020, this unit will be replaced by 301305 - New Product Innovation with IoT Data. Design Thinking has had a considerable effect on the ways firms innovate, design and evaluate products and services for use. The evolution of smart products and services in recent years offers both challenges and rewards for organisations as the big data generated provides insights to current product and service utilisation. Interpretation and integration of these new knowledge streams can support future product development, and enhance understanding of human behaviour. This entirely online unit will explore what the Internet of Things (IoT) is all about and how IoT can constructively inform and service new product and service development. The project design brief developed provides the directional basis for the deployment of both human and industrial resources ideal for career progression as a future manager.

## 301082.2 Design Management 2: Operation and Supply Chain

**Credit Points** 10 **Level** 2

**Equivalent Units**

300013 - Design Management 2: Corporate Image and Identity

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From 2020, this unit will be replaced by 301082 - Design Thinking for Competitive Advantage. This unit focuses on how design management processes can connect suppliers with consumers. Students will learn about the evolution of different manufacturing environments: the development of craft manufacture, batch processing, flexible manufacture along with 21st century lean start-up and entrepreneurship models. The unit engages topical areas including integrative manufacturing planning, value chain analysis, industry reflection, and strategic decision making. Learning activities include an industry-based audit, a business redesign, and an innovation futures proposal.

## 300014.4 Design Management 3: Organisational Skills for Designers

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Ability to use: e-mail, internet web browser, WebCT or equivalent, word processing program. Knowledge and/or experience in: referencing, essay writing, group work and the successful completion of Level 2 units would be of advantage and will be assumed.

**Equivalent Units**

10886 - Design Management 3B: Professional Practice

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From 2020, this unit will be replaced by 301301 - Design Thinking for Successful Brands and Products. Key learning outcomes include that students: understand manufacturing paradigms and their impact on the product development process and the design process; understand the impact of organisational structures, strategies and processes on the design process; develop and gain experience of using key skills that will enable them to work successfully with various organisational members in the product development process. These skills include teamwork, decision-making and communication, analysis and problem solving. Develop and gain experience of using distance communication and virtual teamwork skills, skills that are becoming increasingly important in new product development.

## 301094.2 Design Management 4: Strategy and Lean Start-Up

**Credit Points** 10 **Level** 4

**Equivalent Units**

300015 - Design Management 4: Design Process

**Unit Enrolment Restrictions**

Students must have successfully completed 160 credit points. Online work safety module must have been completed prior to workshop space use. Specific requirements regarding machine use may require student safety inductions per apparatus i.e. drill, sander.

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From Spring 2020, this unit will be replaced by 301304 - Start-Up Product Launch. This unit builds on earlier design management study and focuses on entrepreneurial innovation and lean start-up models using design-led strategies such as canvass modelling, minimum viable product (MVP), and launching. These strategies can be used for creating dynamic and adaptive organization for business, government and wider communities. Students will work in cross functional teams to deliver a mature value proposition for validation and launch of a market-ready product or service; and will be encouraged to seek external funding for their ideas, for example through crowd-funding websites.

## 301310.2 Design Practice: Manufactured Product Lifecycle

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

The ability to communicate a design proposal using 2D or 3D computer software with annotations, and application of Australian Standards AS 1100 or related construction standards are desirable

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Visualisation analytics for sustainable manufacturing practices provide an essential contribution to planning and adoption for new product development. The application of product lifecycle management (PLM) methods through software interfaces permits the establishment of a digital environment to create, manufacture and manage innovation on a comprehensive basis. Students will engage with an innovation project from a PLM perspective as an extended enterprise with focus on time to market, waste optimisation, prototyping efficiency, and value chain collaboration.

## 301311.1 Design Practice: Self-Directed Specialised Mentor Project

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

The ability to communicate a design proposal using 2D or 3D computer software with annotations, and application of Australian Standards AS 1100 or related construction standards are desirable

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Mentorship is highly regarded in preparation for accelerated understanding of the competitiveness and excitement of professional practice. Specialised mentors provide insights and engage students in co-creative processes and guide the pursuit of design innovations that challenge markets and redefine career progression and employment opportunities. This unit permits students to develop their own idea from conceptual discovery to market strategy and launch preparations with the view to build a new commercial pathway and personal resilience by creating a new value proposition of merit.

## 301309.2 Design Practice: Sustainable Components

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

The ability to communicate a design proposal using 2D or 3D computer software with annotations, and application of Australian Standards AS 1100 or related construction standards are desirable

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New Product development in architecture and construction industries draws upon construction knowledge, applied materials specification, design for durable systems, component interfaces supporting assembly and robust design principles with aesthetic considerations, functional and desirable product attributes. This unit forms part of the

Design Practice specialisation and builds upon the principles of sustainable manufacturing and product life cycle in response to an emergent construction theme. In this unit, entrepreneurship and product detailing assist decisions that drive future advancements in construction component design.

## 301308.1 Design Practice: Sustainable Manufacturing

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

The ability to communicate a design proposal using 2D or 3D computer software with annotations, and application of Australian Standards AS 1100 is desirable

**Special Requirements - Essential Equipment**

Vernier Callipers: Analogue or digital

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Reflecting upon the life cycle of products and their components is important in understanding how decisions at the design level impact on people, resources, sustainable goals and how these contribute towards sustainability-oriented local and global value chains. This unit focuses on sustainable decision-making at the design level. It challenges and motivates students towards using sustainability principles to promote good Design for Disassembly (DfD) practices with linkages to material durability, and material reuse. Through a project-based approach, students will appraise manufacturing considerations for product design applying in succession Design for Manufacturing, Assembly and Disassembly (DfM, DfA, DfD) principles to their products and reflect on product lifecycle management best practice.

## 301308.2 Design Practice: Sustainable Manufacturing

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

The ability to communicate a design proposal using 2D or 3D computer software with annotations, and application of Australian Standards AS 1100 is desirable

**Special Requirements - Essential Equipment**

Vernier Callipers: Analogue or digital

.....

Reflecting upon the life cycle of products and their components is important in understanding how decisions at the design level impact on people, resources, sustainable goals and how these contribute towards sustainability-oriented local and global value chains. This unit focuses on sustainable decision-making at the design level. It challenges and motivates students towards using sustainability principles to promote good Design for Disassembly (DfD) practices with linkages to material durability, and material reuse. Through a project-based approach, students will appraise manufacturing considerations for product design applying in succession Design for Manufacturing, Assembly and Disassembly (DfM, DfA, DfD) principles to their products and reflect on product lifecycle management best practice.

## 301291.3 Design Research Methods (Advanced)

**Credit Points** 10 **Level** 3

**Equivalent Units**

300314 - Designed Inquiry; 301090 - Contextual Inquiry

**Unit Enrolment Restrictions**

Students must have completed 160 credit points before enrolling into this unit.

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Design and user research methods are critical in establishing efficient and effective processes around resource utilisation in designing, conducting and presenting research findings that are succinct yet open to new innovations. A range of advanced research design methods are presented and students are guided to the strategic selection of methods appropriate to their own self-sourced project theme. Data collection instruments are designed, operationalised, data coded and analysed via both qualitative and quantitative techniques and discussed in a vibrant peer environment inspired by design thinking and other research methods unique to the design profession and within university human ethics policy protocols.

## 300016.4 Design Science

**Credit Points** 10 **Level** 1

**Equivalent Units**

700126 - Design Science (WSTC)

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From 2020, this unit will be replaced by 301281 - Designing for Circular Economy. This unit provides an overview to the process of design and introduces students to many of the skills they will develop as they become successful industrial designers. Whilst learning about the CDIO framework for project-based design problems, students will develop their applied mathematical skills, learn about materials, be introduced to computer visualisation, work individually and in teams, and develop professional communication skills. The key objective is to provide students with practically-oriented skills and knowledge that enables them to critically analyse existing designs and conceive higher levels of innovation in new designs. Utilising a mix of theory and practice, this unit will challenge students to think both creatively and quantitatively when problem solving during the design process.

## 700126.4 Design Science (WSTC)

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

The content of any NSW HSC Mathematics subject

**Prerequisite**

Students enrolled in 7015 Diploma in Construction Management or 7065 Diploma in Construction Management Extended or 7042 Bachelor of Construction Management (WSTC FYP) or 7081 Bachelor of Construction Management Extended (WSTC FYP) must pass 700264 Scientific Methods for Construction Management (WSTC Prep) before enrolling in this unit.

**Equivalent Units**

300016 Design Science

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in a Construction Management course. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year 2 units.

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An explanation and description of how the built environment works is essential to designers and construction professionals. This unit provides an introduction to physical units of measurement, tolerance, statics, dynamics, acoustics and thermal properties. It also allows students to interpret and apply the concepts of electricity, energy, work and power to the built environment. Students engage with these concepts through a hands-on learning experience including practical projects and live demonstrations.

## 301289.2 Design Semantics: Exploring Product Form

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Students will be required to have basic workshop skills and/or model-making skills. A basic understanding of graphics software, for example Adobe Photoshop and Illustrator, is assumed.

**Equivalent Units**

300305 - Design Studio 1: Themes and Variations; 301078 - Design Studio 3: Design, Process and Function

**Special Requirements - Essential Equipment**

Students must complete all safety inductions for each piece of equipment or process prior to using the workshop space. WSU provides WH&S online modules that must also be completed via vUWS.

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Products can engage our senses to evoke an emotional response or mediate an experience. This is a powerful psychological tool for industrial designers to understand in terms of the design interface as it provides a strategic opportunity for innovation. In this unit students will create meaningful and active product relationships, and use product semantics as an agency for proposing design solutions in areas such as health and well-being, ageing populations, and sustainable design.

## 301073.2 Design Studio 1: Patterns and Products

**Credit Points** 10 **Level** 1

**Equivalent Units**

300776 - Applied Ergonomics

**Special Requirements - Essential Equipment**

Online work safety module must have been completed prior to workshop space use. Specific requirements regarding machine use may require student safety inductions per apparatus i.e. drill, sander. Students must bring your own device to all Lecture and Tutorial classes, as these will be required to complete the assignment tasks.

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From 2020, this unit will be replaced by 301282 - Co-Designing Change with Local Communities. Creating new designs that interpret both the functional needs and emotional desires in new and exciting ways are important to the success and longevity of products and services. New designs are also important to the organisations that sponsor their research and development. Active project work through creative practice in developing and building new solutions is represented in each of the assessments. Students will research, conceptualise, and present their innovations in response of practical context-based challenges. The designs will be informed by human-centred design principles, sustainability, and fit-for purpose integrated production process considerations that bring entrepreneurial ideas to life. Theory and practice-based outcomes are advanced through real-life scenarios, guest speakers and site visits while modern university workshops environments will be used for prototyping, laser cutting and 3D printing. This unit may be taken as a stand-alone elective or as the first in a series of creative design studios.

## 301075.3 Design Studio 2: Form and Production

**Credit Points** 10 **Level** 1

**Equivalent Units**

301036 - Form and Production; 300462 - Engineering and Design Concepts

**Special Requirements - Essential Equipment**

Online work safety module must have been completed prior to workshop space use. Specific requirements regarding machine use may require student safety inductions per apparatus i.e. drill, sander.

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From Spring 2020, this unit will be replaced by301286 - Designing for People: Applied Ergonomics. This unit equips students with the skills to use creative design and structured decision making to solve challenging problems. Students will develop their understanding of design process by creating experimental models using various methods, including 3D rapid prototyping. Students will also record their design process via multimodal media, in both digital and non-digital format. They will also reflect upon the design process through the CDIO framework (Conceive, Design, Implement, Operate) and CAD (Computer-Aided Design).

## 301078.2 Design Studio 3: Design, Process and Function

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Level 1 Design Studio 1 and Design Studio 2

**Prerequisite**

**301075.1** Design Studio 2: Form and Production

**Equivalent Units**

300305 - Design Studio 1: Themes and Variations

**Special Requirements - Essential Equipment**

Online work safety module must have been completed prior to workshop space use. Specific requirements regarding machine use may require student safety inductions per apparatus i.e. drill, sander.

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From 2020, this unit will be replaced by 301289 - Design Semantics: Exploring Product Form. Students will undertake projects with semi-open briefs, where they are asked to address a given theme and achieve specific outcomes such as sustainability criteria or costing targets. They will follow the CDIO (Conceive, Design, Implement, Operate) framework to develop designs to the stage of working prototypes with a clear plan of how the product will work in a real setting. This will include making a digital and/ or mechanical representation, and also mapping how the product meets functional requirements both as a prototype and in the longer term as a finished product.

## 301080.2 Design Studio 4: Innovation through Systems Thinking

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

It is assumed students have completed Graphics 3 and are proficient in computer solid modelling. Knowledge of plastic manufacturing is also essential.

**Prerequisite**

**301078.1** Design Studio 3: Design, Process and Function

**Equivalent Units**

300308 - Design Studio 2: The Design Proposal

**Special Requirements - Essential Equipment**

Online work safety module must have been completed prior to workshop space use. Specific requirements regarding machine use may require student safety inductions per apparatus i.e. drill, sander.

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From 2020, this unit will be replaced by 301292 - Biomechanics in Product Innovation. This unit explores strategies for Industrial Design within the complex context of design work in the 21st century. Students will carry out projects in user-centred design, developing an innovative responses to a semi-open and open briefs using the CDIO (Conceive, Design, Implement, Operate) process. The projects will range from low fidelity cardboard prototypes to more fully developed everyday products and services that can be implemented and operated to meet an identified user need.

## 301083.3 Design Studio 5: Symbol and Meaning Making

**Credit Points** 10 **Level** 4

**Equivalent Units**

300311 - Design Studio 3: Product Realisation

**Unit Enrolment Restrictions**

Student are required to have completed 120 credit points in their degree.

**Special Requirements - Essential Equipment**

Online work safety module must have been completed prior to workshop space use. Specific requirements regarding machine use may require student safety inductions per apparatus i.e. drill, sander.

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From 2020, this unit will be replaced by 301294 - Studio: Interdisciplinary Global. Design-led innovation has become influential in the development of new products and services, has inspired the development of new business models and driven new job creation. In this advanced design studio unit, students synthesise their prior learning to develop new solutions. Through the use of an iterative conceptual development and product prototyping process, students will work in teams and individually to achieve new product development outcomes much sought-after by employers. Teams from an array of disciplines including industrial design, engineering, architecture, ICT, health and medical sciences use inspiring application of virtual reality (VR) and 3D printing to communicate and develop new solutions. Your career planning and personal development will benefit from the systems approach, collaborative learning mode, integrated design thinking, and innovation discovery challenge.

## 301084.3 Design Studio 6: Ambience, Place and Behaviour

**Credit Points** 10 **Level** 4

**Prerequisite**

**301083.1** Design Studio 5: Symbol and Meaning Making

**Equivalent Units**

300313 - Design Studio 4: Simulate to Innovate

**Special Requirements - Essential Equipment**

Online work safety module must have been completed prior to workshop space use. Specific requirements regarding machine use may require student safety inductions per apparatus i.e. drill, sander.

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Designers responding to complex societal challenges require focus on people, places and systems thinking to make sense in guiding new investment in innovation. This unit builds industrial design expertise in four domains including human environments, responsible design, user-centred design, and technology development through applied design research, contextual inquiry methods, and articulation of innovation proposals through conceptual and validated physical modelling, and an interdisciplinary consultative viewpoint.

## 301302.2 Design Thinking for Competitive Advantage

**Credit Points** 10 **Level** 4

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Design Thinking has become widely adopted as a novel problem solving mechanism and asset to market growth, resource utilisation, and competitiveness. This approach incorporates human-centric attributes and iterative processes which are features of professional designers co-creating with stakeholders. In this unit, students focus on empathic viewpoints associated with understanding people, markets and the environment. They explore future possibilities for communities using decision-making processes, informed by global challenges as represented through the UNSDGs. This new global societal driver for equitable living standards, economic prosperity, and sustainable societies is explored through online study involving a series of webinars, digital interactions, and conclude with a student prototype presentation.

## 200918.1 Design Thinking for Creativity

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Students should have a foundation knowledge of business markets and innovation theory.

**Unit Enrolment Restrictions**

Successful completion of 80 credit points.

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Innovation and creative thinking are important skills in strategy development. Part of this process is the ability to solve problems and discover new opportunities; or in other words, the notion of “design thinking”. This unit introduces students to concepts and frameworks to create innovative products, services and systems for a range of enterprises, industries and markets. Students will explore and analyse business and social networks, clusters and ecosystems via practice based projects. Design thinking principles will be applied to systematically develop ideas into innovative solutions as a way to drive business growth.

## 301301.2 Design Thinking for Successful Brands and Products

**Credit Points** 10 **Level** 3

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Students will learn how to develop a strategic design management plan that helps a firm not only present itself to its target audience but also clearly differentiate amongst competitors. Foundation design principles involving the evaluation of two-dimensional and three-dimensional designs are explored through a series of case studies based on commercially successful design management strategies. To simulate global, real-world design consultation scenarios students interact in an online environment in preparation for evidence-based innovation in their future workplaces as design managers.

## 301281.2 Designing for Circular Economy

**Credit Points** 10 **Level** 1

**Equivalent Units**

700126 Design Science (WSTC)

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Traditional linear consumption patterns have placed considerable load on available natural resources. The lack of comprehensive mitigation strategies has motivated local and international efforts around the United Nations Sustainable Development Goals (UNSDGs 2030) to finding resolutions towards making the world more equitable, sustainable, liveable and with opportunities for new sustainable businesses. Students will choose an existing product and apply the principles of the UNSDGs and Circular Economy to create a proposal and prototype to improve upon its current design. Throughout this process the students will consider product usage, durability, bio-ingredients, the product lifecycle, community impact, and sustainability.

## 301293.1 Designing for Circular Economy (Advanced)

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Sufficient practical knowledge and skills in sustainable design and/or materials related life cycle is desirable.

**Equivalent Units**

300306 Sustainable Design: Sustainable Futures

**Unit Enrolment Restrictions**

Students must have completed 100 credit points

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Societies today face up to considerable challenges around the sustainable use of human and physical resources. According to the United Nations Sustainable Development Goals 2030 (UNSDGs) there are certainly rewards for professions that carefully consider current, evolving and future systems with a view of providing an integrated response to the sustainable use of resources in local, city-based or regional built environments. This unit requires students to develop an evidence-based sustainable design proposal through the evaluation of value streams, circular economy impacts, and self-prioritised UNSDGs targets with a view to commercialise. Students will develop a Futures Strategy report on their design challenge informed by industry or community based observations.

## 301293.2 Designing for Circular Economy (Advanced)

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Sufficient practical knowledge and skills in sustainable design and/or materials related life cycle is desirable.

**Equivalent Units**

300306 Sustainable Design: Sustainable Futures

**Unit Enrolment Restrictions**

Students must have completed 100 credit points

.....

Societies today face up to considerable challenges around the sustainable use of human and physical resources. According to the United Nations Sustainable Development Goals 2030 (UNSDGs) there are certainly rewards for professions that carefully consider current, evolving and future systems with a view of providing an integrated response to the sustainable use of resources in local, city-based or regional built environments. This unit requires students to develop an evidence-based sustainable design proposal through the evaluation of value streams, circular economy impacts, and self-prioritised UNSDGs targets with a view to commercialise. Students will develop a Futures Strategy report on their design challenge informed by industry or community based observations.

## 301286.2 Designing for People: Applied Ergonomics

**Credit Points** 10 **Level** 1

**Special Requirements - Essential Equipment**

Online work safety module must have been completed prior to workshop space use. Specific requirements regarding machine use may require student safety inductions per apparatus i.e. drill, sander.

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Ergonomics is the study of the interaction between people, their environments, and their objects. A sound understanding of the principles of ergonomics allows a designer to develop products, systems and environments with optimum product usability and end user safety. In this unit, students are introduced to modelling workshop procedures and undertake their own ergonomic study. Students then build and test a hand-held scale product, and integrate user feedback into their redesign.

## 301284.2 Designing for User Experience (UX)

**Credit Points** 10 **Level** 1

**Special Requirements - Essential Equipment**

Online work safety module must have been completed prior to workshop space use. Specific requirements regarding machine use may require student safety inductions per apparatus i.e. drill, sander.

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Understanding product-oriented user requirements and mapping user experience journeys provide rich inputs for new product and service innovations. In this unit students will focus on user needs and the interactive elements which, when combined, create successful user experiences through impactful user interfaces, and highly differentiated outcomes. Students will engage in an applied project in response to an interaction design challenge. As part of their project students will incorporate elements to evoke strong emotional, sensorial and functional connections which are essential in creating inclusive design, engaged usability, and high-quality human-centred experiences, for successful products and services.

## 200997.1 Developing Sport Professionals

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

An introductory level of knowledge in Sport Management

**Prerequisite**

**201000.1** The World of Sport Business

**Equivalent Units**

400649 - Professional Practice in Sport Management 3, 400648 - Professional Practice in Sport Management 2, 200576 - Professional Practice in Sport Management 1, 200664 - Sport Management Internship

**Unit Enrolment Restrictions**

Student must be enrolled in one of the following courses: 1818 Bachelor of Arts/Bachelor of Business 1819 Bachelor of Communication/Bachelor of Business 1820 Bachelor of International Studies/Bachelor of Business 2786 Bachelor of Business 2787 Bachelor of Business (Advanced Business Leadership) 2788 Bachelor of Business/Bachelor of Laws 2789 Bachelor of Business (Advanced Business Leadership)/Bachelor of Laws 3728 Bachelor of Engineering (Honours)/Bachelor of Business 3737 Bachelor of Information and Communications Technology/Bachelor of Business 3744 Bachelor of Information Systems/ Bachelor of Business 3745 Bachelor of Information Systems Advanced/Bachelor of Business 4748 Bachelor of Science/Bachelor of Business 6037 Diploma in Business/ Bachelor of Business

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The Sport Management Internship unit provides students with an opportunity to engage with the sport industry through a 120 hour [minimum] industry placement. Students are provided with a unique opportunity to observe sport management practitioners in action and learn in a practical "hands-on" setting. Experience in the field of study is an essential ingredient in preparing an individual for employment either during the period of study or after graduation. Students have the opportunity to apply theoretical concepts, knowledge and skills acquired in lectures and workshops in professional sport, recreation and aligned settings.

## 300723.4 Development Control

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Basic understanding of residential construction.

**Equivalent Units**

BG303A - Development Control

**Incompatible Units**

200435 - Property Development Controls

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This unit provides an overview of development control and associated legislation. These include: interpretation of planning law as it relates to the development application process; the assessment of applications for approval for development as an integrated process; the evaluation of the impact assessment process; appropriate consideration

of urban design, streetscape, heritage and conservation issues; and the evaluation of the impact of parking, traffic, landscape and services in development proposals.

## 300887.1 Digital Communication and Coding

**Credit Points** 10 **Level** 3

**Prerequisite**

**300057.3** Signals and Systems

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The unit covers the analysis, design and operation of modern digital communication and coding systems. Specific topics include baseband pulse transmission, digital passband transmission, signal space analysis, fundamental limits in information theory and error control coding. The statistical underpinnings of telecommunication theory with applications will be emphasized.

## 301225.2 Digital Construction

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Building construction including residential, light industrial and small commercial, basic building measurement and estimating.

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This unit offers knowledge and skills essential for a successful application of Building Information Modelling (BIM) in the context of built environment. Building Information Modelling (BIM) has the potential to improve integration between design and construction processes, reduce design discrepancies and rework, optimise project time and cost performance, and manage risks. Students will develop an understanding of the generation, reviewing and application of 3D, 4D and 5D BIM models in building projects. Virtual and augmented reality, spatial information capture and performance management systems will also be introduced. This unit will be taught through intensive practice-based workshops and computing labs, enabling students to build skills in virtual design and construction processes.

## 300370.2 Digital Control Systems

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Prior knowledge assumed: Continuous time control systems, the use of the Laplace transform, ADC and DAC, Z-transform, vector matrix difference equations, state variable representation helpful and familiarity with Matlab or similar software.

**Prerequisite**

**300009.2** Control Systems

**Equivalent Units**

84465.1 Real Time Control

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This unit is a first course in discrete, single rate sampled linear control systems and introduces the use of a computer as the main control element in a feedback system and as a data acquisition tool in real time. Methods of analysis and design are examined, using s-domain and state space methods, with an emphasis on the practical aspects of designing and implementing digital control systems. Less emphasis on theoretical issues. Direct design and emulation methods are included. Practical laboratory work is included along with the use of Matlab software tools

## 102410.2 Digital Cultures

**Credit Points** 10 **Level** 3

**Equivalent Units**

101980 - Culture, Society and Globalisation

**Unit Enrolment Restrictions**

Successful completion of 60 credit points in currently enrolled course.

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This is the compulsory Level 3 capstone unit for the Cultural and Society major and a compulsory unit in the Digital Cultures major. It gives students essential skills for researching and analysing contemporary cultural and social processes through a digital lens. Key topics include youth and digital culture, digital citizenship, racism and the digital, film and games, and digital work and economies. Through this unit, students gain an understanding of how digital technologies transform everyday practices, meanings and identities, create new opportunities and problems for addressing societal challenges and explore what it means to participate in a digital society, now and in the future.

## 101250.3 Digital Futures

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Successful completion of 40 credit points of study in currently enrolled course.

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This unit examines the role of digital technologies in contemporary cultural production, exploring the impact digital technologies have had on the design and construction of images, spaces and bodies in the late 20th and early 21st centuries. The unit traces the development of technologies from analogue, to electronic, to digital, and analyses key topics in media studies including the cyborg, virtual reality, artificial life and simulation. The unit contextualizes conceptual issues with reference to design, film, art and new media works.

## 102425.1 Digital Humanities and Research Methods (UG)

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Successful completion of 60 credit points at Level 1.

**Special Requirements - Essential Equipment**

Access to a laptop or tablet device to bring to class.

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This unit investigates the methodological possibilities of digital technologies for interdisciplinary humanities and social sciences research. It covers several major digital research methods, exploring previous applications and

examining their orientations and implications. Digital research methods and applications may include digitisation, online curation, visualisation, network analysis, geographical information systems, data mining and simulation. In the context of these, the unit will probe histories of technology and knowledge production, the evolution of digital texts and practices, and issues in contemporary culture such as digital design, gamification, virtual identity, and digital rights.

## 300069.6 Digital Signal Processing

**Credit Points** 10 **Level** 3

**Prerequisite**

**300057.3** Signals and Systems OR **301352.1** Circuits and Signals

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Students will develop an understanding of the fundamental concepts and principles in digital signal processing by applying the theory learned in their classes to practical exercises. The subject matter includes discrete-time signals and systems, the z-transform, sampling of continuous-time signals, transform analysis of linear time-invariant systems, filter design techniques, structures for discrete-time systems, the discrete Fourier transform and computation of the discrete Fourier transform.

## 102253.2 Digital Social Research in Action

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Knowledge of digital social research

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

**Special Requirements - Essential Equipment**

Access to a computer or tablet device and internet connection. Access to relevant data analysis software.

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This unit engages students in the practices of digital social research through a simulation of a professional research consultancy. Students will construct and apply a digital social science approach for an internal or external client brief. Students will engage with client and stakeholder needs through their role as a consultant as they carry out the digital social research project for their client. In doing so, students engage with the ethical and moral implications of using digital social data and discover the opportunities to apply and communicate digital social research methods in real world settings.

## 300018.4 Digital Systems 1

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

Knowledge on basic principles of analysing an electric circuit, Kirchhoff's Voltage and Current laws and their use in electric circuits and concept of operational amplifier and its circuit would be desirable.

**Equivalent Units**

700240 - Digital Systems 1 (WSTC AssocD)

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This unit provides students with a solid background in digital logic design which is foundational to the fields of electrical and computer engineering. Digital logic design involves building electronic components and hardware, such as circuit boards and microchip processors. Students are first introduced to the fundamentals of digital logic, basic logic devices and Boolean algebra. This is followed by analysis and design of combinational and sequential logic circuits.

## 700240.4 Digital Systems 1 (WSTC AssocD)

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

Knowledge on basic principles of analysing an electric circuit, Kirchhoff's Voltage and Current laws and their use in electric circuits and concept of operational amplifier and its circuit would be desirable.

**Prerequisite**

**700112.3** Fundamentals for Engineering Studies (WSTC AssocD)

**Equivalent Units**

300018 - Digital Systems 1

**Unit Enrolment Restrictions**

Students must be enrolled in 7022 Associate Degree in Engineering

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This unit provides students with a solid background in digital logic design which is foundational to the fields of electrical and computer engineering. Digital logic design involves building electronic components and hardware, such as circuit boards and microchip processors. Students are first introduced to the fundamentals of digital logic, basic logic devices and Boolean algebra. This is followed by analysis and design of combinational and sequential logic circuits.Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## 300019.6 Digital Systems 2

**Credit Points** 10 **Level** 3

**Prerequisite**

**300018.2** Digital Systems 1

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This unit covers modern logic design techniques and the process of creating logic circuits and systems from design specifications to implementation. Topics include logic design techniques for combinational and sequential logic circuits; hardware description language (HDL); logic circuit implementation using an HDL; state-of-the-art logic circuit design tools; and programmable logic devices.

## 300479.1 Drainage Engineering

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

300674 - Engineering Design & Construction Practice and 300027 - Engineering Computing.

**Prerequisite**

**85009.2** Water Engineering OR **300740.1** Water Engineering

**Equivalent Units**

85017 - Foundation and Drainage, 85025 - Hydrometeorology

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This unit will introduce the basic concepts of drainage analysis. Basic concepts of hydrology will be introduced. This will be integrated with the hydraulic principles learned in Water Engineering to perform hydrologic analysis of catchments.

## 700306.1 Drawing and CAD (WSTC)

**Credit Points** 10 **Level** 1

**Equivalent Units**

700150 - Graphic Communication and Design (WSTC); 300729 - Graphic Communication and Design; 301228 - Drawing and CAD

**Unit Enrolment Restrictions**

Students must be enrolled at The College. Students in Extended Diploma courses must pass 40 CPs of preparatory units in order to enrol in this unit. Students in Integrated Diploma courses must pass or be enrolled in the preparatory units in order to enrol in this unit.

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This unit is designed to provide students with the knowledge and skills necessary to develop elementary design skills and basic CAD (Computer Aided Design) proficiency suitable for application within the building industry. Students will learn to describe building designs in plan, section, elevation, isometric and perspective views. Basic drafting concepts and skills will be acquired in the context of individual detached housing designs. Students will also be required to develop appropriate analytical and problem solving skills in dealing with a realistic house building project.

## 301285.2 Drawing Skills for Design Thinking

**Credit Points** 10 **Level** 1

**Special Requirements - Essential Equipment**

A4 Process Diary Drawing/Rendering Equipment: A3 Bleedproof paper pad A3 Layout paper pad HB lead pencil Set of French curves Artliner pens (various size nibs) Copic markers (C2, C4, C6) or Windsor & Newton (W1, W2, W3) Soft blue pencil (Watercolour pencil eg Faber Castel brand or similar) Pentel Sign Pen A3 or A2 Carry case to carry drawings flat

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Drawing skills can unlock and translate creative thoughts as actions, iterations, and guide collaborative dialogue in meeting common goals. In combination with Design Thinking essentials which include empathy, ideation, and experimentation, practiced drawing skills can accelerate decision-making for individuals or groups. This unit is focused on developing hand drawing skills as a tool for generating creative ideas and design solutions. Students will attain an understanding of spatial relationships between humans and objects, and natural and built environments. The emphasis is on using drawing as a method for conducting exploratory investigations, recording creative thinking processes through ideation and inspiring innovation. Students will gain confidence in communicating their creative ideas to a wide audience.

## 300480.4 Dynamics of Mechanical Systems

**Credit Points** 10 **Level** 3

**Prerequisite**

**300035.3** Kinematics and Kinetics of Machines AND **300040.2** Mechanics of Materials

**Equivalent Units**

300020 - Dynamics and Mechanical Systems

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This unit looks at how non-rigid components deform and oscillate. It looks at undamped and damped systems undergoing free vibration, steady state forced vibration and transient forced vibration. The principles of virtual work are used to investigate the equilibrium and dynamics of mechanisms.

## 200916.1 Economic and Financial Modelling

**Credit Points** 10 **Level** 3

**Prerequisite**

**200032.5** Statistics for Business OR **200052.5** Introduction to Economic Methods

**Equivalent Units**

200053 - Economic Modelling

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Economic and Financial Modelling examines regression analysis and its use in business especially in economics, finance and accounting. Topics will include the properties of estimators, hypothesis testing, specification error, multicollinearity, dummy variables, heteroskedasticity, serial correlation. It also introduces other modelling techniques in finance and economics. Empirical assignments undertaken by the student form an integral part of the unit. The emphasis is on learning by doing in small group workshops.

## 200537.4 Economics and Finance Engagement Project

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Students in the following courses must have successfully completed 150 credit points: 2504 Bachelor of Economics, 2526 Bachelor of Economics/LLB, 2739 / 2753 Bachelor of Business and Commerce, 2741 / 2754 Bachelor of

Business and Commerce (Advanced Business Leadership), 3655 Bachelor of Information and Communications Technology/ Bachelor of Business and Commerce, 3659 Bachelor of Science/ Bachelor of Business and Commerce, 2740 Bachelor of Business and Commerce / Bachelor of Laws.

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This unit will provide students with exposure to problems with which economists and finance professionals are confronted in their daily work. They will learn about and examine the multi-dimensional nature of the issues addressed by economists and finance professionals in real-life. Students will need to consider the nature of the problems, propose solutions, as well as address how realistic the solutions they are proposing are. They will learn how to systematically reflect on their contribution to the industry or community setting with which they engage.

## 101263.1 Education and Transformation

**Credit Points** 10 **Level** 2

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This unit provides opportunities for students to examine theories and practices associated with Transformative Learning in relation to their personal development as educators. Transformative Learning is learning that is empowering, deep and life changing. It and similar ways of approaching learning – the holistic, ecological and systemic - share a reflective base. All are inquiries into the relationships that make learning work. Students investigate these as theoretical and practical approaches to learning in real world settings: as powerful educational feedback systems. This unit combines the design and practical enactment of theoretically grounded approaches to socially relevant and personally meaningful learning.

## 101663.2 Education for Sustainability

**Credit Points** 10 **Level** 2

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Increasingly, the need to develop sustainable ways of living that can reduce our ecological footprint and conserve precious natural resources for future generations is recognised as a critical concern of education at all levels. Developing 'sustainability literacy' requires new ways of thinking and learning that enable us to recognise the connections between environmental concerns, social patterns and individual actions. This unit approaches key issues in sustainability education with a learner-centred approach that builds skills for inquiry, analysis and creative action and involves a three-hour field trip. It promotes personal and social change, develops civic values and empowers learners to be leaders for a sustainable future.

## 300070.6 Electrical Drives

**Credit Points** 10 **Level** 3

**Prerequisite**

**300071.2** Electrical Machines 1

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Through practical laboratory exercises students will analyse and evaluate electrical machines and drives. They will examine various types of electrical motors and drive systems, their applications and control. They will also study various types of speed control, starting and braking systems and dynamics.

## 300021.4 Electrical Fundamentals

**Credit Points** 10 **Level** 1

**Equivalent Units**

700024 Electrical Fundamentals (WSTC); 700104 Electrical Fundamentals (WSTC Assoc Deg)

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This unit introduces essential electrical engineering concepts that provide students with the basic requirements for analysing, designing, building, and testing simple engineering systems. Students use techniques for analysing different types of circuits based on their knowledge of electrical theory and the characteristics of power, electrical energy, signals, and electrical circuit components. Students have practical activities including conducting experiments in learning how electrical systems work. Students are introduced to Electrical Machines and Renewable Energy systems for a fundamental understanding.

## 700104.4 Electrical Fundamentals (WSTC AssocD)

**Credit Points** 10 **Level** 1

**Equivalent Units**

300021 - Electrical Fundamentals, 700024 - Electrical Fundamentals (WSTC)

**Unit Enrolment Restrictions**

Students must be enrolled in 7022 Associate Degree in Engineering

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The objective of this unit is to introduce to the student a number of concepts within electrical engineering. These include basic definitions of charge, current, potential difference, power; electric circuits and basic laws such as Ohm's and Kirchoff's Laws; Thevenin, Norton's and the maximum power theorems; electromagnetism and the associated fundamental laws; capacitor and resistor circuits and time constants; an introduction to Electronics; communication waves; Logic gates and number systems; and an introduction to Electrical Machines and Renewable Energy systems. Basic principles are explained and applied to a range of typical electrical circuits and devices. These foundations provide students with the basic requirements for a career in engineering where the concepts can be developed or applied to more complex engineering systems.

## 700024.5 Electrical Fundamentals (WSTC)

**Credit Points** 10 **Level** 1

**Prerequisite**

Students enrolled in 6033 Diploma in Engineering/Bachelor of Engineering Studies or 7034 Diploma in Engineering or 7066 Diploma in Engineering Extended must pass 700145 Foundation Physics 2 before enrolling in this unit.

**Equivalent Units**

300021 - Electrical Fundamentals, 700104 - Electrical Fundamentals (WSTC Assoc Deg)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year 2 units.

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The objective of this unit is to introduce to the student a number of concepts within electrical engineering. These include the basic definitions of charge, current, potential difference, power; electric circuits and basic laws such as Ohm's and Kirchoff's Laws; Thevenin, Norton's and the maximum power theorems; electromagnetism and the associated fundamental laws; capacitor and resistor circuits and time constants; an introduction to Electronics; communication waves; Logic gates and number systems; and an introduction to Electrical Machines and Renewable Energy systems. Basic principles are explained and applied to a range of typical electrical circuits and devices. These foundations provide students with the basic requirements for a career in engineering where the concepts can be developed or applied to more complex engineering systems.

## 300071.4 Electrical Machines 1

**Credit Points** 10 **Level** 3

**Prerequisite**

**300052.2** Power and Machines

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This unit introduces the fundamental principles of electrical machines, the principles of electromechanical energy conversion and the operation and analysis of Direct Current (DC) generators and motors, induction motors and synchronous machines. Students apply principles and theory to practical exercises to develop their understanding. The unit also introduces various special purpose electrical machines, such as permanent magnet machines, step motors and reluctance machines for an understanding on different types of machines.

## 300024.2 Electronic Systems Design

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

300075 - Instrumentation and Measurement, and 300069 - Digital Signal Processing

**Prerequisite**

**300025.2** Electronics AND **300076.1** Microprocessor Systems

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This unit is concerned with the processes involved in the design and production of complete electronic systems. The product development cycle is considered from concept to market and commercialisation. The design of a large electronic system is undertaken as a group project. Production processes explored are printed circuit board (PCB) design and computer aided design (CAD) tools, and PCB manufacture and assembly. Management of the processes are studied including the application of total quality management (TQM) and just-in time management (JIT).

## 300025.5 Electronics

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

The prior knowledge on Vibrations and wave phenomena; Photoelectric effect, atomic structure and periodic table; Electricity and magnetism are required. Students should have a sound understanding on: basic principles of analysing an electric circuit; Kirchhoff's Voltage and Current laws and their use in electric circuits; Nodal analysis, mesh analysis and superposition analysis in DC electric circuits; Thevenin and Norton equivalent and their use in electric circuits; The storage elements capacitor and inductor and understand their performance in first and second order circuits.

**Prerequisite**

**300021.2** Electrical Fundamentals OR **301336.1** Electrical and Telecommunications Engineering

301336 Electrical and Telecommunications Engineering applies only to students in 3771 Bachelor of Engineering Advanced (Honours)

**Equivalent Units**

700242 - Electronics (WSTC AssocD)

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This unit further develops skills in the analysis, design, practical implementation and testing of the main analogue electronic circuits. Topics covered are: semiconductor diodes and their applications, Bipolar Junction Transistors (BJT), Field Effect Transistors (FET), analysis of BJT and FET, design of discrete operational amplifiers, and operational amplifier characteristics and circuit configurations.

## 700242.3 Electronics (WSTC AssocD)

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Vibrations and wave phenomena; photoelectric effect, atomic structure and periodic table, electricity and magnetism

**Prerequisite**

**700104.2** Electrical Fundamentals (WSTC AssocD)

**Equivalent Units**

300025 - Electronics

**Unit Enrolment Restrictions**

Students must be enrolled in 7022 Associate Degree in Engineering

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This unit further develops skills in the analysis, design, practical implementation and testing of the main analogue electronic circuits. Topics covered are: semiconductor

diodes and their applications, Bipolar Junction Transistors (BJT), Field Effect Transistors (FET), analysis of BJT and FET, design of discrete operational amplifiers and operational amplifier characteristics and circuit configurations.Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## 102575.2 Emergency and Disaster Management

**Credit Points** 10 **Level** 7

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This unit uses comparative analysis of different emergency responses to humanitarian disasters to provide students with the skills and knowledge required to play a role in future emergency and disaster management. Students will gain knowledge of the geo-political forces and key international frameworks and standards that shape humanitarian responses, and of the motivations and approaches of aid donors and humanitarian NGOs when intervening in states. They will also gain foundational knowledge of assessment of NGO capacities and organisational infrastructure for managing emergencies, for example their organisational structures and cultures, donor priorities, support systems and personnel.

## 100860.3 Emotions, Culture and Community

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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This unit examines forms of cultural expression and collective selfunderstanding articulated as emotional identifications. Topics covered may include shame, pride, responsibility, forgiveness,resentment, hope, disgust, generosity, happiness, hate and love. The unit explores how these have been taken up in contemporary cultural analysis as a focus for understanding affinities and conflicts between individuals and communities and for how Australians imagine their historical interconnectedness. It introduces some key theoretical perspectives that have been, and might be, applied to the study of emotions, culture and community.

## 300026.3 Energy Systems

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Basic knowledge of power frequency devices and systems

**Prerequisite**

**300025.3** Electronics AND **300052.2** Power and Machines

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The unit introduces the global energy picture of electric energy systems, including a look ar alternative energy sources where time permits. It deals with mainly power systems on a macroscopic scale and with power electronics to a lesser extent and on a smaller scale. Basic processes of energy generation, distribution and conversion are presented, along with the use of semiconductor power switching devices.

## 300462.3 Engineering and Design Concepts

**Credit Points** 10 **Level** 1

**Equivalent Units**

700021 Engineering and Design Concepts (UWSC), 700105 Engineering and Design Concepts (UWSC Assoc Deg), 300965 Engineering Materials

**Unit Enrolment Restrictions**

Students enrolled in 3689 Bachelor of Engineering, 3690 Bachelor of Engineering Advanced (Honours) or 3691 Bachelor of Engineering Science should enrol in 300965 Engineering Materials and not 300462 Engineering and Design Concepts. Essential Equipment: iPad, Prcess Diary, Drawing pens, Scale ruler.

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From 2015 students should take unit 301036 - Form and Production. To equip students with the skills to use creative design and engineering approaches to solve challenging problems. In doing this the students will experience from dirty design to rapid prototyping. They will also reflect upon the design process through the CDIO framework (Conceiving, Designing, Implementing and Operating) and they will also be introduced to CAD (Computing Aided Design) and logical thinking.

## 300027.4 Engineering Computing

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

Basic knowledge in use of computers and Windows operating system

**Equivalent Units**

700018 Engineering Computing (WSTC); 700106 Engineering Computing (WSTC Assoc Deg)

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Engineering computing is an introduction to using computation to solve real problems. The unit also aims to instil sound principles of program design that can be utilised in many units throughout the students' course. The basic elements and structures of a high level language are taught. Students are exposed to numerous engineering problems and are encouraged to implement solutions using an algorithmic approach.

## 500064.1 Engineering Computing (UG Cert)

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

Basic knowledge in use of computers and windows operating system.

**Equivalent Units**

300027 Engineering Computing, 700106 Engineering Computing (WSTC AssocD), 700018 Engineering Computing (WSTC)

**Unit Enrolment Restrictions**

Students must be enrolled in the course : 7178 Diploma in Aerotropolis Industry 4.0 (Mechatronics Skills). or7182 Undergraduate Certificate in Engineering

**Special Requirements - Essential Equipment**

Students will need access to Microsoft Excel and MATLAB. Students enrolled in this unit will get the access in Microsoft Excel and MATLAB.

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Engineering Computing is an introduction to using computation to solve real problems. The unit also aims to instil sound principles of program design that can be utilized in many units throughout the students' course. The basic elements and structures of a high level language are taught. Students are exposed to numerous engineering problems and are encouraged to implement solutions using an algorithmic approach.

## 700106.4 Engineering Computing (WSTC AssocD)

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

Basic knowledge in use of computers and Windows operating system

**Equivalent Units**

300027 - Engineering Computing, 700018 - Engineering Computing (WSTC)

**Unit Enrolment Restrictions**

Students must be enrolled in 7022 Associate Degree in Engineering

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Engineering computing is an introduction to using computation to solve real problems. The unit also aims to instil sound principles of program design that can be utilised in many units throughout the students' course. The basic elements and structures of a high level language are taught. Students are exposed to numerous engineering problems and are encouraged to implement solutions using an algorithmic approach.

## 700018.4 Engineering Computing (WSTC)

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

Basic knowledge in use of computers and Windows operating system

**Prerequisite**

Students enrolled in 7066/7162 Diploma in Engineering Extended or 7082 Bachelor of Engineering Extended (WSTC First Year Program) must pass 700204 Introductory Programming (WSTC Prep) before enrolling in this unit.

**Equivalent Units**

300027 - Engineering Computing, 700106 - Engineering Computing (WSTC Assoc Deg)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College unless specific permission has been granted by the School of Computing, Engineering & Mathematics. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year2 units.

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Engineering Computing is an introduction to using computation to solve real problems. The unit also aims to instil sound principles of program design that can be utilized in many units throughout the students' course. The basic elements and structures of a high level language are taught. Students are exposed to numerous engineering problems and are encouraged to implement solutions using an algorithmic approach.

## 300481.4 Engineering Electromagnetics

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

The students should have a good understanding of 300021 - Electrical Fundamentals or equivalent

**Prerequisite**

**200238.2** Mathematics for Engineers 2 AND **300963.1** Engineering Physics OR **300464.2** Physics and Materials

**Equivalent Units**

300022 - Electromagnetics, 300073 - Electromagnetic Compatibility

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This unit introduces Maxwell's equations in integral and differential form and their application to basic theory and application of electromagnetic structures, wave propagation, guides waves, antennas and Electromagnetic compatibility.

## 300482.2 Engineering Geology and Concrete Materials

**Credit Points** 10 **Level** 1

**Equivalent Units**

85002 - Engineering Geophysics, 300039 - Mechanics and Materials

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From 2015, this unit is replaced by 300984 Pavement Materials and Design. Students are introduced to the principles of Civil and Environmental Engineering Chemistry, Civil and Environmental Engineering Geology, and Concrete Materials. The students are exposed to real world engineering problems requiring knowledge of Civil and Environmental Engineering Chemistry, Civil and Environmental Engineering Geology and Concrete Materials. The knowledge gained from this unit will be directly applicable to other units of Civil and Environmental Engineering key programs.

## 301001.3 Engineering Geomechanics

**Credit Points** 10 **Level** 3

**Prerequisite**

**300732.2** Structural Analysis AND **300985.1** Soil Mechanics OR **300731.2** Soil Engineering

**Equivalent Units**

300485 - Foundation Engineering

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This unit will present the application of principles of soil mechanics to the solution of foundation and geotechnical problems including the evaluation of allowable bearing capacity of shallow and pile foundations, the stability of earth retaining structures and the stability of slopes.

## 700109.4 Engineering Management for Engineer Associates (WSTC AssocD)

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Students must be enrolled in 7022 Associate Degree in Engineering

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The unit will provide the knowledge and skills to enable students to support the achievement of organisational goals through applying knowledge of environment and internal culture. The unit evaluates planning processes and goal setting to achieve superior performance and compares alternative approaches to motivation of work team members. Students will consider types of managerial communications and their associated communications channels in achieving best professional practice.

## 300965.3 Engineering Materials

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

HSC mathematics (not General Mathematics), physics and chemistry.

**Equivalent Units**

300462 - Engineering & Design Concepts (EDC), 700021 - Engineering and Design Concepts (UWSC), 700105 - Engineering and Design Concepts (UWSC Assoc Deg), 700147 - Engineering Materials (WSTC Assoc Deg), 700152 - Engineering Materials (WSTC)

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This unit will introduce fundamentals of engineering materials. The topics will include materials structure, properties, processing and applications, degradation of materials, sustainability, and the selection of materials for various engineering applications.

## 500066.1 Engineering Materials (UG Cert)

**Credit Points** 10 **Level** 1

**Equivalent Units**

300965 Engineering Materials, 300462 Engineering and Design Concepts, 700147 Engineering Materials (WSTC AssocD), 700152 Engineering Materials (WSTC), 700021 Engineering and Design Concepts (WSTC), 700105 Engineering and Design Concepts (WSTC AssocD)

**Unit Enrolment Restrictions**

Students must be enrolled in the course : 7178 Diploma of Aerotropolis Industry 4.0 (Mechatronic Skills) or 7182 Undergraduate Certificate in Engineering

**Special Requirements - Essential Equipment**

College approved Calculator.

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This unit will introduce fundamentals of engineering materials. The topics will include materials structure, properties, processing and applications, degradation of materials, sustainability and the selection of materials for various engineering applications.

## 700147.4 Engineering Materials (WSTC AssocD)

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

HSC mathematics (not General Mathematics), physics and chemistry

**Equivalent Units**

300462 - Engineering and Design Concepts, 700021 - Engineering and Design Concepts (UWSC), 700105 - Engineering and Design Concepts (UWSC Assoc Deg), 300965 - Engineering Materials, 700152 - Engineering Materials (WSTC)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7022 - Associate Degree in Engineering

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This unit will introduce fundamentals of engineering materials. The topics will include materials structure, properties, processing and applications, degradation of materials, sustainability and the selection of materials for various engineering applications.

## 700152.6 Engineering Materials (WSTC)

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

HSC mathematics (not General Mathematics), physics and chemistry

**Prerequisite**

Students enrolled in 6033 Diploma in Engineering/Bachelor of Engineering Studies or 7034 Diploma in Engineering or 7066 Diploma in Engineering Extended must pass 700146 Mathematics 2 before enrolling in this unit.

**Equivalent Units**

300462 - Engineering and Design Concepts, 300965 - Engineering Materials, 700021 - Engineering and Design Concepts (UWSC), 700105 - Engineering and Design Concepts (UWSC Assoc Deg), 700147 - Engineering Materials (WSTC Assoc Deg)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year 2 units.

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This unit will introduce fundamentals of engineering materials. The topics will include materials structure, properties, processing and applications, degradation of materials, sustainability and the selection of materials for various engineering applications.

## 300963.3 Engineering Physics

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

HSC physics and HSC mathematics (not General Mathematics)

**Equivalent Units**

300464 - Physics and Materials, 700020 - Physics and Materials (UWSC), 700117 - Physics and Materials (UWSC Assoc Deg), 700151 - Engineering Physics (WSTC), 700153 - Engineering Physics (WSTC AssocD)

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This unit serves as an introduction to the fundamentals of engineering physics with appropriate applications in a wide range of engineering and industrial design systems.

## 700153.4 Engineering Physics (WSTC AssocD)

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

HSC physics and HSC mathematics (not General Mathematics)

**Equivalent Units**

300464 - Physics and Materials, 300963 - Engineering Physics, 700020 - Physics and Materials (UWSC), 700117 - Physics and Materials (UWSC Assoc Deg), 700151 - Engineering Physics (UWSC)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering

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This unit serves as an introduction to the fundamentals of engineering physics with appropriate applications in a wide range of engineering and industrial design systems. Students will be expected to solve problems by applying the laws and principles of engineering physics in the following areas covered by the unit – units and vectors, linear and circular motion, photons, electrons and atoms, force systems and equilibrium, work and energy applications, dynamics of rotational motion, fluid dynamics, heat and thermodynamics, periodic motion and wave phenomena, electricity and magnetism.

## 700151.5 Engineering Physics (WSTC)

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

HSC physics and HSC mathematics (not General Mathematics)

**Prerequisite**

Students enrolled in 7034 Diploma in Engineering, 7066 Diploma in Engineering Fast Track or 6033 Diploma in Engineering/Bachelor of Engineering Studies must pass 700145 Foundation Physics 2 before enrolling in this unit.

**Equivalent Units**

300464 - Physics and Materials, 300963 - Engineering Physics, 700020 - Physics and Materials (UWSC), 700117 - Physics and Materials (UWSC Assoc Deg), 700153 - Engineering Physics (WSTC Assoc Deg)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year 2 units.

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This unit serves as an introduction to the fundamentals of engineering physics with appropriate applications in a wide range of engineering and industrial design systems.

## 300483.6 Engineering Project

**Credit Points** 20 **Level** 4

**Prerequisite**

**300053.3** Professional Practice

**Corequisite**

**300741.2** Industrial Experience (Engineering)

**Equivalent Units**

85018 - Civil and Environmental Engineering Project 2

**Incompatible Units**

300484 - Engineering Thesis, 300668 - Advanced Engineering Thesis

**Unit Enrolment Restrictions**

Successful completion of 240 credit points.

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This unit includes a capstone project which demonstrates student's professional level of idneifying, planning, designing, executing, testing and documenting an engineering project or activity.

## 700110.4 Engineering Project (WSTC AssocD)

**Credit Points** 10 **Level** 2

**Prerequisite**

**700118.2** Professional Practice for Engineer Associates (WSTC AssocD) OR **700307.1** Management Practices for Engineer Associates (WSTC AssocD)

**Unit Enrolment Restrictions**

Students must be enrolled at The College in 7022 Associate Degree in Engineering. Student must have completed at least 100 Credit Points in their Associate Degree in Engineering Program prior to enrolling in the 700110 Engineering Project (WSTC AssocD).

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In this unit, students will use project management tools, techniques and practices to plan and control a project that achieves stated requirements on time and within budget. Students will plan a project including the creation of a statement of work, a work breakdown structure and an appropriate set of supporting work packages.

## 300971.3 Engineering Project 1

**Credit Points** 10 **Level** 4

**Corequisite**

**300741.2** Industrial Experience (Engineering)

**Unit Enrolment Restrictions**

Students must be enrolled in the Bachelor of Engineering, Bachelor of Engineering (Honours) or Bachelor of Engineering Advanced (Honours) and have successfully completed 200 credit points.

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This unit describes engineering as a profession, including professional ethics and legal obligations highlighted. Fundamentals and theories related to contract and project management will form part of this unit. Throughout the semester, the focus will be on development of research and presentation skills of students enrolled in this unit. This will be achieved through employment of appropriate research skills on a capstone project which demonstrates student's professional level of identifying, planning, and designing engineering project and completion of a technical progress report. The capstone project will be continued in unit 300972 Engineering Project 2.

## 300972.3 Engineering Project 2

**Credit Points** 10 **Level** 4

**Prerequisite**

**300971.1** Engineering Project 1

**Corequisite**

**300741.2** Industrial Experience (Engineering)

**Unit Enrolment Restrictions**

Students must be enrolled in Bachelor of Engineering, Bachelor of Engineering (Honours) or Bachelor of Engineering Advanced (Honours) and must have successfully completed 200 credit points.

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Throughout the semester, the focus will be on development of research and presentation skills of students enrolled in this unit. This will be achieved through employment of appropriate research skills on a capstone project which demonstrates student's professional level of executing, testing and documenting an engineering project and completion of a technical report. This unit is a continuation of 300971 Engineering Project 1.

## 300967.3 Engineering Science Project 1

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Students must be enrolled in 3691 Bachelor of Engineering Science, 6033 Diploma in Engineering/Bachelor of Engineering Studies or 7117 Diploma in Engineering/ Bachelor of Engineering Studies and must have successfully completed 160 credit points.

.....

This unit describes engineering as a profession, including professional ethics, legal obligations and fundamentals and theories related to project management. The focus will be on development of research and presentation skills of students enrolled in this unit. It will be achieved through employment of appropriate research skills on a capstone project which demonstrates student's knowledge in identifying and planning an engineering project.

## 300968.3 Engineering Science Project 2

**Credit Points** 10 **Level** 3

**Prerequisite**

**300967.1** Engineering Science Project 1

**Unit Enrolment Restrictions**

Students must be enrolled in 3691 Bachelor of Engineering Science, 6033 Diploma in Engineering/Bachelor of Engineering Studies or 7117 Diploma in Engineering/ Bachelor of Engineering Studies and must have successfully completed 180 credit points.

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In this unit, the focus will be on development of research and presentation skills of students, which will be achieved through employment of appropriate research skills on a capstone project. It will demonstrate student's knowledge by conducting an engineering project and completion of a technical report.

## 300973.3 Engineering Thesis 1: Preliminary Investigations

**Credit Points** 10 **Level** 5

**Unit Enrolment Restrictions**

Students must be enrolled in 3689 Bachelor of Engineering, 3728 Bachelor of Engineering (Honours)/Bachelor of Business or 3740 Bachelor of Engineering (Honours) and have successfully completed 220 credit points.

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The Engineering Thesis 1 - Preliminary Investigations unit consists of a research project designed and implemented under the direction of an academic supervisor and research mentor. This unit is the culmination of studies for students who have completed their first three years of an undergraduate degree and provides substantial training in Preliminary Investigations. Under staff supervision, students are allocated a particular topic for their research, design their own programme of research, and perform the research. The emphasis of this unit is on the application of research knowledge gained in other units to the practical conduct of the individual research project. This unit provides final year engineering students with the opportunity to undertake research on a specialist topic within their Key Program of undergraduate study.

## 300974.3 Engineering Thesis 2: Detailed Investigations

**Credit Points** 10 **Level** 5

**Prerequisite**

**300973.2** Engineering Thesis 1: Preliminary Investigations

**Unit Enrolment Restrictions**

Students must be enrolled in 3689 Bachelor of Engineering, 3728 Bachelor of Engineering (Honours)/Bachelor of Business or 3740 Bachelor of Engineering (Honours) and have successfully completed 220 credit points.

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The Engineering Thesis 2 - Detailed Investigations unit consists of a research project designed and implemented under the direction of an academic supervisor and research mentor. This unit is the culmination of studies for students who have completed their first three years of an undergraduate degree and provides substantial training in detailed Investigations. Under staff supervision, students are allocated a particular topic for their research, design their own programme of research, and perform the research. The emphasis of this unit is on the application of research knowledge gained in other units and in Engineering Thesis 1 - Preliminary Investigations to the practical conduct of the individual research project. This unit provides final year engineering students with the opportunity to undertake research on a specialist topic within their Key Program of undergraduate study.

## 300029.5 Engineering Visualization

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

C++ Programming and 3-D Geometry

**Prerequisite**

Students must have passed 300027 Engineering Computing and either 300076 Microprocessor Systems or 300044 Microcontrollers and PLCs

**Equivalent Units**

80151 - Computer Graphics

**Unit Enrolment Restrictions**

Students must have successfully completed 160 credit points.

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This unit aims to provide a comprehensive introduction to fundamental concepts and algorithms in engineering visualization. Topics covered include visualization hardware, scan conversion of geometric primitives, 2D and 3D transformations, 3D viewing and projection, hidden surface removal, solid modelling, illumination models and image manipulation.

## 300674.2 Engineering, Design and Construction Practice

**Credit Points** 10 **Level** 1

**Equivalent Units**

300034 Introduction to Professional Practice; 300461 Eng. & Industrial Design Practice; 300964 Intro. to Eng. Practice; 300975 Professional Competencies; 301030 Intro. to Industrial Design Methods; 700038 & 700107 Eng. Design & Construction Practice;

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From 2014 this unit will be replaced by 300964 Introduction to Engineering Practice for Engineering courses; 300975 Professional Competencies for Construction courses and 301030 Introduction to Industrial Design Methods for Design courses. This unit encourages students to explore the professional responsibilities and challenges faced by Engineers, Designers and Building professionals. Students are introduced to emerging issues and approaches to sustainability and the complex nature of the design problems they will encounter in professional practice. Students engage in a semester-long research and problem solving task that addresses environmental and social sustainability imperatives and fosters fundamental research, design and communication skills. Special emphasis is placed on lifelong learning, academic literacy and professional skills including information literacy, project management, and teamwork which equip students for subsequent academic and professional contexts.

## 200614.3 Enterprise Industrial Relations

**Credit Points** 10 **Level** 2

**Prerequisite**

**200300.2** Managing People at Work

**Equivalent Units**

61432 - Enterprise Industrial Relations

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Enterprise Industrial Relations builds participants' analytical and research abilities, developing capacity to identify, diagnose and engage with industrial relations challenges from different stakeholder perspectives. Participants work with real-world industrial relations, looking at individual employees' workplace and labour market experiences; the goals and activities of managers; and the role and practices of tribunals, enforcement agencies, employer associations and trade unions. This is done through activities that require working collaboratively on problems using online research to investigate contemporary practice, such as the drivers behind enterprise agreements and the implications of institutional arrangements and trade unions for productivity, equity and human resource utilisation. It is a core unit for the human resource management undergraduate program.

## 200911.1 Enterprise Innovation and Markets

**Credit Points** 10 **Level** 1

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Enterprise Innovation and Markets introduces students to key concepts, business models and issues surrounding contemporary business. Students will develop an understanding of the private enterprise system and business ownership, the implications of marketing and economics on market structure together with managing innovation. Building on the foundation knowledge of the key principles of markets, students will be able to transfer this knowledge into their subsequent study of specialist areas. The unit also aims to develop students' communication skills by working in teams to enhance their literacy proficiency and enhance their critical thinking in preparation for the more advanced units of the degree.

## 200909.2 Enterprise Law

**Credit Points** 10 **Level** 1

**Equivalent Units**

61511 - Introduction to Legal Principles, 200184 - Introduction to Business Law, 700004 - Introduction to Business Law (UWSC), 700079 - Introduction to Business Law (Creative Industries), 700254 - Enterprise Law (UWSC)

**Unit Enrolment Restrictions**

This unit is not to be taken as part of a Bachelor of Laws course attempt. External offerings are only available to students enrolled in a Property Major and to students enrolled in WSU Online Bachelor of Business. UEH offerings are only available to students enrolled in the Bachelor of Business or Bachelor of Business and Commerce, attending offshore on-campus, at the University of Economics, Ho Chi Minh City.

**Special Requirements - Essential Equipment**

Property students enrolled in the external offerings are required to have regular access to a computer with reliable internet.

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This is an introductory law unit designed to introduce the fundamentals of law in a commercial context. The unit introduces students to the basic principles of law and the legal system as well as examining some of the major areas of law that impact on commercial dealings. This unit examines the legal system, the way law is made and the main areas of law relevant to starting and running a business including contracts, negligence and consumer protection.

## 200912.1 Enterprise Leadership

**Credit Points** 10 **Level** 1

**Equivalent Units**

200571 - Management Dynamics, 700252 - Enterprise Leadership (WSTC)

**Incompatible Units**

200879 - Introduction to Business Studies

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Enterprise Leadership begins the development of the understanding of the role and function of business management and enterprise leadership concepts. Enterprise leaders need to balance a range of stakeholder perspectives in dynamic internal and external environments at local and global levels. Students are introduced to people, managerial and organisational processes designed to achieve enterprise leadership. Problem solving scenarios and experiential learning provide students with a foundation to develop personal and professional skills required to effectively manage their careers.

## 700255.3 Environmental Building Design (WSTC)

**Credit Points** 10 **Level** 1

**Equivalent Units**

301062 - Environmental Building Design

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year 2 units.

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This unit explores the important parameters that are used to facilitate sustainable change in the built environment. Building design is a tool to minimise the use of scarce resources and reduce the impact on the natural Australian landscape. Improving the standard of liveability in urban and peri-urban communities is addressed through the development of holistic building design solutions.

## 300737.6 Environmental Engineering

**Credit Points** 10 **Level** 2

**Equivalent Units**

85021 - Environmental Engineering

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This unit teaches the fundamental theory and methods required for a civil engineer to solve environmental issues they would face in their professional life.

## 300840.2 Environmental Planning and Climate Change

**Credit Points** 10 **Level** 2

**Equivalent Units**

300629 - Environmental Planning; 300783 - Environmental Planning & Climate Change

**Incompatible Units**

300704 - Healthy Built Environments

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This unit is an introduction to environmental planning in local and state government and in particular the role of planning in protecting the natural environment, enhancing

population health and/or encouraging sustainable development practices. Students focus on goal-setting for environmental protection and then explore how planning policy can assist with achieving these goals. Current metropolitan planning and strategy is examined using the Metropolitan Strategy for Sydney as the primary case study. The unit scopes environmental planning policies introduced by state, local and Commonwealth governments to adapt to climate induced impacts on the environment and on community health and well being.

## 301274.1 Environmental Planning, Policy & Regulation

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

It is expected that students will have completed some Level 1 units that have some environmental content

**Equivalent Units**

300840 Environmental Planning and Climate Change
300841 Environmental Regulations and Policy

**Special Requirements - Essential Equipment**

Outdoor attire for field-work activities

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This unit is an introduction to environmental planning and environmental regulations in local and state governments. It covers the role of planning and enforcement of regulations in protecting the natural environment, enhancing public health and/or encouraging sustainable development practices. Students become familiar with the key legislation for environmental protection and then explore how planning and regulations can assist with achieving optimal environmental outcomes. Current planning and regulations are examined using urban development and planning in Sydney as the primary case study. The unit includes key environmental planning policies and important legislation used by state, local and Commonwealth governments to protect the natural and built environment and to protect public health.

## 300284.4 Environmental Risk Management

**Credit Points** 10 **Level** 3

**Equivalent Units**

EH309A - Environmental Management 1, 300532 - Agricultural Risk

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This unit examines the world of environmental risk management and will introduce students to environmental management systems, methods of quantitative risk assessment together with processes of Environmental Impact Assessment and Environmental Auditing. With an emphasis on solving real world problems, this unit covers environmental and agricultural risks such as urban, peri-urban and rural growth; industrial and agricultural land use; contaminated land, and climate change.

## 401174.1 Epidemiology of Non-Communicable Diseases

**Credit Points** 10 **Level** 7

**Corequisite**

**401076.1** Introduction to Epidemiology OR **401173.1** Introduction to Clinical Epidemiology

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit will document the fundamental concepts in epidemiology and control of non-communicable diseases (NCDs), common research methods used in NCD epidemiology, and unique applications of these methods in key NCD areas, including reproductive epidemiology, behavioural epidemiology, epidemiology of ageing and epidemiology of specific NCDs (including cardiovascular disease, diabetes, cancer, chronic respiratory diseases, musculoskeletal problems and mental health problems). The principal goals of this unit are to provide a broad overview of the field, and to develop the knowledge and skills needed to (i) critically evaluate published research in NCD epidemiology and (ii) design an epidemiological study to address an NCD topic.

## 700310.2 Essential Literacy for Construction Professionals I (WSTC Prep)

**Credit Points** 10 **Level** Z

**Equivalent Units**

700209 - Introduction to Academic Communication 1 (WSTC Prep); 700275 - Communication Skills for Construction Management (WSTC Prep); 700276 - Academic and Professional Communication (WSTC Prep); 700280 - Essential Skills for Academic Success (WSTC Prep); 700283 - Professional Communication Skills for Engineering (WSTC Prep); 900107 - Introduction to Academic Communication 1 (WSTC Prep)

**Unit Enrolment Restrictions**

Students must be enrolled at The College in 7136 - Diploma in Building Design Management Extended or 7165 - Diploma in Construction Technology Extended

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This unit is designed to improve the English proficiency of Construction Technology students to enable them to achieve academic success. The unit assists students to comprehend academic and professional texts, identify key ideas and evidence, and identify and apply certain rhetorical moves which are common in academic communication. It also aims to help students to improve grammatical skills that relate to academic writing, summarise and synthesise information, and understand why, when and how to cite information.

## 700319.1 Essential Literacy for Construction Professionals II (WSTC Prep)

**Credit Points** 10 **Level** Z

**Prerequisite**

**700310.1** Essential Literacy for Construction Professionals I (WSTC Prep)

**Equivalent Units**

700056 - Academic English; 700210 - Introduction to Academic Communication 2 (WSTC Prep); 900021 - Academic English; 900108 - Introduction to Academic Communication 2 (WSTC Prep)

**Unit Enrolment Restrictions**

Students must be enrolled at The College in 7136 - Diploma in Building Design Management Extended; 7165 - Diploma in Construction Technology Extended; 6031 - Diploma in Building Design Management/ Bachelor of Building Design Management; 6045 - Diploma in Construction Technology/Bachelor of Construction Technology

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This unit is designed to improve the English language proficiency of local and international Construction Technology students and to improve the English proficiency of Construction Technology students. The unit further develops the expository skills developed in Essential Literacy for Construction Professionals I and introduces critical writing techniques. The unit uses authentic genres and writing techniques common in Academic writing. Through the development of these techniques students will improve critical literacy skills that relate to academic writing and spoken and written genres that are typical in the Construction Technology profession.

## 200468.2 Estimating 1

**Credit Points** 10 **Level** 2

**Equivalent Units**

301207 - Building Estimates and Tendering

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In 2019 this unit will be replaced by 301207 - Building Estimates and Tendering. This unit provides students with an understanding of the various factors that affect the cost of buildings: for new construction, renovations and demolition work. We introduce students to a range of costing techniques so that they have the skills necessary to prepare builder's estimates. By completing this unit, students will be confident to estimate the cost of labour, materials and subcontracting in order then to determine cost effective building solutions.

## 300726.4 Estimating 2

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Building construction including residential, light industrial and small commercial as covered in the subjects Building 1 and Building 2 and building measurement as covered in Building Quantities and Estimating as covered in Estimating 1.

**Equivalent Units**

BG412A - Estimating 2

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The aim of this unit is to give students a hands-on experience of the tendering process for construction professionals. Students undertake a team research project to determine the optimum parameters for a civil/building infrastructure estimation.

## 102250.3 Ethical Leadership

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Students must have successfully completed 40 credit points of study in their course with a minimum GPA of 5.0 to enrol in this unit. Students who are enrolled in the Bachelor of Creative Leadership (BCL) must enrol in the unit under the BCL. Enrolment in the unit for students enrolled in the BCL is at the discretion of the Academy or the Director of Academic Program.

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This unit focuses on major ethical theories, challenges, and concepts in a cross disciplinary environment. Students' knowledge and understanding of ethics will be further developed through interdisciplinary lenses on critical ethical thinking and decision-making. Students will be required to analyse ethical frameworks and systemic failure to discuss and reflect on various cross disciplinary challenges in diverse settings. By applying ethical concepts to personal journeys as citizen scholars and future professionals, students will develop their own ethical framework and gain skills required for future success as emergent leaders.

## 100897.2 Everyday Life

**Credit Points** 10 **Level** 1

**Equivalent Units**

63234 - Introduction to Cultural Studies, 700135 - Everyday Life (WSTC)

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In 2022, this unit replaced by 102913 - Introduction to Culture and Society. This unit introduces students to key themes and issues in the study of everyday life. It draws on different disciplinary areas - especially anthropology, sociology and cultural studies - and different theoretical and methodological perspectives to examine the ways cultural practices and meanings are used to shape human identities and societies in everyday life. It will focus on rituals and routines in the different spaces of everyday life, and the ways these contribute to the production of local worlds and the key cultural categories that give meaning to these worlds. It will include a focus on how we research everyday life.

## 401168.1 Evidence Based Health Care

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

A basic knowledge of research methods at undergraduate level plus basic nursing knowledge and clinical nursing experience.

**Equivalent Units**

400206 Evidence Based Nursing

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

**Special Requirements - Essential Equipment**

Access to the internet and computer.

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This unit is designed to develop students' knowledge of the principles and processes necessary for evidence-based clinical practice. General concepts associated with evidence-based health care are explored. In addition, students are assisted to formulate focused clinical questions and conduct a comprehensive literature search for research evidence that may assist in answering such questions. Issues and techniques involved in the rigorous appraisal of research reports are addressed. The importance of clinical significance when making clinical judgements about the implementation of research findings are also explored.

## 101874.3 Experiential Learning in Communities (ELC)

**Credit Points** 10 **Level** 2

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Experiential Learning in Communities (ELC) is a unit in which students come to understand the value of service learning within the university student community as part of the Equity Buddies Support Network. As this unit explores a service learning approach to teaching and learning it includes a participation component which comprises a combination of lectures, tutorials, debriefing group meetings and peer mentoring partnerships. Enrolment in ELC is open to first, second and third year students. Students will develop skills in pedagogy and practice within the unit through supporting fellow students' learning experiences and transition to university. The unit develops students' understandings about communities of practice, peer learning, interpersonal and intercultural communication, meta-cognition, reflection and the reflection process, and academic literacy.

## 401266.2 Experimental Design and Analysis PG A

**Credit Points** 20 **Level** 7

**Corequisite**

**800166.1** Research Design 1: Theories of Enquiry OR
**800169.1** Research Design 2: Practices of Research OR
**800167.1** Research Literacies

**Incompatible Units**

401162 - Experimental Design and Analysis PG NOTE: Co-Requisite units removed from Spring 2021

**Special Requirements - Essential Equipment**

Students must meet discipline specific requirements, eg. personal protective clothing.

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Experimental Design and Analysis can be taken independently or in combination in Autumn (Experimental Design and Analysis PG A) and/or Spring (Experimental Design and Analysis PG B) semesters. Working closely with their assigned supervisor(s), students in the health, medical, biomedical and natural sciences will enhance their expertise in experimental methodologies and knowledge of advanced discipline-specific concepts in the first year of the Masters of Research. Completion of one these two units will allow students to demonstrate theoretical and practical skills directly relevant to their proposed research project. Completion of both units will allow students to build upon initial results, and to gain experience in additional methodologies and experimental techniques. These units will also complement the Master of Research core units Research Design 1 and 2, providing a foundation for students to formulate their research question and thesis proposal.

## 401267.2 Experimental Design and Analysis PG B

**Credit Points** 20 **Level** 7

**Corequisite**

**800166.1** Research Design 1: Theories of Enquiry OR
**800169.1** Research Design 2: Practices of Research OR
**800167.1** Research Literacies

**Incompatible Units**

401162 - Experimental Design and Analysis PG NOTE: Co-Requisite units removed from Spring 2021

**Special Requirements - Essential Equipment**

Students must meet discipline specific requirements, eg. personal protective clothing.

.....

Experimental Design and Analysis can be taken independently or in combination in Autumn (Experimental Design and Analysis PG A) and/or Spring (Experimental Design and Analysis PG B) semesters. Working closely with their assigned supervisor(s), students in the health, medical, biomedical and natural sciences will enhance their expertise in experimental methodologies and knowledge of advanced discipline-specific concepts in the first year of the Masters of Research. Completion of one these two units will allow students to demonstrate theoretical and practical skills directly relevant to their proposed research project. Completion of both units will allow students to build upon initial results, and to gain experience in additional methodologies and experimental techniques. These units will also complement the Master of Research core units Research Design 1 and 2, providing a foundation for students to formulate their research question and thesis proposal.

## 200589.3 Export Strategy and Applications

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Principles of international business including the dynamics of foreign business markets, international marketing and research methods, comparative global economics, international corporate finance and strategy. The basics of

economics, accounting, law, statistics and business communications are also assumed.

**Prerequisite**

**200591.2** Introduction to International Business

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Australia's export opportunities have yet to be fully realised. In other words, of all the firms that could be considered as having an export potential, only a very small percentage of them actually do (export). This unit teaches students about the management perspectives and the operational requirements needed for a successful export initiative. Specific topics include strategic intent, capability assessment, information gathering, export entry models evaluation, market mix factors, risk management, export finance, logistics and sales management. The overriding aim of the unit is to enable students to be confident in working in an international business environment and to seek out and undertake management and operational tasks necessary to the global development of the firm.

## 100866.3 Film and Drama

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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This unit offers a survey of one or more of the following: drama, drama on film and film drama. It will examine key concepts in cinema theory, dramatic form and film production. Comparison may be made between theatre texts and film adaptations related to the work of specific dramatists; or drama texts may be considered in themselves (often with the screening of filmed versions of these dramas). Alternatively, film itself will be considered as a disinct dramatic form whose contours will be traced in relation to the work of important directors. Viewing films will form an integral part of this unit and students will be expected to attend screenings of films as well as a lecture and tutorial.

## 301245.3 Final Year Project 1 (UG Engineering)

**Credit Points** 10 **Level** 4

**Corequisite**

**300741.2** Industrial Experience (Engineering)

**Equivalent Units**

300973 Engineering Thesis 1

**Unit Enrolment Restrictions**

Students must be enrolled in 3728 Bachelor of Engineering (Honours)/Bachelor of Business or 3740 Bachelor of Engineering (Honours) or 3690 Bachelor of Engineering Advanced (Honours) and they must have completed at least 200 credit points.

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This unit describes engineering as a profession, highlighting professional ethics and legal obligations. The focus will be on the development of design skills or research and presentation skills for students enrolled in this unit. This will be achieved through the use of appropriate design/research skills on a capstone project, which will be either design oriented or research oriented on a specialist topic. Under the direction of an academic supervisor and research mentor, the project will demonstrate the student's professional level of identifying, planning, and designing an engineering project while at the same time completing a technical progress report. The capstone project will be continued in the unit Final Year Project 2 (UG Engineering).

## 301246.4 Final Year Project 2 (UG Engineering)

**Credit Points** 10 **Level** 4

**Prerequisite**

**301245.1** Final Year Project 1 (UG Engineering)

**Equivalent Units**

300974 Engineering Thesis 2

**Unit Enrolment Restrictions**

Students must be enrolled in 3728 Bachelor of Engineering (Honours)/Bachelor of Business or 3740 Bachelor of Engineering (Honours) or 3690 Bachelor of Engineering Advanced (Honours) or 3771 Bachelor of Engineering Advanced (Honours) and they must have completed at least 220 credit points.

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This unit continues the on-going work started in unit Final Year Project 1 (UG Engineering). Throughout the semester students will further develop their design, research and presentation skills. This will be achieved through employment of appropriate design/research skills to finish a capstone project, either design-oriented or research-oriented project, which demonstrates student's professional level of executing, testing, documenting an engineering project and completing a technical report.

## 200910.2 Financing Enterprises

**Credit Points** 10 **Level** 1

**Equivalent Units**

700253 - Financing Enterprises (WSTC)

**Special Requirements - Essential Equipment**

Students will need to have a basic scientific calculator to be able to complete this unit.

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Financing an enterprise plays an important role in ensuring its survival. Financing Enterprises focuses on the different types of enterprises available to start a business, financial statements issued by enterprises, key sources of finance available to small and large businesses, and how the surrounding financial and macroeconomic environments affect an enterprises performance. Participants in the unit will learn how to identify, analyse and interpret financial information using industry related database. The unit utilises problem solving and case studies so participants can understand the real world significance of finance. Successful completion of the unit equips participants with key concepts involved in financing enterprises.

## 300762.4 Fluid Mechanics

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

200238 - Mathematics for Engineers 2

**Prerequisite**

**200237.3** Mathematics for Engineers 1 AND **300963.1** Engineering Physics OR **300464.2** Physics and Materials

**Equivalent Units**

300740 - Water Engineering, 700111 - Fluid Mechanics (WSTC Assoc Deg)

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This unit provides a basic understanding of fluid mechanics principles. Fluid mechanics is the study of the properties and movements of fluids, and key to understanding many of our engineering systems involving fluids, such as power generation, lubrication, irrigation and navigation. While the main focus is on incompressible fluids, effects of compressible fluids are also discussed. The theories learned in classes are reinforced in laboratory sessions. Students analyse fluid systems and apply principles in designing basic pipes and open-channels.

## 700111.4 Fluid Mechanics (WSTC AssocD)

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

700102 - Mathematics for Engineers 2

**Prerequisite**

**700101.1** Mathematics for Engineers 1 (UWSC Assoc Deg) AND **700153.1** Engineering Physics (UWSC Assoc Deg)

**Equivalent Units**

300762 - Fluid Mechanics

**Unit Enrolment Restrictions**

Students must be enrolled in 7022 Associate Degree in Engineering

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The unit provides a basic understanding of fluid mechanics principles. While the main focus will remain on incompressible fluids, effects of compressible fluids will also be discussed. The theories learned in classes will be reinforced in laboratory sessions.Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## 200992.2 Food and Beverage Management

**Credit Points** 10 **Level** 2

**Equivalent Units**

200710 - Managing the Food and Beverage Experience
200145 - Food Service Systems

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A key component of the hospitality industry is the provision of food and beverages. Food and Beverage Management prepares the student to run his or her own business, or to take on management level positions in this field. It focuses on the managerial knowledge and skills required to supervise all components of a foodservice system: marketing, menu planning, production, service, financial controls and quality assurance. Those who wish to work in management positions within the foodservice industry, including in hospitals, restaurants, hotels, and other establishments will benefit from this unit.

## 102305.1 Food: A Cultural History

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points in the currently enrolled course.

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The modern world seems obsessed by food. This unit will look at the historical development of sources of food, from archaeological evidence of the earliest human meals through the emergence of agriculture and its scientific modifications to the physical and cultural evidence of technological changes in methods of preservation, preparation, cooking and eating various foods. Food is also integral to our social, religious and cultural lives and the unit will investigate the historical origins of some of these customs. Students will have the opportunity to range across time and place (through readings, recipes and field trips) to explore foods that are part of their cultural heritage - or feasts that they wish they could have eaten from centuries long past.

## 102621.2 Formal and Functional Grammar

**Credit Points** 10 **Level** 7

**Equivalent Units**

102336 - Functional Grammar, 100722 - Functional Grammar

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit invites students to study the grammar of English from two related perspectives, formal grammar and functional grammar. The unit provides students with skills in the use of grammar in application to the analysis of a diverse range of texts. Students will develop an understanding of the structures and the functions of English across contexts. This skilled application will enhance their capacities as teachers of English, understanding how English varies in its use and allowing them to support their own students' skilled use of English across contexts.

## 300485.3 Foundation Engineering

**Credit Points** 10 **Level** 3

**Prerequisite**

**300732.2** Structural Analysis AND **300731.2** Soil Engineering OR **85012.2** Soil Engineering

**Equivalent Units**

85017 - Foundation and Drainage

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This unit will present the application of principles of soil mechanics to the solution of foundation and geotechnical problems including the evaluation of allowable bearing capacity of shallow and pile foundations, the stability of earth retaining structures, the stability of slopes and soft soil engineering.

## 700144.2 Foundation Physics 1 (WSTC Prep)

**Credit Points** 10 **Level** Z

**Assumed Knowledge**

Year 10 Mathematics and Science or equivalent

**Equivalent Units**

900079 - Foundation Physics 1 (UWSC)

**Incompatible Units**

700026 - Physics (UWSCFS); 900036 - Physics (UWSC)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College.

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This unit provides an introduction to the essentials of Physics. This unit is focused on skills and knowledge that students from engineering courses need in their first year of study. Students cover introductory topics in Mechanics, Energy and Power Electricity.

## 700145.3 Foundation Physics 2 (WSTC Prep)

**Credit Points** 10 **Level** Z

**Assumed Knowledge**

Year 10 Mathematics and Science or equivalent

**Prerequisite**

Students enrolled in 7066 Diploma in Engineering Extended must have passed 700144 Foundation Physics.

**Equivalent Units**

900080 - Foundation Physics 2 (UWSC)

**Incompatible Units**

900068 - Physics (UWSC), 700026 - Physics (UWSCFS)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College.

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This unit provides students with the background knowledge and skills in physics needed for Engineering courses. Students will cover more advanced content in Mechanics, Electricity, Magnetism and waves.

## 200979.2 Foundations of Entrepreneurship

**Credit Points** 10 **Level** 1

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This unit introduces students to the necessary foundations for starting a business and entrepreneurship. Students will be introduced to the Australian business environment and key principles for setting up an entrepreneurial and competitive Business within that environment. Students will be exposed to theories and frameworks on entrepreneurship, entrepreneurial processes, and new and emerging entrepreneurship issues. Students will apply knowledge gained through completing a Business Model Canvass (BMC) case study of a real start-up company or completing a BMC of their own entrepreneurial venture (for students already undertaking an entrepreneurial project).

## 101754.3 From Corroborees to Curtain Raisers (Day Mode)

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Successful completion of 40 credit points of study in the currently enrolled course.

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This unit will provide students with an understanding of the historical framing and cultural re-framing of Indigenous Australians in the live arts. Students will be provided with a theoretical understanding of the politics of representation through examining and reflecting on the transitional shifts that Indigenous artists' have made from: cultural performance to theatre productions; 'traditional' storytelling to telling of stories through poetry and writing; ceremonial sounds to music and spoken word performance; documentary film to screen based drama to exploring new technologies and moving image performance. Students will be introduced to a variety of Indigenous artists and their creative works.

## 101755.2 From Ochre to Acrylics to New Technologies

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Successful completion of 40 credit points of study in currently enrolled course.

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This unit examines the emergence of the Indigenous Australian visual arts movement. It will provide students with a body of knowledge which explores the transition of art-making as it emerged from an historical cultural practice: from ochre to acrylics to new technologies. In examining the Indigenous visual arts movement beginning with the Papunya Tula artists, students will gain an insight into the significant contribution urban and regional Indigenous artists make to the Australian economy and culture. Students will have the exciting opportunity to participate in site visits and engage with a number of Indigenous visual artists. This unit is available to all Undergraduate students who have open electives.

## 700112.4 Fundamentals for Engineering Studies (WSTC AssocD)

**Credit Points** 10 **Level** 1

**Unit Enrolment Restrictions**

Students must be enrolled in 7022 Associate Degree in Engineering

.....

This unit serves as an introduction to the key mathematics and physics concepts required to study engineering at a tertiary level. This unit has two major components, physics and mathematics. The physics component includes physical quantities, scalars and vectors, kinematics and dynamics. The mathematics component includes basic arithmetic and algebra, trigonometry, coordinate geometry, relations and functions and introduction to differentiation.

## 200977.3 Fundamentals of Australian Law

**Credit Points** 10 **Level** 1

**Equivalent Units**

200006 - Introduction to Law, 700157 - Introduction to Law (WSTC)

**Incompatible Units**

200909 - Enterprise Law, 700254 - Enterprise Law (WSTC)

.....

This unit provides students with the fundamental legal skills required to succeed in the study and practice of law. Students will be introduced to the Australian legal system, legal study skills, academic integrity, how law is made, how cases and statute interact, the Australian court hierarchies, case analysis skills, statutory interpretation skills, an introduction to the role of legal professionals in Australia.

## 201085.1 Fundamentals of Marketing Analytics

**Credit Points** 10 **Level** 1

**Corequisite**

**200083.2** Marketing Principles

**Special Requirements - Essential Equipment**

A computer and internet access.

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The unit introduces students to the core concepts associated with business analytics in general, and marketing analytics in particular. The unit aims to provide students foundational knowledge of the range of marketing problems for which business analytics can facilitate solutions. In doing so, the unit focuses on developing an understanding of the nature and tools of analytics as they may apply to key elements of marketing strategy frameworks from a largely non-mathematical/non-statistical perspective.

## 300463.4 Fundamentals of Mechanics

**Credit Points** 10 **Level** 1

**Equivalent Units**

700023 Fundamentals of Mechanics (WSTC), 700113 Fundamentals of Mechanics (WSTC Assoc Deg)

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In this unit students acquire knowledge about the action and interaction of forces, moments and couples in two and three dimensions. Students then apply this to the analysis of the equilibrium of single bodies, and of trusses, mechanisms, and transversely loaded beams. In addition, students study the dynamics of a non-rotating body, and a body rotating about a fixed axis. Further, they study the friction between bodies. Students conduct experiments to see how the lecture content applies to the real world, and make extensive use of vector algebra.

## 700113.4 Fundamentals of Mechanics (WSTC AssocD)

**Credit Points** 10 **Level** 1

**Equivalent Units**

700023 - Fundamentals of Mechanics (WSTC), 300463 - Fundamentals of Mechanics

**Unit Enrolment Restrictions**

Students must be enrolled in 7022 Associate Degree in Engineering

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This unit deals with the action and interaction of forces, moments and couples in two and three dimensions. It examines the equilibrium of single bodies, and of trusses and mechanisms. It then looks at the friction between bodies. It covers the dynamics of a non-rotating body, and a body rotating about a fixed axis. Finally, internal loadings are investigated – particularly within a transversely loaded beam. The unit makes extensive use of vector algebra.

## 700023.5 Fundamentals of Mechanics (WSTC)

**Credit Points** 10 **Level** 1

**Prerequisite**

Students enrolled in 7034 Diploma in Engineering, 7066 Diploma in Engineering Extended or 6033 Diploma in Engineering/Bachelor of Engineering Studies must pass 700145 Foundation Physics 2 before enrolling in this unit.

**Equivalent Units**

300463 - Fundamentals of Mechanics, 700113 - Fundamentals of Mechanics (WSTC Assoc Degree)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year2 units.

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This unit deals with the action and interaction of forces, moments and couples in two and three dimensions, on machine elements and simple structures. It examines the equilibrium of single bodies, of multi-body structures and of mechanisms. It then covers the dynamics of a particle. A systematic approach to solving practical engineering design problems is provided. The unit makes extensive use of vector algebra.

## 102602.1 Gender and Genre

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit considers the intersection of gender and genre in various narrative forms. Through a variety of texts that may include polemic, conduct literature, plays, novels, poetry and film, students will examine the construction of masculinity and femininity within various genres, and consider the ways in which genres themselves may be gendered. Beginning in the seventeenth century, the unit also considers the strategies that women writers, in particular, have used to participate in literary production by adopting and adapting particular generic conventions. A consideration of the ways in which gender and genre may be connected also allows students to consider questions of literary production and circulation, literary value and reputation.

## 101694.3 Geographies of Migration

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 80 credit points.

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An international and cross-institutional discussion of immigration and settlement. Covering the theory and experience of immigration. Considers the international and national regulation of immigration and settlement policies, as well as refugee policy. Case studies are from Australia and Canada, and Singapore. Within mixed tutorial groups (with students from Singapore, Vancouver & Sydney) students will exchange experiences and opinions of immigration.

## 102576.2 Global Health, Migration and Development

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

A broad and coherent knowledge, with depth in the underlying principles and concepts in one or more disciplines in Arts or Social Sciences.

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This unit introduces students to the intersection between global health, human migration and economic development. Students are introduced to international efforts to manage and support better health for all populations, particularly those under stress through civil conflict or epidemic. Through the lens of migration theories, the course will examine why and how people migrate, the dynamisms and complexities of migrants' settlement in their new environment, the socio-economic and political dimensions of forced migration and its consequences, and the relationship between voluntary migration and economic and development goals at regional, national and international level.

## 102345.2 Global Structures, Local Cultures

**Credit Points** 10 **Level** 1

**Equivalent Units**

101363 - Global Structures, Local Cultures

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Globalisation has created a world of convergence and, at the same time, of division. Nations appear now to be less sovereign and more limited, as their political, economic and cultural systems become enmeshed within, and in some instances subordinate to, a world system. Similarly, certain cultural styles, from the choice of footwear to neo-liberal politics, have become part of a global culture. However, while we as citizens are becoming increasingly international, we as humans are looking for meaning in smaller, local, communities. Globalisation has not, it seems, created an homogenous world culture, but rather, a world in which citizens participate in, and identify with, both global and local cultures. This subject traces the emergence of a global society and culture and, through the use of case studies drawn from throughout the world, examines the links between global structures and local cultures.

## 200815.2 Globalisation and Sustainability

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Basic understanding of economic concepts

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Globalisation and Sustainability introduces students to critical debates about the role of global and national institutions of power in determining economic, environmental, social and cultural outcomes. Students will be introduced to opposing and controversial theoretical perspectives on globalisation and sustainability and issues relating to Aboriginal and Torres Strait Islander peoples to improve policy and practice in the future. In the process students will be encouraged to consider problems relating to ethics, rights, justice and democracy in society. This unit can also be taken by students who have studied social science and humanities.

## 200984.1 Government and Public Law

**Credit Points** 10 **Level** 2

**Prerequisite**

**200977.1** Fundamentals of Australian Law OR **200006.2** Introduction to Law

**Incompatible Units**

200814 - Commercial Transactions Law

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Government and Public Law introduces students to the field of public law and the operation of government in Australia. The unit has four key focus areas: Public Law in Australia, How Government Works, Government Accountability and Integrity, and Individuals and Government. The unit is intended to provide an overview of government and public law in Australia. The unit provides a foundation for the later study of Administrative Law and Constitutional Law.

## 300729.3 Graphic Communication and Design

**Credit Points** 10 **Level** 1

**Equivalent Units**

700150 - Graphic Communication and Design (WSTC)

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In 2020 this unit replaced by 301228 – Drawing and CAD. This unit is designed to provide students with the knowledge and skills necessary to develop graphic communication, basic CAD skills and elementary design skills suitable for application within the building industry. Content: This unit provides students with an introduction to elements of graphic communication skills necessary to comprehend various building types in plan, section, elevation, isometric and perspective views. The unit also introduces students to basic CAD (Computer Aided Design and Drafting) concepts and skills. Students will also be required to develop appropriate analytical and problem solving skills in dealing with a realistic building project.

## 700150.3 Graphic Communication and Design (WSTC)

**Credit Points** 10 **Level** 1

**Equivalent Units**

700306 - Drawing and CAD (WSTC), 300729 - Graphic Communication and Design, 301228 - Drawing and CAD

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year Two units.

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This unit has been replaced by 700306 Drawing and CAD (WSTC) from Spring 2021. This unit is designed to provide students with the knowledge and skills necessary to develop graphic communication, basic CAD skills and elementary design skills suitable for application within the building industry. This unit provides students with an introduction to elements of graphic communication skills necessary to comprehend various building types in plan, section, elevation, isometric and perspective views. The unit also introduces students to basic CAD (Computer Aided Design and Drafting) concepts and skills. Students will also be required to develop appropriate analytical and problem solving skills in dealing with a realistic building project.

## 102276.2 Graphic Design: Developing a Personal Portfolio

**Credit Points** 10 **Level** 3

**Prerequisite**

**102270.1** Graphic Design: The Professional Context OR **102275.1** Contextual Design Studies OR **301168.1** Incubator 3: Product Development

**Unit Enrolment Restrictions**

Successful completion of 160 credit points in currently enrolled course.

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This unit focuses on the development of your industry orientated practice and personal portfolio development. Throughout the previous core units and unit pairings you will have developed particular skills and interests that are beginning to define your design practice and your portfolio. The briefs set in this unit offer you the opportunity to specialise further and to develop your portfolio and will, where possible, include live briefs and competitions. You will continue to refine and develop your visual language, material and digital skills, and continue to develop as an independent learner. The unit will culminate in an industry event, where students will have the opportunity to get their portfolios critiqued by design industry representatives.

## 301074.3 Graphics 1: 2D and 3D Industrial Design Communication

**Credit Points** 10 **Level** 1

**Equivalent Units**

300302 - Industrial Graphics 1: Presentation

**Special Requirements - Essential Equipment**

Drawing/Rendering Equipment: A3 Bleedproof paper pad, A3 Layout paper pad, HB lead pencil, Set of French curves, Artliner pens (various size nibs), Copic markers (C2, C4, C6), Soft blue pencil (Aquarelle brand), Pentel Sign Pen

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From 2020, this unit will be replaced by equivalent unit 301283 - Design Graphics: Presenting Innovation. Design visualisation in the form of 2D and 3D graphics is a necessary component of the overall design process. This unit introduces students to using different types of representation; from low-fidelity to high-fidelity (ideation through sketching, scaling and accuracy, concept communication in 2D and 3D). Students will learn through project work in which they integrate use of different software tools and drawing skills to realise and communicate their ideas and design intent.

## 301076.3 Graphics 2: Visual Simulation

**Credit Points** 10 **Level** 2

**Equivalent Units**

300310 - Industrial Graphics 3: 3D Solids

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From 2020, this unit will be replaced by 301287 - Designing Graphics: Engineering Documentation. Three-dimensional digital simulations are used to model

manufactured artefacts, create virtual environments and simulate dynamic processes or systems. In this unit students will use 3D modelling software to simulate static and dynamic 3D structures. High quality photorealistic rendering and 3D printing file preparation will also be covered.

## 301079.3 Graphics 3: 3D Engineering Specifications and Visualisation

**Credit Points** 10 **Level** 2

**Prerequisite**

**301076.1** Graphics 2: Visual Simulation OR **300964.1** Introduction to Engineering Practice

**Equivalent Units**

300282 Industrial Graphics 2: Transition

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From 2020, this unit will be replaced by 301290 - Design Graphics: Communication for Manufacture. This unit introduces formal graphical communication methods used by professionals engaged in the design, manufacture and management of manufactured items. Students will learn how to follow Australian Standards for engineering drawings, and to use Computer-Aided Design (CAD) software for accurately representing and modelling basic parts and assemblies. The documentation of design concepts in the form of three dimensional (3D) computer models provides data that can be applied in a wide variety of ways to facilitate the understanding and production of parts and assemblies. The objective of this unit is to introduce students to the industry standard software and hardware employed to generate these models, via a "hands on" approach to creating 3D data. Issues such as data transfer, rapid prototyping, computer numerical control (CNC) machining and visualisation will also be discussed.

## 301091.3 Graphics 4: Kinetic Narratives

**Credit Points** 10 **Level** 2

**Prerequisite**

**301079.1** Graphics 3: 3D Engineering Specifications and Visualisation

**Equivalent Units**

300312 - Industrial Graphics 4: Surface

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From 2020, this unit will be replaced by 301308 - Design Practice: Sustainable Manufacturing. This unit introduces students to real life applications of graphics technology, such as 3D games, 3D virtual environments, immersive learning spaces, dynamic 3D simulations of ecosystems, artwork for public spaces, virtual agents. Students will use different software platforms to create interactive 3D environments. They will apply theories of human-computer interaction to design projects where they develop: "a dynamic simulation of a natural or artificial ecosystem", a dynamic 3D virtual environment in which users interact with agents.

## 301092.3 Graphics 5: Creative Computing

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

It is preferred but not mandatory that students should have understanding of 3D CAD and basic programming since this is a personalised unit.

**Special Requirements - Essential Equipment**

Online work safety module must have been completed prior to workshop space use. Specific requirements regarding machine use may require student safety inductions per apparatus i.e. drill, sander.

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From 2020, this unit will be replaced by 301307 - Creative Digital: Robots and Avatars. This is a personalised project-based learning unit that assists students to creatively bring together their skills learned in previous units (e.g. Graphics and Visualisation stream in Industrial Design). It introduces students to current problem solving in professional practice that negotiates between physical and digital relations (e.g. a robot and its avatar) and assists them to develop a professional portfolio show piece for the time they look for a job in the industry. Learning by experimentation, the unit links traditional skillsets (e.g. software, 3D printing) with new forms of design (e.g. digital design and engineering narratives within augmented and virtual environments).

## 200925.1 Growth, Cycles and Crises

**Credit Points** 10 **Level** 3

**Equivalent Units**

200816 - Economic Theories, Controversies and Policies

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Growth, Cycles and Crises gives students an up-to-date understanding of macroeconomic developments, empirical puzzles, theoretical controversies and policy dilemmas of the day. It begins with an overview of different schools of thought and their historical roots. There follows an investigation of recent global crises, their underlying causes, and the policy responses in the major economic powers. We also consider the stresses on Australia resulting from global economic fluctuations and shifts, causing disruptive exchange rate swings and fiscal difficulties. Finally with major developments around the world and the controversies arising from them, such as debt crises and austerity debate, the problem of unbalanced growth in rapidly developing economies, and stagnation and policy zigzags apparent in some advanced economies.

## 101716.3 Healing and Culture

**Credit Points** 10 **Level** 3

**Incompatible Units**

100886 - Special Topics in Cultural and Social Analysis

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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This unit takes as its starting point the idea that disease has social and cultural as well as biological origins. What people define as good health and illness, and how they treat the latter are profoundly shaped by cultural frameworks. Healing practices, including biomedicine, are underpinned by cultural understandings and larger configurations of power. We will examine notions of disease causality across cultures and explore the argument that good and ill health are about more than just the body. Popular understandings of illness and its origins, and techniques for responding to and seeking to remedy illness can be a reflection of how different societies imagine their place in the world.

## 300988.3 Highway Infrastructure

**Credit Points** 10 **Level** 3

**Prerequisite**

**300733.2** Introduction to Structural Engineering AND **300985.1** Soil Mechanics

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This unit focuses on two key aspects of highway infrastructure design, namely, the bridge superstructure design and the foundation soil preparation prior to construction of the highway pavement. It aims to provide students with specialised knowledge in bridge loading and structural design, methods to deal with soft and weak grounds, and building of earth embankments to support the highway pavement. These aspects will be discussed in relation to Australian design codes.

## 102583.1 History of Ideas

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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Ideas matter. It has been said that “ideas are what men and women live by, and will occasionally die for.” If you want to explore and understand the relationship between ideas and actions across a range periods, places and perspectives, then this is the unit for you. The history of ideas is concerned with exploring and understanding the lived experience, the reality of ideas. We consider how the history of ideas can help us to interpret key thinkers and their ideas and how these ideas have shaped societies past and present.

## 101991.1 History of Sexuality

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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This unit introduces students to some key debates about the definition and origin of sexuality as a concept, and to the historical origins of particular sexual identities and the political values attributed to them. It teaches students to take account of the differing ways that forms of desire, pleasure, obscenity, pornography, perversion, sin and transgression have been articulated across time and place. In the unit we traverse an array of temporal moments and geographic loci, drawn to the 'hotspots' of historiographic contention.

## 300675.4 Honours Thesis

**Credit Points** 40 **Level** 5

**Equivalent Units**

300484 - Engineering Thesis, 300036 - Major Investigation and Report 1, 300037 - Major Investigation and Report 2

**Incompatible Units**

300483 - Engineering Project AND 300668 - Advanced Engineering Thesis

**Unit Enrolment Restrictions**

Students must be enrolled in course 2607 Bachelor of Construction Management or 3621 Bachelor of Engineering to enrol in this unit. Students should have achieved at least 220 credit points AND must have a course GPA equal to or greater than 5.0. Students must enrol in this unit in two consecutive halves (e.g., 1H and 2 H for start-year intake or 2H and 1H for mid-year intake).

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This unit provides honours level students with the opportunity to undertake research on a specialist topic within their Key Program of undergraduate study.

## 200995.2 Hospitality and Tourism in Practice

**Credit Points** 10 **Level** 3

**Incompatible Units**

200708 - Hospitality Industry

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Hospitality and tourism play an important role in society impacting directly and indirectly on many elements of everyday life. With the ability to both positively and negatively impact on individuals, communities and economies, hospitality and tourism are viewed from the perspective of different stakeholders. Within this unit a contextual understanding and analysis of hospitality and tourism is provided through interaction with industry practitioners and discussion of contemporary issues impacting the industry.

## 200708.2 Hospitality Industry

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Basic knowledge of hospitality.

**Equivalent Units**

200562 - Hospitality Markets, MK301A - Hospitality Marketing

.....

This unit will be replaced by 200995 Hospitality and Tourism in Practice from 2018. With focus on the experiential nature of hospitality products, the unit canvasses a contemporary selection of specialised food services, lodging and other hospitality businesses, including resorts, cruise ships and registered clubs. The unit

develops students understanding of the micro and macro environments of such businesses, with concentration on the factors influencing business development. There is also consideration of the design, development and commercial viability of such products, especially in the context of consumer expectations.

## 200561.4 Hospitality Management Applied Project

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

This is an advanced unit, students are expected to have gained an introductory level of knowledge in hospitality management.

**Prerequisite**

**200707.2** Service Industry Studies

**Equivalent Units**

200140 - Tourism and Hospitality Research Project

**Incompatible Units**

200580 - Sport Management Applied Project

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Students studying Hospitality Management Applied Project may have the opportunity to undertake an international field trip to experience the hospitality industry from an international perspective. This unit provides students a unique opportunity to integrate knowledge gained from operational and theoretical perspectives of hospitality studies into application in an engaged research project in hospitality management. Students will engage in comprehensive projects which bring together real world industry problems and hospitality theory.

## 200584.3 Hospitality Management Operations

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

This is an advanced unit. Students are expected to have an introductory level of knowledge in hospitality management.

**Equivalent Units**

HS206A - Hospitality Management Operations

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This unit will be replaced by 200994 Hospitality Profitability and Entrepreneurship from 2018. Hospitality Management Operations emphasises the role of operations management in the hospitality sector, especially as an element of corporate strategy. The unit demonstrates how operations management is related to, and aligned with, the other functional areas of a hospitality organisation. The field of study includes revenue management in the hospitality industry, as well as variety of qualitative and quantitative techniques to enable students to analyse problems in hospitality operations.

## 200989.2 Hospitality Places and Spaces

**Credit Points** 10 **Level** 3

**Equivalent Units**

200148 - Planning and Design Hospitality Facilities

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Contemporary hospitality settings often require specialised services and distinctive facilities. Matching the physical spaces and places with hospitality, to the services and experiences provided, is an integral part/consideration of contemporary hospitality practice. As future managers in the industry, it is imperative to have a sound basic knowledge of the design, development and commercial viability of such products, services and spaces, especially in the context of consumer expectations, in order to remain competitive and sustainable.

## 200994.2 Hospitality Profitability and Entrepreneurship

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Introductory level of knowledge in hospitality management

**Equivalent Units**

200584 - Hospitality Management Operations

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This unit examines operations management in the hospitality sector, as a means to achieve profitability. Students will develop advanced knowledge and desirable attributes applicable to operational planning, financial management, risk management and legal compliance, human resource management, business relationship management and sustainability. Special emphasis is placed on providing students with knowledge and skills to make informed decisions to proceed and develop their own ventures or alternatively be more innovative within existing businesses.

## 102661.1 How to Write History

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit introduces students to specific styles of historical methodology, considering how each of these styles alter the kinds of questions historians ask, how they select their sources, and how they account for the differences between past and present. Students undertake an independent, guided Applied Project on a historical methodology relevant to their intended thesis project.

## 301280.2 Human Centred Design Research Methods

**Credit Points** 10 **Level** 1

**Equivalent Units**

300034 - Introduction to Professional Practice; 300461 - Engineering & Industrial Design Practice; 300674 -

Engineering, Design & Construction Practice; 700038 - Engineering, Design & Construction Practice; 700107 - Engineering, Design & Construction Practice; 301030 - Introduction to Industrial Design methods

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Professional practice across many disciplines has evolved toward a co-creative model where stakeholders, human and environmental contexts and the integration of an interdisciplinary approach is seen to accelerate multiple solution developments and innovation. Students are introduced to design research methods and professional design practice in a human-centred discovery project gaining strategic problem solving and critical thinking skills as a core outcome. Special emphasis is placed on lifelong learning, academic literacy and professional skills including information literacy, leveraging knowledge sets, project management, and design innovation all of which equip students for future interactions in academic and professional contexts.

## 200740.5 Human Resource and Industrial Relations Strategy

**Credit Points** 10 **Level** 3

**Prerequisite**

**200300.2** Managing People at Work OR **200890.1** Management Practice

**Incompatible Units**

200618 - Human Resource Strategy, 200615 - Industrial Relations Strategy

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Students in 'Human Resource and Industrial Relations Strategy' analyse the human resource and industrial relations strategies of the major employment relations stakeholders. While the principal focus is on the organisational level of analysis and on the strategic interventions introduced by management, the unit also analyses the strategic roles of government, trade unions, and employer associations. Through a range of learning activities, students examine the relationship between business strategies and HR/IR strategies, strategic HR/IR interventions, the concept of strategic choice as it concerns stakeholders and the evaluation of strategy. Students also engage with the development of human resource management and industrial relations as a professional field and consider ethics and professional standards.

## 200859.1 Human Resource Development

**Credit Points** 10 **Level** 2

**Prerequisite**

**200300.2** Managing People at Work

Students enrolled in 1735 Bachelor of Humanitarian and Development studies are exempt from having to complete 200300 Managing People at Work.

**Equivalent Units**

61422 - Employee Training and Development, 200610 - Employee Training and Development

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'Human Resource Development' (HRD) looks at how the development of people and their skills is essential to the 21st century workplace. By examining the key processes of employee learning, development and career management, participants will understand HRD's impacts on workers' employability and careers, organisational effectiveness and economic sustainability. The unit introduces concepts of workplace learning and engages participants in case study discussion and research into current HRD trends in Australian and international workplaces. The goal of Human Resource Development is to support participants to ask questions about current practice and to encourage critical understanding of the field.

## 101988.1 Human Rights and Culture

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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This unit examines the cultural consequences of the rise of the global human rights regime. It introduces debates about cultural relativism and universal human rights and explores a number of areas of contemporary conflict between cultural practices and human rights norms. It also examines the role of human rights NGOs in creating a new global human rights culture, and asks what it means to be a subject of human rights.

## 300570.4 Human-Computer Interaction

**Credit Points** 10 **Level** 3

**Equivalent Units**

300160 - Software Interface Design

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A key component to the discipline of Information Systems is the understanding and the advocacy of the user in the development of IT applications and systems. IT graduates must develop a mind-set that recognizes the importance of users and organisational contexts. They must employ user centered methodologies in the development, evaluation, and deployment of IT applications and systems. This unit examines human-computer interaction in order to develop and evaluate software, websites and information systems that not only look professional but are usable, functional and accessible.

## 102577.2 Humanitarian and Development Agendas and Progress

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

A broad and coherent knowledge, with depth in the underlying principles and concepts in one or more disciplines in Arts or Social Sciences.

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This unit enables students to map the emergence of international humanitarian and development agencies from the mid-20th century to the modern day. Students will consider and asses international efforts to end poverty,

such as the United Nations Conference on the Human Environment, the Rome Declaration and Plan of Action on World Food security, the Millennium Development Goals (MDGs) and the post-2015 Sustainable Development Goals (SDGs). A particular emphasis is placed on developing the skills to gauge the accountability and ethical approaches of humanitarian actors and agencies in global development.

## 300765.4 Hydraulics

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Mathematical knowledge equivalent to the content within 200238 Mathematics for Engineers 2.

**Prerequisite**

**300762.2** Fluid Mechanics

**Equivalent Units**

300740 - Water Engineering, 85009 - Water Engineering

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The unit covers the principles of open channel hydraulics, pipe hydraulics and culvert hydraulics. Specific topics in open channel hydraulics include uniform flow, resistance equations, specific energy principle, flow types, gradually varied flow and rapidly varied flow. The purpose is to enable design of efficient open channels to meet engineering requirements. In addition, principles of pipe and culvert hydraulics are introduced, enabling analysis and design of pipe networks and culverts.

## 300989.2 Hydrogeology

**Credit Points** 10 **Level** 3

**Prerequisite**

**300762.2** Fluid Mechanics

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From 2021 this unit will be replaced by 301397 Hydrogeology. This unit covers principles of hydrogeology. It contains concepts related to occurrence of groundwater, groundwater movement, groundwater hydraulics, water wells, quality of groundwater, groundwater modelling and groundwater management. The objectives of this unit are to enable students to learn the concept of groundwater and apply the learnt concepts in solving groundwater problems in engineering practice.

## 301397.1 Hydrogeology

**Credit Points** 10 **Level** 3

**Prerequisite**

**300762.3** Fluid Mechanics

**Equivalent Units**

300989 - Hydrogeology

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This unit covers principles of hydrogeology. It contains concepts related to occurrence of groundwater, groundwater movement, groundwater hydraulics, water wells, quality of groundwater, groundwater modelling and groundwater management. The objectives of this unit are to enable students to learn the concept of groundwater and apply the learnt concepts in solving groundwater problems in engineering practice.

## 301397.2 Hydrogeology

**Credit Points** 10 **Level** 3

**Prerequisite**

**300762.3** Fluid Mechanics

**Equivalent Units**

300989 - Hydrogeology

.....

This unit covers principles of hydrogeology. It contains concepts related to occurrence of groundwater, groundwater movement, groundwater hydraulics, water wells, quality of groundwater, groundwater modelling and groundwater management. The objectives of this unit are to enable students to learn the concept of groundwater and apply the learnt concepts in solving groundwater problems in engineering practice.

## 300766.2 Hydrology

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Assumed knowledge: a) solution to elliptical, parabolic and hyperbolic partial differential equations b) finding roots of an equation c) application of descriptive statistics to analyse a given set of data d) ability to apply distribution theory to fit a given set of data

**Prerequisite**

**300740.1** Water Engineering OR **300765.2** Hydraulics

**Equivalent Units**

300479 - Drainage Engineering

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The unit covers the principles of surface water hydrology. It will focus on catchment analysis, specifically focussing on rainfall-runoff relationships. Successful completion of this unit will enable hydrologic analysis of catchments to satisfy various regulatory requirements.

## 101017.5 Illustrating Narrative

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

An ability to use the computer programs 'In-Design, Photoshop, and Illustrator' in a Macintosh computer lab.

**Prerequisite**

**100943.2** Image Design: Illustration OR **102263.1** Image Design

**Equivalent Units**

10005 - Illustrative Narrative 3 and 10006 - Illustrative Narrative 4

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This unit explores the conceptual, stylistic and format design of illustration for, and as, narrative. Through the design of an individual illustrated book project, students are encouraged to consider the design of different narrative

forms, illustrative techniques and styles in relation to content, target audience, client, context, and genre.

## 102271.2 Illustrating Popular Culture

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

An ability to use the computer programs "In-Design, Photoshop, and Illustrator" in a Macintosh computer lab.

**Prerequisite**

**102263.1** Image Design

**Equivalent Units**

101063 - Illustration: Advertising and Editorial

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This unit explores the powerful qualities of illustration when used as a visual communication strategy in the design of popular culture: within an advertising campaign and as social commentary through editorial illustration. The potential of a range of illustrative styles, mediums and techniques, will be explored through experimentation with a variety of visual strategies that utilize lateral thinking, linked to the design of professional concepts, developmental processes and media considerations.

## 102263.3 Image Design

**Credit Points** 10 **Level** 1

**Equivalent Units**

100943 - Image Design: Illustration, 101884 - Introduction to Photomedia, 700196 - Image Design (WSTC)

**Unit Enrolment Restrictions**

Students must be enrolled in one of the following courses 1571 Bachelor of Design (Visual Communication), 1696 Bachelor of Communication, 1736 Bachelor of Communication (Dean's Scholars), 1737 Bachelor of Design - Visual Communication (Dean's Scholars), 1838 Bachelor of Creative Industries, 1839 Bachelor of Design/ Bachelor of Creative Industries, 1840 Bachelor of Communication/Bachelor of Creative Industries, 1841 Bachelor of Music/Bachelor of Creative Industries, 1842 Bachelor of Arts/Bachelor of Creative Industries, 1843 Bachelor of Graphic Design (Pathway to Teaching Secondary), 6007 Diploma in Communication/Bachelor of Communication, 6009 Diploma in Communication/Bachelor of Creative Industries, 6011 Diploma in Design/Bachelor of Design (Visual Communication), 6013 Diploma in Design/ Bachelor of Graphic Design (Pathway to Teaching Secondary), 6015 Diploma in Communication/Bachelor of Screen Media (Arts and Production).

**Special Requirements - Essential Equipment**

For the Photography part of the unit you will need 1 x 8 gig storage drive. For the Illustration part of the unit you will need 1 X A4 pad of cartridge paper, 1 X A4 pad of Canson Illustration paper, 2 X A4 sheets of different coloured Canson Illustration paper (120gsm) (for the paper cut-out illustration) (students should purchase this paper stock when they have created their design, so that the colour choice is appropriate to the theme), 1 x 3B Woodless Progresso pencil, 1 x A4 Jasart green cutting mat, 1 x Sterling art knife with safety cap, 1 X pack of 5 blades for Sterling art knife, 1 x pair of 6 inch all-purpose scissors, 1 x 30cm Steel Ruler, 1 x 11ml bottle of black drawing ink, 1 x 0.3mm black Copic Multiliner pen, 1 x 10mm pack of 400 Carven Magic dots, 1 x Elmer's craft Bond Glue Stick extra strength.

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Image Design introduces students to the use of signification and metaphor in the visual communication of verbal and written concepts. The process of creating and evaluating images is explored through the principles of visual organisation, and the experience of image making through photographic and illustrative methods, techniques and mediums.

## 301165.4 Incubator 1: Innovation and Creativity for Entrepreneurship

**Credit Points** 10 **Level** 2

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From time to time we hear stories about successful multi-million (or billion) dollar companies that started in a suburban garage. Is it that simple? The heart of the success of entrepreneurship is innovation and creativity. This unit explores the ways innovative ideas for a product or service can be turned into a successful start-up business. As such, this unit will cover topics including, but not limited to: factors essential for being able to initiate a creative idea, what is innovation, stages of developing a conceptual idea. The unit will be delivered through a number of modules. As an integral part of the unit, students are expected to engage and work in "start-up co-working space" on a regular basis. At the successful completion of this unit, students would have some possible start-up options that could be further explored into creating that multi-million (or billion) dollar company.

## 301206.4 Incubator 2: Start-up Essentials

**Credit Points** 10 **Level** 2

**Equivalent Units**

301166 - Incubator 2: Legal and Ethical Setting of Entrepreneurship

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There are unavoidable legal situations and ethical dilemmas in all professions. As an entrepreneur, facing these legal and ethical circumstances is much more formidable. This unit aims to prepare students to understand the legal and ethical landscape that applies to start-up (or any) organisation. As such, unit aims to cover the topics such as: creating a business plan, negotiating employment contracts, etc. The unit will be delivered through a number of modules. As an integral part of the unit, students are expected to engage and work in "start-up co-working space" on a regular basis. At the successful completion of this unit, students would have developed a thorough understanding of the local and international legal and ethical landscape within which modern start-up organisations operate. NOTE: This unit is offered at the Werrington Campus "Launch Pad".

## 301168.2 Incubator 3: Product Development

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Students must be enrolled in course 3746 Bachelor of Entrepreneurship (Games Design and Simulation) or 3747 Bachelor of Entrepreneurship.

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A creative spark or innovative idea is not enough to succeed as a start-up organisation. A new idea behind a product or a service needs to be first verified to understand the business opportunities out there. Then the identified opportunities need to be adjusted to formalise in a business concept. This unit aims to guide students through that process of converting the creative or innovative idea into the development of a product or service as a sound business concept. This objective is driven through teams of students advancing with their practical projects and along the way learning about a number of theoretical topics such as: prototyping, user testing, etc. The unit will be delivered through a number of modules. As a vital part of the unit, students are expected to engage and work in “start-up co-working space” on a regular basis. At the successful completion of this unit, students would have converted the innovative idea into a business product or service.

## 301169.2 Incubator 4: Commercial and Financial Setting of Entrepreneurship

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Students must be enrolled in course 3746 Bachelor of Entrepreneurship (Games Design and Simulation) or 3747 Bachelor of Entrepreneurship.

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Operating a start-up is not just about being creative and innovative; it is also about having the necessary management and operational skills, understanding the commercial and financial setting within which the organisation needs to operate it. This unit aims to provide vital details that set the background to run your organisation whether your customer base is local, national or even international. This objective is driven through a number of topics such as: setting up a business entity, accounting fundamentals, taxation fundamentals. The unit will be delivered through a number of modules. As a vital part of the unit, students are expected to engage and work in “start-up co-working space" on a regular basis. At the successful completion of this unit, students would set up as a business entity for their start-up organisation.

## 301170.3 Incubator 5: Operational Aspects of Entrepreneurship

**Credit Points** 10 **Level** 3

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Planning is an important part of setting up a start-up business. This would require investigating into setting goals, figuring out how to track progress, what to do when things don't go to plan and also to communicate your business concept to others, such as potential investors. This unit aims to develop the skills and knowledge required for making a business plan for the start-up organisation through a number of theoretical topics, such as: developing marketing and operational plans, staffing and management. At the completion of this unit, students will have developed a viable business plan for their start-up. NOTE: This unit is offered at the Werrington Campus "Launch Pad".

## 301171.2 Incubator 6: Funding and Start-up

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Students must be enrolled in course 3746 Bachelor of Entrepreneurship (Games Design and Simulation) or 3747 Bachelor of Entrepreneurship.

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This unit investigates various funding opportunities that might be suitable for your business concept through a number of theoretical topics, such as: possible funding sources including venture capitalists and angel investors, joint venture funding, pitching your ideas. The unit is structured into a number of modules. Further, as activities associated with this unit, students would have to actively seek and secure funding for the start-up.

## 301172.4 Incubator 7: Growth and Exit Strategies

**Credit Points** 10 **Level** 3

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This unit will assist students with selecting the further growth strategy, which includes deciding whether their business would grow organically or will require a fast growth model and rapid expansion strategies. The growth strategy will determine further funding decisions. Apart from this, as entrepreneurs, the students would need to also consider possible exit strategies (e.g. initial public offering (IPO), trade sales or personal redundancies). This objective is driven through a number of topics such as: elements of market research and strategies for business growth, risk management, possible exit strategies, etc. The unit will be delivered through a number of modules. As a tangible outcome, at the completion of this unit, students would have developed a future growth plan with an identification of possible exit strategies. NOTE: This unit is offered at the Werrington Campus "Launch Pad".

## 101905.3 Indigenous Cultures: A Global Perspective

**Credit Points** 10 **Level** 3

**Equivalent Units**

300113 - Indigenous Tourism, 100600 - Indigenous Cultures and Tourism: A Global Perspective

**Unit Enrolment Restrictions**

Successful completion of 60 credit points.

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Drawing on global case studies, this unit aims to introduce students to some of the pressing socio-cultural issues facing indigenous peoples around the world. The unit examines the complex relationships between globalisation,

colonialism and post-colonialism and contemporary indigenous cultures and identities. It draws attention to the way in which issues of representation, cultural autonomy, cultural commodification, development and human rights play out with respect to indigenous peoples' lives. More specifically, the unit interrogates the power relations and politics central to many of these issues and examines the nature of contemporary indigenous and non-indigenous interactions, particularly in the contexts of tourism and heritage, the cultural industries, the environment, development and urbanisation.

## 101878.2 Indigenous Landscapes

**Credit Points** 10 **Level** 1

**Equivalent Units**

300631 - Indigenous Landscape

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In 2020 this unit replaced by 102805 - Indigenous Lanscapes. Indigenous Landscapes aims to explore 'traditional' Indigenous Australian ways of knowing landscape. Specifically, the unit acknowledges and values pre-colonial Australian history and land-use practices. Content includes 'traditional' land management practices; protected area management, joint management /co-management; Native Title; Land Rights; Indigenous versus statute law; sustainable land use; cultural heritage and heritage landscapes. This unit also aims to equip students with cultural competency in order to address issues of dispossession and disadvantage brought about by the historical destruction and disruption of ecological integrity.

## 102805.1 Indigenous Landscapes

**Credit Points** 10 **Level** 1

**Equivalent Units**

101878 - Indigenous Landscape, 300631 - Indigenous Landscapes

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Indigenous Landscapes aims to explore 'traditional' Indigenous Australian ways of knowing landscape in contemporary, meaningful, and relevant ways. Specifically, the unit acknowledges and values pre-colonial Australian history and land-use practices. Content includes 'traditional' land management practices; cold-burning, protected area management, sustainable land use; cultural heritage and heritage landscapes, Sovereign land rights. This unit also aims to equip students with cultural competency in order to address issues of dispossession and disadvantage brought about by the historical destruction and disruption of ecological integrity.

## 301299.1 Industrial Design Applied Research Project (Honours)

**Credit Points** 20 **Level** 4

**Equivalent Units**

85032 Industrial Design Project (Commencement)

**Unit Enrolment Restrictions**

Successful completion of 240 credit points. Students must be enrolled in Bachelor of Industrial Design (Honours).

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The Industrial Design Honours Program provides candidates with an opportunity to undertake a significant design research project and research training component that explores design issues including products, services, systems and research methods. In this unit students combine scholarly inquiry, critical thinking, design thinking, applied design research methods and exploratory prototyping informed by state of the art research via literature review, and human-centred design methods with ethical considerations. Discussion of results of preliminary concept explorations of low to medium fidelity are further refined towards a reframed and detailed design brief, research project timeline, and evolved design research methodology in preparation for a high quality research proposal and a substantial creative work.

## 301298.1 Industrial Design Major Project (Conclusion)

**Credit Points** 20 **Level** 4

**Prerequisite**

**301295.1** Studio: Design Synthesis Capstone OR **301084.1** Design Studio 6: Ambience, Place and Behaviour

**Unit Enrolment Restrictions**

Must be enrolled in undergraduate course: Bachelor of Industrial Design (3730) and completed a minimum of 220 credit points.

**Special Requirements - Essential Equipment**

Drawing, rendering equipment, A3 visual process diary, model-making resources

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In collaboration with industry experts and community groups students will refine and complete their capstone project which was conceptualised and proposed in Industrial Design Major Project (Ideation). Students will advance their responses to complex, real-world design problems and refine their expertise in conceptualisation, problem solving, human factors, aesthetics, innovation and communication to deliver a novel product solution to stakeholders as work-ready graduates.

## 301297.2 Industrial Design Major Project (Ideation)

**Credit Points** 10 **Level** 4

**Prerequisite**

**301295.1** Studio: Design Synthesis Capstone OR **301084.1** Design Studio 6: Ambience, Place and Behaviour

**Unit Enrolment Restrictions**

Must be enrolled in undergraduate course: Bachelor of Industrial Design (3730) and have completed a minimum of 220 credit points.

**Special Requirements - Essential Equipment**

Drawing, rendering equipment, A3 visual process diary, model-making resources

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In this capstone unit students will immerse themselves in a complex real-world design problem and apply their expertise in conceptualisation, problem solving, human factors and aesthetics to create a novel solution. User-centred design, digital futures and sustainable design practice underpin all learning activities. A multidisciplinary approach is fostered, whereby students will engage with industry experts and community groups reinforcing the role of the graduate designer as an empathetic innovator.

## 300773.3 Industrial Design Project (Commencement)

**Credit Points** 30 **Level** 5

**Assumed Knowledge**

Knowledge related to the successful completion of year 3 Industrial Design or equivalent (e.g. Design & Technology) is assumed. Ability to use: E-mail, Internet Web Browser, WebCT or equivalent, Word processing program, CAD software, Workshop machinery (e.g. mill, lathe, sander, rapid prototyping machine). Knowledge and/or experience in: Referencing, Lab/Workshop O&HS, Report writing, Essay writing, Process Diary, Group work, Research Methods for Industrial Designers, Project Management, Ethical Research Approval Process.

**Prerequisite**

**300313.3** Design Studio 4: Simulate to Innovate AND **300314.2** Designed Inquiry OR **301084.1** Design Studio 6: Ambience, Place and Behaviour AND **301090.1** Contextual Inquiry

**Corequisite**

**300775.2** Industrial Experience OR **10915.2** Industrial Experience

**Equivalent Units**

85032 - Industrial Design Project (Commencement)

**Unit Enrolment Restrictions**

Successful completion of 240 credit points. Students must be enrolled in Bachelor of Industrial Design or Bachelor of Industrial Design (Honours).

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The Industrial Design Honours Program provides students with an opportunity to apply their industrial design skills to an in-depth yearlong design research project that responds to an in-depth investigation to a particular design context. In Industrial Design Major Project (Commencement), Honours candidates develop a research plan and methodology that yield design opportunities for conceptual development and resolution (to be carried out in Industrial Design Major Project Completion). In this unit, candidates produce a comprehensive research design (and seek ethics approval as needed), literature review, preliminary concept explorations and a detailed industrial design brief.

## 300774.4 Industrial Design Project (Completion)

**Credit Points** 40 **Level** 4

**Assumed Knowledge**

Knowledge related to the successful completion of year 3 Industrial Design is assumed and successful completion of Industrial Design Project Commencement and Industrial Design Project Commencement's co-requisite units.

**Prerequisite**

**300773.2** Industrial Design Project (Commencement)

**Equivalent Units**

85033 - Industrial Design Project (Completion)

**Unit Enrolment Restrictions**

Students must be enrolled in Bachelor of Industrial Design or Bachelor of Industrial Design (Honours). Ethics clearance must be obtained if required.

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The Industrial Design Honours Program provides students with an opportunity to apply their industrial design skills to an in-depth year long design research project. In Industrial Design Major Project (Completion), Honours candidates respond to the research findings and design brief that they produced in Autumn semester. They undertake detailed design development to resolve and communicate a final design solution, which is publicly exhibited at the end of the year. Their design and research communications present a strong argument for the final design and demonstrate the honours candidates capacity to undertake postgraduate design research and to join professional design practice.

## 301300.1 Industrial Design Research Thesis (Honours)

**Credit Points** 20 **Level** 4

**Prerequisite**

**301299.1** Industrial Design Applied Research Project (Honours)

**Unit Enrolment Restrictions**

Successful completion of 240 credit points. Students must be enrolled in Bachelor of Industrial Design (Honours).

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In this unit, students will extend their research journey using appropriate applied design research methods that explore usability, design semantics, functionality, sustainability and product considerations. Students will submit a creative project and exegesis on their research endeavour providing a critical analysis and reflection on outcomes that situate the work within relevant literature, ideas and industrial design field discourse. In addition to the specialist knowledge on the chosen research topic, students will learn a range of skills including academic writing, and project management.

## 300775.3 Industrial Experience

**Credit Points** 0 **Level** 3

**Assumed Knowledge**

Successful completion of 160 credit point (minimum) in either Bachelor of Design and Technology, Bachelor of Industrial Design or Bachelor of Industrial Design (Honours).

**Equivalent Units**

10915 - Industrial Experience

**Unit Enrolment Restrictions**

Students must be enrolled in Bachelor of Design and Technology, Bachelor of Industrial Design or Bachelor of Industrial Design (Honours).

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From 2020, this unit will be replaced by 301296 - Mentored Practice in Design Innovation. Students will gain real-life experience in developing new products or services within a company or organisation and be exposed to some of the decision-making processes that affect the development process of consumer products or services. This is whilst experiencing the multidisciplinary nature of the interaction of all those involved in the product development process from the conception of the idea to the introduction of a new product or service to market. Students use this opportunity to test the validity of the concepts studied in various course units to date in a real life situation and develop a sense of a company's "culture".

## 700311.2 Industrial Experience (Associate Engineer) (WSTC AssocD)

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

A broad background knowledge in the relevant engineering discipline (ie equivalent to that obtained after completing one and a half (1.5) years of the associate engineering program).

**Unit Enrolment Restrictions**

Students must be enrolled at The College in 7022 Associate Degree in Engineering. Students must have completed 60 credit points.

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Industry experience provides a significant opportunity for students to understand employer expectations in relation to working on projects and with others in a professional capacity. Students undertake six weeks full-time (37.5 hours per week) employment (or part time equivalent) to obtain relevant workplace experience in Engineering under the supervision of professional engineers in one or more companies. Students identify learning opportunities and goals with a focus on applying academic learning in practice, learning project management, work culture, professional attitude and self-awareness. Students develop critical reflective skills in reporting their progress.

## 300741.4 Industrial Experience (Engineering)

**Credit Points** 0 **Level** 3

**Equivalent Units**

81999 - Industrial Experience (Engineering)

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Industry experience is a significant opportunity for students to understand employer expectations in relation to working on projects and with others in a professional capacity. Students undertake 12 weeks full-time (37.5 hours per week) employment (or equivalent) to obtain relevant workplace experience in Engineering under the supervision of professional engineers in one or more companies. Students identify learning opportunities and goals with a focus on applying academic learning in practice, learning project management, work culture, professional attitude and self-awareness. Students develop critical reflective skills in reporting their progress.

## 300282.2 Industrial Graphics 2: Transition

**Credit Points** 10 **Level** 2

**Equivalent Units**

J1756 - Industrial Graphics (2D Drawing), J1759 - Industrial Graphics (Transition), 10940 - Technical Presentation 2, 301079 - Graphics 3: 3D Engineering Specifications and Visualisation

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From 2016 this unit will be replaced by 301079 Graphics 3: 3D Engineering Specifications and Visualisation. Engineering drawing is the formal graphical communication language used by professionals engaged in design, manufacture and management of manufactured items. This language provides the facility to describe and document three dimensional objects or concepts in two dimensions using linework, characters and symbols. This language is based on guidelines provided by Standards Australia and is compatible with a range of international drawing standards. The aim of this unit is to examine in detail the language and tools used to generate engineering drawings and to provide students with practical skills that will allow them to communicate with other professionals using this language.

## 300310.3 Industrial Graphics 3: 3D Solids

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

300282 Industrial Graphics 2 - Transition. Students from within the ID and Design & Technology degree courses should have completed this core unit before attempting Industrial Graphics 3. Students taking this as an elective fromoutside of the ID and Design & Technology courses should note that knowledge from this unit will be assumed.

**Equivalent Units**

10962 - Industrial Design Communication 2: 3D Kinetic, J2814 - Industrial Graphics (3D Modelling), 301076 - Graphics 2: Visual Simulation

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From 2016 this unit will be replaced by 301076 Graphics 2: Visual Simulation. The documentation of design concepts in the form of three dimensional (3D) computer models provides data that can be applied in a wide variety of ways to facilitate the understanding and production of parts and assemblies. The objective of this unit is to introduce students to the industry standard software and hardware employed to generate these models, via a 'hands on' approach to creating 3D data. Issues such as data transfer, rapid prototyping, computer numerical control (CNC) machining and visualisation will also be discussed.

## 300312.3 Industrial Graphics 4: Surface

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

It is assumed that students attempting IG4: Surface will be familiar with and capable at 3D solids modelling as

delivered in 300310 (IG3: 3D Solids) and graphic design/ illustration and page layout as delivered in 300302 (IG1: Presentation). Students from within the ID and Design & Technology degree courses should have completed these core units before attempting IG4: Surface. Students taking this as an elective from outside of the ID and Design & Technology degree courses should note that these skills will be assumed.

**Equivalent Units**

10963 - Industrial Design Communication 3: Materials and Properties, J2868 - Industrial Graphics (Surface), 301091 - Graphics 4: Kinetic Narratives

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From 2016 this unit will be replaced by 301091 Graphics 4: Kinetic Narratives. Starting with a sketch, drawing, physical model, or only an idea, having the ability to accurately model your designs ready for rendering, animation, drafting, engineering, analysis and manufacturing is an essential skill set for designers in all disciplines. The ability to generate 3 dimensional data and in particular, free-form 3D data within a computer and display that data in a range of formats provides a powerful design, visualisation and analysis tool. This unit introduces students to the fundamentals of 3D Wireframe, NURBS Surface and Boundary Representation (Brep) Solids Modelling and then focuses on the tools and processes available for producing a range of image types from these 3D models.

## 300724.4 Industry Based Learning

**Credit Points** 0 **Level** 4

**Equivalent Units**

BG311A - Industry Based Learning

**Unit Enrolment Restrictions**

Students must be enrolled in Bachelor of Construction Management, Bachelor of Building Design Management or Diploma in Building Design Management/Bachelor of Building Design Management.

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Students are required to undertake 1200 hours of industry based experience as required by course and professional accreditation bodies.

## 300486.2 Infrastructure Engineering

**Credit Points** 10 **Level** 2

**Prerequisite**

**300738.2** Surveying for Engineers

**Equivalent Units**

85007 - Civil & Environmental Engineering Construction, 85008 - Engineering Urban Environments, 300296 - Road & Traffic Engineering

**Unit Enrolment Restrictions**

Student must be enrolled in Bachelor of Engineering, Bachelor of Engineering Science or Bachelor of Engineering (Advanced).

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This unit will provide students with material to assist them with Civil Engineering Construction and Urban Development / Town Planning projects. The unit mainly focuses on the planning, design and construction of transportation facilities using a case of subdivision development.

## 200919.1 Innovation and Professional Practice

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 80 credit points. The Spring Composite unit offering is only available to students who have been approved for a student grant under the New Colombo Plan (NCP) Mobility Program. Any non-NCP students who enrol in this offering will be transferred by the School to the relevant Day or Evening offering.

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Innovation and Professional Practice uses design thinking to develop participants' capacity to innovate across a range of changing organisational environments and future-oriented work roles. Networking, collaboration and team work around contemporary projects will develop the attitudes and abilities characteristic of ways that professionals lead and contribute to innovation in many contexts. The unit builds on study of organisation and leadership in the Bachelor of Business, and develops participants' innovative thinking through the prism of business acumen. The unit supports work integrated learning approaches that will enable participants to develop portfolio evidence of their professional capacity to lead and participate in sustainable business change.

## 301072.4 Innovation Lab

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

This unit is designed for students who are enrolled in the Bachelor of Applied Leadership and Critical Thinking (BALCT) or other advanced courses at Western Sydney University. Students must have a minimum GPA of 5 and must have successfully completed a minimum of 40 credit points. Enrolment in this unit is at the discretion of The Academy or the Dean.

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From2H 2022 this unit replaced by 800243 Changemakers and Entrepreneurship. This unit is designed for high-achieving students who may be enrolled in Advanced degrees or the Bachelor of Applied Leadership and Critical Thinking. Technology is rapidly changing and improving. As such, continuous innovation is essential to ensure applicability into the future. The unit focuses on innovation and entrepreneurship by pushing boundaries, experimenting, learning from mistakes, and adapting to find new ways of approaching technical and social problems. In this unit, students will be empowered to design and develop innovative processes that provide solutions for real-world challenges.

## 200917.2 Innovation, Enterprise and Society

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 80 credit points.

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Innovation, Enterprise and Society focuses on forces driving innovation, creativity and technical change at the levels of entrepreneurship, enterprise, economy and society. It also examines the effects of innovation at these various levels. This unit is a professional core unit in the Bachelor of Business. The unit takes a multi-disciplinary approach utilising critical thinking, debates, problem solving, policy analysis and case studies. Students will understand the professional, social, public policy and global networks and systems informing and surrounding innovation. Successful completion of the unit equips students to appreciate the entrepreneurial, political and social dimensions of innovation.

## 300075.7 Instrumentation and Measurement

**Credit Points** 10 **Level** 3

**Prerequisite**

**300005.3** Circuit Theory OR **300735.3** Automated Manufacturing

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Through practical exercises students will engage with engineering measurement and instrumentation systems. Students determine the most appropriate measurement method and instrument, such as multimeters, digital oscilloscopes and interfacing modules, for particular applications. They will gain experience with the measurement of physical quantities and the instrumentation required to accurately present information to a controller. Additionally, transducers used to measure common physical quantities are presented in detail, while instrumentation includes a detailed analysis of zero-span circuits, Wheatstone bridges, instrumentation amplifiers, isolation amplifiers, voltage-to-current and voltage-to-frequency modules used for faithful signal transmission, digital-to-analogue and analogue-to-digital circuits to deepen student learning.

## 300515.6 Instrumentation and Measurement (PG)

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Assumed knowledge for 300515 Instrumentation and Measurement (PG) is: 1) Basic electronics including amplifier, circuit theory and circuit design; 2) A basic understanding of statistics. Computational skills (SPICE) and a basic understanding of circuit simulation are desirable.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit covers topics associated with the measurement and presentation of physical parameters. A wide range of transducers are presented in detail, while instrumentation includes a detailed analysis of a multitude of analogue and digital circuits used to amplify, transmit, and display electrical signals. The application of these modules in modern measurement equipment is presented in details.

## 102267.2 Interactive Design: Apps

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Computer literacy including working in a networked environment on a Macintosh computer; management, transportation and storage of digital information and digital production processes such as scanning, pdf production and file storage. Skills in design principles: layout, colour and typography. Literacy with image manipulation software - e. g. Photoshop

**Prerequisite**

**301074.2** Graphics 1: 2D and 3D Industrial Design Communication OR **101922.1** Web and Time-based Design

The pre-requisite unit 301704 - Graphics 1: 2D and 3D Industrial Design Communication applies to students enrolled in course 3730 Bachelor of Industrial Design only.

**Equivalent Units**

100789 - Interactive Design 1

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This unit focuses on design methodology for the development and delivery of interactive media applications (apps). Particular concepts addressed include conceptual integration and convergence of various media forms, screen design, navigational hierarchy and structures, and designing engaging interactive interfaces. General principles of interface, information architecture and interaction design will be introduced, alongside principles of digital media production.

## 102272.3 Interactive Design: Games

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Computer literacy including working in a networked environment on a Macintosh computer; management, transportation and storage of digital information and digital production processes such as scanning, pdf production and file storage. Skills in design principles: layout, colour and typography. Literacy with image manipulation software - e. g. Photoshop.

**Equivalent Units**

100949 - Interactive Design II

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This unit focuses on game design from an interactive design perspective. Approaches utilising current digital technologies for advanced interactive design are explored. Students will design and produce simple games for mobile and/or desktop delivery. The focus of the unit is about the communication and experience design, rather than technical implementation. Interactive game design examples are examined from the context of shifting production languages, convergent technologies and the design professional contexts. This unit includes game development concepts, platforms, goals and genres, player elements, simple story and character development, gameplay, levels, interface, and the game development process. Students will play games, analyse them, and complete a game design with appropriate documentation.

## 200590.2 International Business Project

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

This is a capstone International Business unit. It is assumed that students have basic international business knowledge and research skills.

**Prerequisite**

**200591.2** Introduction to International Business

**Equivalent Units**

61125 - International Business Project 1

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This is a capstone unit in International Business. The aim of the unit is to give students a real-life action learning project in which they undertake an international business strategic planning and analysis exercise for a client organisation. This project usually involves students working in small teams for a client organisation under the direct supervision of the lecturer.

## 200626.3 International Business Strategy

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

An understanding of the basic principles of marketing and international business.

**Prerequisite**

**200083.2** Marketing Principles OR **200591.2** Introduction to International Business

**Equivalent Units**

61119 - International Business Strategy

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In an environment where operating internationally is becoming the norm rather than the exception, firms are faced with ever increasing complexity when formulating their business strategy. This requires an understanding of how firms become and remain international, the basic modes of international involvement, the practice of multinational management and how firms can establish a balance between the sometimes conflicting demands of headquarters, the subsidiary and the governments of all the countries where the multinational enterprise operates. This unit will cover these issues and will deal with both large and small companies that must be global to survive.

## 200962.2 International Criminal Law and Justice

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Bachelor of Laws or equivalent qualification

**Unit Enrolment Restrictions**

Students must be enrolled in 8083 Bachelor of Research Studies/Master of Research, 8084/8085 Master of Research, 2824 Master of Laws, 2784 or 2810 Master of Laws (International Governance).

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This unit analyses the state of international criminal law and its place in the modern international legal system in light of important recent developments. It discusses why a State's national criminal laws should accord with international developments. It focuses on substantive and procedural law and examines relevant international legal concepts, general principles of international criminal law, and how international criminal tribunals function. It considers particular international crimes, participation in such crimes, defences, and important recent cases such as those of Augusto Pinochet and Slobodan Milosevic.

## 200621.3 International Human Resource Management

**Credit Points** 10 **Level** 3

**Prerequisite**

**200300.2** Managing People at Work

**Equivalent Units**

61472 - International Human Resource Management

**Unit Enrolment Restrictions**

Students must be enrolled in 2773 Bachelor of Business Administration to enrol in the online offering. All other students must obtain DAP approval.

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'International Human Resource Management' examines the implications for human resource management that arise from the internationalisation of organisations. Through portfolio reports and case studies, students analyse a range of comparative systems and structures of employment relations and the strategic management of global organisations. This analysis includes a focus on key human resource functions including recruitment, training, reward and evaluation of the impact of society, politics, economics and culture of host countries on human resource strategies. Students examine also the role of global stakeholders and assess the implications for human rights that arise from globalisation.

## 200961.2 International Human Rights Law

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in courses 8083 Bachelor of Research Studies/Master of Research, 8084/8085 Master of Research, 2810 Master of Laws (International Governance), 2824 Master of Laws or 2826 Juris Doctor.

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This unit examines the foundations of the concept of human rights under international law, how international law became concerned with the rights of individuals and the development of international measures for the protection of human rights. It examines the extent of compromise of international human rights where sovereignty, cultural relativism and political resistance preclude comprehensive incorporation of some fundamental human rights principles in domestic law. Instruments such as The Charter of the United Nations, The Universal Declaration of Human Rights, The International Covenant on Civil and Political Rights and International Covenant on Economic, Social and Cultural Rights are also examined.

## 200094.4 International Marketing

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Students should have a good understanding of marketing research, brand management and the foundations of economics.

**Prerequisite**

**200083.2** Marketing Principles OR **200591.2** Introduction to International Business

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Marketing internationally has become a necessity for many firms that wish to survive and grow in today's dynamic and increasingly linked world economy. International Marketing is concerned with understanding and successfully managing the different international economic, cultural, political and legal environments as they affect the marketing activities of companies. International Marketing examines the role of marketing research, international finance, overseas market entry and expansion strategies and the marketing mix in international markets. On completion of this unit students will have acquired a sound theoretical basis and, particularly, a practical understanding of how companies operate in international markets.

## 200963.2 International Space Law - Commercial Aspects

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Completed a law degree (Bachelor of Laws or Juris Doctor) or equivalent in any jurisdiction or have a broad understanding of both Australian and International Law. It is recommended that students without a legal qualification should review supplementary materials provided within the Learning Guide providing a summary of the Australian and International Law frameworks.

**Incompatible Units**

200652 - Space Law – Commercial Aspects

**Unit Enrolment Restrictions**

Students must be enrolled in 2824 Master of Laws, 2784 or 2810 Master of Laws (International Governance), 3735 Master of Data Science, 3699 Master of Information and Communications Technology, 3698 Master of Information and Communications Technology (Advanced) or Masters of Research courses 8083, 8084 or 8085.

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This unit examines the underlying legal principles that regulate the use, exploration and exploitation of space, and how International Law can and should be applied to the many different State and private commercial uses of outer space. It examines the existing international legal regime - the five United Nations Space Treaties and key Declarations of Principles related to space activities - as well as a number of domestic regulatory systems, including the Australian legal regime. The unit also concentrates on the (many) uses and proposed uses of space for which the legal framework may not be particularly well suited.

## 301175.2 Internet of Things

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Students should be familiar with the fundamentals of computer networking. In particular, they should have a good understanding of the TCP/IP protocol suite, and current networking and wireless technologies. Therefore, it is strongly advisable that the students must have either taken an appropriate unit in computer networking (e.g., 300695 Network Technologies), or have equivalent knowledge.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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The Internet of Things (IoT) is drastically changing the way organisations operate and how individuals interact with the world. IoT is an infrastructure consisting of fairly constantly communicating objects, or things, that may be smart and process or act on data. The IoT facilitates detailed and meaningful interactions between humans, digital devices, and many other industrial and household equipment, appliances, and things. The IoT is also the enabler of smart environments, including smart homes, buildings, cities, transport, and healthcare, among many others. This unit discusses IoT technologies and applications in detail. It also introduces the students to trends, challenges, and key research topics in relevant areas.

## 102212.3 Internship and Community Engagement

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Students must have a minimum GPA of 5.0 and must have completed 40 credit points of study. Enrolment in this unit is at the discretion of the Director of Academic Program and/ or Head of The Academy.

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From 2H 2022 this unit replaced by 800238 Citizenship and Community Engagement.The aim of this unit is to provide second/third year Academy students with an opportunity to develop professional identity through exposure to workplaces, community settings or research processes related to their chosen field of study. Students will be encouraged to identify, examine and discuss the multiplicity of leadership factors in such environments while providing work experience. This is a cross-disciplinary unit that will employ experiential learning to achieve the learning outcomes. This placement will be chosen by the student in consultation with staff of The Academy and will be undertaken either as an individual or part of a project team.

## 401077.2 Introduction to Biostatistics

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

High school mathematics (arithmetic, formulas and algebra, reading graphs)

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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Most professions in the health sciences need to read and interpret statistics relating to individual health status, interpret health risks in communities, and engage in the evaluation of interventions, or impact of health policies or programs. Many public health practitioners are actively involved in surveillance, quantitative research and/or evaluation. This unit provides students with the fundamental skills they need to analyse and interpret results from quantitative data collections. Content includes descriptive statistics, undertaking comparisons between groups, quantifying associations between variables, and statistical power. The unit is highly applied with the main focus being on interpretation and appraisal of statistical results and conducting analyses using statistical software.

## 700317.2 Introduction to Building Calculations (WSTC Prep)

**Credit Points** 10 **Level** Z

**Unit Enrolment Restrictions**

Students must be enrolled at The College in7136 - Diploma in Building Design Extended or 7165 - Diploma in Construction Technology Extended

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This unit is designed to assist students to become competent in the field of basic and introductory senior mathematics. It introduces and reinforces mathematical skills in the areas of basic arithmetic, algebra and geometry. Emphasis is placed on developing key competencies in building calculations.

## 200184.3 Introduction to Business Law

**Credit Points** 10 **Level** 1

**Corequisite**

**200336.3** Business Academic Skills

**Equivalent Units**

61511 - Introduction to Legal Principles, 700004 - Introduction to Business Law (UWSC), 700079 - Introduction to Business Law (Creative Industries)

**Unit Enrolment Restrictions**

External offerings for this unit are only available to students who are enrolled in a Property course or specialisation. Students in courses 2739 and 2753 Bachelor of Business and Commerce, and 2741 and 2754 Bachelor of Business and Commerce (Advanced Business Leadership) must complete the co-requisite unit 200336 - Business Academic Skills.

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In 2016, this unit replaced by 200909 - Enterprise Law. This is an introductory law unit designed to introduce the fundamentals of law in a commercial context. The unit introduces students to the basic principles of law and the legal system as well as examining some of the major areas of law that impact on commercial dealings. This unit examines the structure of the legal system, the way law is made and the main areas of law relevant to starting and running a business including contracts, torts and consumer protection.

## 301071.3 Introduction to Critical Thinking

**Credit Points** 10 **Level** 1

**Unit Enrolment Restrictions**

Students must have a minimum GPA of 5 and be enrolled in The Academy at Western Sydney University; i.e. students enrolled in the Bachelor of Applied Leadership and Critical Thinking or other advanced courses at the discretion of the Academy or the Dean.

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From 1H 2022 this unit replaced by 800242 Critical and Systems Thinking. This unit is designed for high-achieving students who may be enrolled in Advanced degrees or the Bachelor of Applied Leadership and Critical Thinking. This unit provides students with an opportunity to understand and develop high-level critical thinking skills; skills that are essential for success in occupations now and in the future. Students will engage with theoretical frameworks and concepts using an interdisciplinary approach, inspiring students to think and act outside the silos of their disciplines. Throughout the unit, students will consider how they think as opposed to how they think they think (biases and heuristics). They will also develop an understanding of the importance of critical thinking and ways to suppress a tendency to rationalise.

## 200052.7 Introduction to Economic Methods

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

HSC Mathematics or equivalent

**Equivalent Units**

61301 - Introduction to Economic Methods, 200032 - Statistics for Business, 300700 - Statistical Decision Making, 700041 - Statistical Decision Making (UWSC), 301123 - Management Analytics, 700007 - Statistics for Business (WSTC)

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Introduction to Economic Methods covers basic concepts in mathematics and statistics to help student understanding of subjects such as accounting, management, marketing, finance, and economics. Students taking this unit are expected to improve their numeracy and analytical skills. In particular, students will learn how to collect, analyse and interpret data using simple descriptive and inferential statistical methods including simple regression analysis. In addition, by working through applied exercises, students are expected to improve their problem solving skills and acquire a basic understanding of calculus relevant to fields such as finance.

## 700114.4 Introduction to Engineering Business Management (WSTC AssocD)

**Credit Points** 10 **Level** 1

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering

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This unit will cover aspects of modern engineering business management. This unit of study will provide students an opportunity to look at small, medium and large Engineering businesses and the role of Engineering Associates in those organisations.

## 300964.3 Introduction to Engineering Practice

**Credit Points** 10 **Level** 1

**Equivalent Units**

300461 Engineering and Industrial Design Practice, 300034 Introduction to Professional Practice, 300674 Engineering Design and Construction Practice, 700038 Engineering Design and Construction Practice, 700107 Engineering, Design and Construction Practice, 700148 Introduction to Engineering Practice and 700149 Introduction to Engineering Practice.

**Special Requirements - Essential Equipment**

Drawing software such as AutoCAD or Solid Works

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This unit encourages students to explore the professional responsibilities and challenges faced by Engineers. Students are introduced to emerging issues and approaches in the engineering profession, with particular attention given to using a systems approach to solve engineering problems. Students engage in a semester-long research and problem solving task that addresses technical, environmental and social sustainability imperatives and fosters fundamental research, communication skills. Special emphasis is placed on lifelong learning, academic literacy and professional skills including information literacy, project management, engineering drawing and teamwork which equip students for subsequent academic and professional pursuits.

## 500063.2 Introduction to Engineering Practice (UG Cert)

**Credit Points** 10 **Level** 1

**Equivalent Units**

300964 Introduction to Engineering Practice, 700149 Introduction to Engineering Practice (WSTC), 700148 Introduction to Engineering Practice (UWSC)

**Unit Enrolment Restrictions**

Students must be enrolled in 7178 Diploma of Aerotropolis Industry 4.0 (Mechatronic Skills) Or 7182 Undergraduate Certificate in Engineering

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This unit encourages students to explore the professional responsibilities and challenges faced by Engineers. Students are introduced to emerging issues and approaches in engineering profession, especially particular attention will be given to systems approach. Students engage in a term-long research and problem solving task that addresses technical, environmental and social sustainability imperatives and fosters fundamental research, communication skills. Special emphasis is placed on lifelong learning, academic literacy and professional skills including information literacy, project management, engineering drawing and teamwork which equip students for subsequent academic and professional contexts.

## 700149.4 Introduction to Engineering Practice (WSTC AssocD)

**Credit Points** 10 **Level** 1

**Equivalent Units**

300674 Engineering Design and Construction Practice, 300964 Introduction to Engineering Practice, 700038 Engineering Design and Construction Practice, 700107 Engineering Design and Construction Practice, 700148 Introduction to Engineering Practice

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering

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This unit encourages students to explore the professional responsibilities and challenges faced by Engineers. Students are introduced to emerging issues and approaches in engineering profession, especially particular attention will be given to systems approach. Students engage in a term-long research and problem solving task that addresses technical, environmental and social sustainability imperatives and fosters fundamental research, communication skills. Special emphasis is placed on lifelong learning, academic literacy and professional skills including information literacy, project management, engineering drawing and teamwork which equip students for subsequent academic and professional contexts.

## 700148.4 Introduction to Engineering Practice (WSTC)

**Credit Points** 10 **Level** 1

**Equivalent Units**

300674 Engineering Design and Construction Practice, 300964 Introduction to Engineering Practice, 700038 Engineering Design and Construction Practice, 700107 Engineering Design and Construction Practice, 700149 Introduction to Engineering Practice

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year 2 units.

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This unit encourages students to explore the professional responsibilities and challenges faced by Engineers. Students are introduced to emerging issues and approaches in engineering profession, especially particular attention will be given to systems approach. Students engage in a term-long research and problem solving task that addresses technical, environmental and social sustainability imperatives and fosters fundamental research, communication skills. Special emphasis is placed

on lifelong learning, academic literacy and professional skills including information literacy, project management, engineering drawing and teamwork which equip students for subsequent academic and professional contexts.

## 100964.3 Introduction to Film Studies

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Successful completion of 40 credit points of study in currently enrolled course.

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The unit will introduce students to the key theoretical strands of film studies and key concepts in the analysis of film. The unit will explore techniques of narrative, performance, genre, realism and spectatorship, as well as introducing methods to analyse the use of editing, cinematography and sound. A case study of a key historical film movement or genre will introduce students to the study of cinema in its cultural contexts. The unit will also address the transformations in screen cultures as a result of digital technologies and new media.

## 301030.3 Introduction to Industrial Design Methods

**Credit Points** 10 **Level** 1

**Equivalent Units**

300034 Introduction to Professional Practice; 300461 Engineering & Industrial Design Practice; 300674 Engineering, Design & Construction Practice; 700038 Engineering, Design & Construction Practice; 700107 Engineering, Design & Construction Practice

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From 2020, this unit will be replaced by 301280 - Human Centred Design Research Methods. Professional practice across many disciplines has evolved toward a co-creative model where a better understanding of stakeholders, human and environmental contexts and the integration of an interdisciplinary approach is seen to accelerate multiple solution developments and innovation. Students are introduced to design research methods and professional design practice in three discovery projects gaining strategic problem solving and critical thinking skills as a core outcome. Special emphasis is placed on lifelong learning, academic literacy and professional skills including information literacy, leveraging knowledge sets, project management, designing for sustainable systems (guided by the global United Nations Sustainable Development Goals UNSDGs) and teamwork, all of which equip students for subsequent academic and professional contexts.

## 200591.2 Introduction to International Business

**Credit Points** 10 **Level** 1

**Equivalent Units**

61128 - International Business and Asian Environment

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This unit introduces students to the nature of international business operations in the world economy. The first part focuses on the basic concepts and theories of international trade, investment, and foreign exchange which form the foundation of a firm's international business activities. The second part is devoted to the economic, cultural, political and ethical environments and their effects on a firm's international business operations. The third and last part provides an overview of how the functional areas of business i.e. Marketing, production, human resource and finance are conducted in and affected by the multifaceted environment of an internationally oriented firm.

## 300733.4 Introduction to Structural Engineering

**Credit Points** 10 **Level** 2

**Prerequisite**

**300040.2** Mechanics of Materials

**Equivalent Units**

85006 - Introduction to Structural Engineering, 700115 - Introduction to Structural Engineering (WSTC Assoc Deg)

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This unit covers the basic concepts in analysing and designing simple structural members. It consists of the fundamentals of structural analysis, concrete structures and steel structures

## 700115.4 Introduction to Structural Engineering (WSTC AssocD)

**Credit Points** 10 **Level** 2

**Prerequisite**

**700116.2** Mechanics of Materials (WSTC AssocD)

**Equivalent Units**

300733 - Introduction to Structural Engineering

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering

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This unit covers the basic concepts in analysing and designing simple structural members. It consists of the fundamentals of structural analysis, concrete structures and steel structures.Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## 300469.2 Introductory Chemistry

**Credit Points** 10 **Level** 1

**Incompatible Units**

300224 - Chemistry 1, 300554 - Principles of Chemistry, 300469 - Introductory Chemistry, CH101A - Introductory Chemistry 1.1D, 80800 - Introductory Chemistry 1

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In 2012 this unit replaced by 300808 Introductory Chemistry. This unit is an introduction to the fundamental chemistry principles and skills required for students studying courses in food, nutrition, and the environment. The emphasis is on the structure and reactivity of

substances and mixtures in different chemical environments, and exposed to different forms of electromagnetic radiation. The focus is on chemistry in aqueous environments and the atmosphere, and studied using a systems approach.

## 700204.2 Introductory Programming (WSTC Prep)

**Credit Points** 10 **Level** Z

**Assumed Knowledge**

The ability to create a mathematical expression for a given problem scenario. This would require knowledge of basic arithmetic, percentages and simple statistical measures.

**Equivalent Units**

900084 - Introductory Programming (UWSC)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College.

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The unit introduces students to computer programming as an essential tool for problem-solving and data analysis in engineering and science. The focus is on using an algorithmic approach to problem solving. Students will learn how to analyse and solve problems by designing an algorithm and implementing it in a high-level programming language. This unit includes extensive practical work and problem-solving activities. It prepares students for the first year unit, Engineering Computing, in the Bachelor programs in Engineering. Students will also be able to use their acquired programming skills to perform calculations, analyse data and create graphs for their projects and reports in other units.

## 101468.2 Islam, Media and Conflict

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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Provides students with an understanding of global, regional and local news media production and representations of Islam and Muslim societies. It discusses new, emerging and alternative forms of media discourses of conflict in the Muslim world, and analyses selected news reports as forms of case studies. Taking the notion of 'Orientalism' as its starting point, the subject/unit critically examines the extent to which the mediatisation of conflict impacts relations between Islam and the West vis-a-vis debates on Orientalism, 'Asian values' and Islamic world views.

## 300035.5 Kinematics and Kinetics of Machines

**Credit Points** 10 **Level** 2

**Prerequisite**

**200237.3** Mathematics for Engineers 1 AND **300463.2** Fundamentals of Mechanics

The 200237 pre-requisite unit does not apply for course 3771.

**Equivalent Units**

700244 Kinematics and Kinetics of Machines (WSTC AssocD)

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Kinematics is the study of the motion of objects, and Kinetics is the study of the causes of the motion. The focus for this unit is on rigid body kinematics which involves the study of a solid body with little or no deformation in planar motion, such as those in machines. The motion of key machine components and the forces they generate gives rise to design problems. Students gain an understanding of the relevance of kinematics and kinetics in the analysis and design of mechanical systems and of methods to ensure machines operate efficiently and safely.

## 700244.3 Kinematics and Kinetics of Machines (WSTC AssocD)

**Credit Points** 10 **Level** 2

**Prerequisite**

**700101.1** Mathematics for Engineers 1 (UWSC Assoc Deg) AND **700113.2** Fundamentals of Mechanics (WSTC AssocD)

**Equivalent Units**

300035 - Kinematics and Kinetics of Machines

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering

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In this unit rigid body kinematics is analysed from the freedom-and-constraints point of view and graphical approaches to velocity and acceleration analyses are covered. The unit looks at how one or more particles move in one, two or three dimensions and how forces cause these movements. It also looks at how forces and couples cause the movement of a single rigid body in two and three dimensions. The movement of multi-body mechanisms and gear trains and the geometry of gear teeth and cams are studied.Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## 102781.1 Labour and Culture

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points in currently enrolled course.

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In recent history, social, economic, political and technological forces have produced profound changes to work and working life, undermining the stability of jobs and vocational skills, and disrupting and fragmenting career structures. This unit traces 1) the history of work, from pre-industrial to post-industrial times, 2) the rise of the factory system, 'Fordism' and scientific management of production,

3) the modern idea and experience of leisure and recreation as an adjunct to wage labour, and, in post-Fordist times, of culture and creativity as a central part of work, 4) the influence of technology on skills, and the rise of the 'knowledge economy' in the digital era, 5) the role of worker organisations in securing and protecting conditions of work.

## 200863.1 Leadership and Entrepreneurship

**Credit Points** 10 **Level** 3

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This unit explores the links between leadership and entrepreneurship in the context of dynamic domestic and global environments. It develops an understanding of how to initiate a business venture, taking advantages of perceived opportunities and mobilising the required resources. To this end, different theories and perspectives on leadership and entrepreneurship are examined, and students are encouraged to apply them to real-life situations. The knowledge and skills learned in this unit will enable future leaders to revitalise organisations and create value in the process of transforming innovations into goods or services.

## 200855.3 Leadership in a Complex World

**Credit Points** 10 **Level** 1

**Incompatible Units**

200857 Leadership and Uncertainty

**Unit Enrolment Restrictions**

Students must be enrolled in The Academy at Western Sydney University; i.e. students enrolled in advanced degrees or other courses at the discretion of the Academy or the Dean.

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From 1H 2022 this unit replaced by 800239 Leadership in Complexity. This unit is designed for students from Advanced Degrees who are enrolled in The Academy. The focus here is the leadership of groups and teams in a cross-disciplinary environment and its application in various contexts. The unit encourages the examination of leadership through the lens of multiple disciplines thereby broadening perspectives of leadership and inspiring students to think and act outside the silos of their disciplines. Through the unit, students will be challenged to think about preparing for unknown futures and the nature of the skill sets necessary to prepare for and respond to change and innovations.

## 102161.2 Leading Change

**Credit Points** 10 **Level** 7

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From 2020 students should note that core units are now taught in semesters rather than half yearly sessions. This unit explores change and leadership through a range of contexts. In this unit we critically analyse cultural, structural and political dimensions of change in organisations, systems and communities. This unit is grounded in leadership models that feature collaborative and relationship enhancing approaches to enable purposeful change.

## 101259.3 Learning and Creativity

**Credit Points** 10 **Level** 2

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This unit examines the inter-related processes of learning and creativity and the application and practice of these in all aspects of life. Learning and Creativity is contextual. This context is personal, social, cultural and environmental. The unit content is critically positioned within diverse theories, with an emphasis on experiential learning and ongoing critical reflection. The unit promotes understanding of feeling and experience as much as concepts and ideas. It emphasises the tools and skills of learning, the everyday nature of creativity and enables students to develop and apply their creativity. It is designed for students interested in personal, community and cultural development, in the context of far reaching change.

## 101758.2 Learning through Indigenous Australian Community Service (Day Mode)

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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Learning through Indigenous Australian Community Service will provide students with an exciting opportunity to apply their disciplinary knowledge and skills in an Indigenous Australian cultural context. Students will negotiate and conduct an interview with an Indigenous or Non-Indigenous Service Provider working in an Indigenous context. Students will gain cross cultural awareness and insights as well as knowledge about Indigenous community affairs including cultural protocols, decision-making and leadership. This experience will provide students with a level of cultural understanding and competency that can lead to improved communication skills and effective partnering with Indigenous people, organisations and communities.

## 200978.4 Legal Analysis and Critique

**Credit Points** 10 **Level** 1

**Corequisite**

**200977.3** Fundamentals of Australian Law OR **200006.2** Introduction to Law

**Equivalent Units**

200007 - Law Foundation

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The unit exposes students to the contexts that affect how law is made, some of the institutional limitations on law and justice and the impact of globalisation on law. It introduces theories about the nature and function of law in historical, political, social, economic, cultural, ethical and international contexts. The connection between race, gender, culture and law is examined within the context of the Australian legal tradition, legal history, and the impact of the Australian

legal system on Australian First Peoples. The unit introduces students to the processes of critical evaluation of arguments, legal communication and logical and critical problem solving involving statutory interpretation and precedent.

## 102581.1 Literary Theory

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit examines a range of theoretical approaches to literature, the majority of which have proliferated since the beginning of the 20th century. These may include: structuralism, poststructuralism, feminism, postcolonialism, psychoanalysis and posthumanism. In presenting this 'contemporary' mode of engaging with literary texts, 'Literary Theory' asks how we might theorise our approach to reading, and how individual texts allow us to theorise the literary in general.

## 301070.3 Logic, Rhetoric and Argumentation

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Students must have a minimum GPA of 5 and be enrolled in The Academy at Western Sydney University; i.e. students enrolled in the Bachelor of Applied Leadership and Critical Thinking or other advanced courses at the discretion of the Academy or the Dean.

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From 2H 2022 this unit replaced by 800241 - Logic, Argumentation and Post-Truth. This unit is designed for high-achieving students who may be enrolled in Advanced degrees or the Bachelor of Applied Leadership and Critical Thinking. This unit provides students with a detailed understanding of logical and rhetorical arguments in order to prepare them for leadership roles in the future. Throughout the unit, students will appraise the structure of logical and rhetorical arguments, evaluate classical arguments and critiques and assess the structure, validity and soundness of philosophical arguments.

## 200926.1 Macroeconomic Measures and Models

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Knowledge acquired in introductory microeconomics, macroeconomics and accounting.

**Equivalent Units**

200546 - Macroeconomic Issues

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The unit equips students with formal tools to analyse macroeconomic problems. Students learn to use macroeconomic terms and measures competently in discussion, and interpret data from the income, product, external and government accounts, and labour force surveys. Through hands-on experience constructing and applying price indices, deflators and productivity measures, they acquire practical skills and a sound conceptual understanding of economic variables and the accounting framework. Students come to appreciate the power of macroeconomic models, learning how to capture myriad mechanisms and feedbacks in a single framework, for example to define and quantify multipliers and crowding-out effects. Finally, students gain an understanding of fundamental external constraints, such as international parity and balance of payments equilibrium conditions.

## 401075.2 Major Incident Management

**Credit Points** 10 **Level** 3

**Prerequisite**

**401069.1** Paramedic Practice 4

**Unit Enrolment Restrictions**

Students must be enrolled in 4669 Bachelor of Health Science (Paramedicine).

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This unit examines the tactical and strategic issues facing a health response team in a major incident. Students will practice team responses to critical incidents and evaluate the effectiveness of different approaches to response and recovery.

## 300459.4 Major Project Commencement

**Credit Points** 20 **Level** 4

**Assumed Knowledge**

Knowledge related to the successful completion of year 3 Industrial Design or equivalent (e.g. Design & Technology) is assumed. Students undertaking this unit should be able to complete tasks using word processing programs and should have an understanding of basic research methods and the use of library databases. There is an expectation that students have skills in academic writing, report-writing, research, referencing and citations standards. Students should have a sound understanding of project management and record-keeping, including the use of process diaries and minutes to ensure they are able to manage their projects effectively.

**Prerequisite**

**301084.1** Design Studio 6: Ambience, Place and Behaviour AND **301090.1** Contextual Inquiry

**Unit Enrolment Restrictions**

Successful completion of 200 credit points. Essential equipment: Drawing, rendering equipment, visual process diary, model-making resources.

**Special Requirements - Essential Equipment**

Drawing, rendering equipment, visual process diary, model-making resources.

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From 2020, this unit will be replaced by 301297 - Industrial Design Major Project (Ideation). This unit prepares students to be flexible and innovative, with the emphasis placed on design, and its place in and effect on society and people. Students are challenged to respond to a real world design brief focusing on a specific user group and context-of-use. Students undertake desk and practical research in order to find design opportunities for detailed development.

Peer learning is an important part of the learning experience, as is a user-centred design research approach.

## 300460.5 Major Project Completion

**Credit Points** 30 **Level** 4

**Assumed Knowledge**

Knowledge related to the successful completion of Year 3 Industrial Design is assumed and successful completion of Major Project Commencement.

**Prerequisite**

**300459.2** Major Project Commencement

**Unit Enrolment Restrictions**

Students must hav completed Industrial Design/ Engineering Workshop Safety Training.

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Major Project Completion is the project realisation component of the student's final year program. The unit offers the student the chance to consolidate the range of methodologies and processes developed and evaluated in Major Project Commencement, that contextualise the principles and practices that will lead to the realisation of their identified design solution. The final design outcome will form part of the final year graduate exhibition. The design solution which students will be developing and submitting for this unit responds to the design brief developed in Major Project Commencement.

## 300536.6 Major Project in Construction

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

This is a research unit designed to be taken during the final year of the Bachelor of Construction Management standard program. Students should have a comprehensive knowledge of problem solving research in the construction industry.

**Prerequisite**

Successful completion of 200 credit points for students in 2607 Bachelor of Construction Management and 3697 Bachelor of Construction Management Studies (exit only) Successful completion of 130 credit points for students enrolled in Bachelor of Construction Management Studies/ Bachelor of Laws

**Equivalent Units**

BG402A - Major Project 1

**Unit Enrolment Restrictions**

Successful completion of 200 credit points.

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This unit will enhance the ability of students to investigate a selected topic with a construction industry focus and involves preparation of a literature review. Content includes mechanics of a literature review, use of research (or strategic planning) in the construction industry, development of high-value competencies in terms of marketing, organisational structure and project management.

## 301123.2 Management Analytics

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

HSC maths (2 unit desirable) or equivalent.

**Equivalent Units**

200032 Statistics for Business, 200052 Introduction to Economic Methods, 300700 Statistical Decision Making, 200263 Biometry, 200192 Statistics for Science, 700007 Statistics for Business (WSTC), 700041 Statistical Decision Making (WSTC)

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Management Analytics provides students with introductory knowledge and skills in identifying, analysing and interpreting data relevant to Business, Human Resources and Management. In order to develop evidence-based decision-making skills, students will learn how to work with data. Students will organise and summarise data, present data visually and design surveys for new data collection and use. Students will develop skills in understanding decision-making models and forecasting as a means of improving business processes and HR, management and business metrics.

## 200571.4 Management Dynamics

**Credit Points** 10 **Level** 1

**Equivalent Units**

700080 - Management Dynamics, 700003 - Management Dynamics (UWSC), 200912 - Enterprise Leadership

**Incompatible Units**

MG102A - Management Foundations, 200879 - Introduction to Business Studies

**Unit Enrolment Restrictions**

External offerings for this unit are only available to students who are enrolled in a Property course or specialisation.

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In 2016, this unit is replaced by 200912 - Enterprise Leadership. The unit provides an opportunity for students to engage with the fundamental issues and theories of management as well as understand that management itself is dynamic and evolving. Students will be introduced to how work and management systems are organised and managed, and how these impact upon individuals, other organisations or society as a whole. The unit covers both the theory and the practice of management and employment relations and is an essential unit for business students in order that they achieve a broad initial understanding of management and employment relations.

## MG102A.4 Management Foundations

**Credit Points** 10 **Level** 1

**Incompatible Units**

200571 - Management Dynamics

**Unit Enrolment Restrictions**

Students must be enrolled in the degrees offered by the Schools of: Computing, Engineering and Mathematics;

Social Sciences and Psychology; Humanities and Communication Arts; and Education.

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'Management Foundations' provides an opportunity for students to understand the linkage between organisational processes and managerial practices. The aim of the unit is to identify the dynamic nature of managerial practice in changing social, economic, technological and global environments. The unit investigates management theory, roles, and managerial skills and addresses the ongoing needs of decision making, quality management and worksite safety management. This unit is offered specifically to the School of Computing, Engineering and Mathematics and the School of Social Sciences and Psychology.

## 300633.1 Management of Aquatic Environments

**Credit Points** 10 **Level** 1

**Equivalent Units**

EY104A - Management of Aquatic Environments

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In 2012 this unit is replaced by 300824 - Management of Aquatic Environments. This unit uses the setting of surface freshwater aquatic environments to develop an understanding of a range of professional skills and values necessary for the theory and practice of environmental management. Working in small groups students investigate the philosophy and practice of science through the design and implementation of field studies that investigate the nature of pollution, evaluate the current condition of aquatic systems and recommend strategies that will improve ecosystem integrity and mitigate the risk of adverse human health outcomes.

## 700307.1 Management Practices for Engineer Associates (WSTC AssocD)

**Credit Points** 10 **Level** 2

**Equivalent Units**

700109 Engineering Management for Engineer Associates (WSTC AssocD) 700118 Professional Practice for Engineer Associates (WSTC AssocD)

**Unit Enrolment Restrictions**

Students must be enrolled at The College in 7022 Associate Degree in Engineering

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This unit will enable students to support the achievement of organisational goals. The unit's major focus is project management, culminating in a practical project which gives students the opportunity to work as part of a team to apply key project management skills and knowledge. It also introduces some of the management practices engineers need to understand and master in order to work effectively in the field. This includes effective communication, especially when working in a team, work health and safety, and an ability to plan, develop and build a career as an Engineer Associate.

## 200376.4 Managing and Developing Careers

**Credit Points** 10 **Level** 2

**Equivalent Units**

200914 - Working in Professions, 200915 - The Service Enterprise

**Unit Enrolment Restrictions**

Successful completion of 60 credit points .

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Managing and Developing Careers focuses on employability and career progression. The unit is one of four units in the Management professional core in the Bachelor of Business but is open to all students with an interest in reflecting on career progression in leadership and management-related careers. The unit will utilise portfolio development, case studies, occupational and industry research to assist participants identify and reflect on strategies to facilitate achievement and employability. Successful completion of the unit will result in students creating an ongoing portfolio directed to future employability.

## 200864.2 Managing in the Global Environment

**Credit Points** 10 **Level** 2

**Equivalent Units**

200586 Cross Cultural Management, 700094 Cross Cultural Management, MG206A Cross Cultural Management

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This unit introduces students to the complexities of managing in the changing economic, political, legal, technological and socio cultural factors that influence management practice. By addressing issues of cultural awareness, this unit provides an organisational behaviour approach to managing in a dynamic global environment. Management practice and theoretical knowledge are linked in this unit through experiential based learning and assessment activities such as critical analysis of contemporary media, research and case studies.

## 200865.2 Managing Operations

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Students are expected to have gained an introductory level of knowledge in operations and supply chain management.

**Equivalent Units**

200588 Global Operations and Logistics Management

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Managing Operations is a comprehensive unit that focuses on the importance of operations in creating competitiveness and dynamic capabilities for individual organisations and organisations connected through supply chains and logistics processes within a global context. The unit is designed for students interested in enhancing their knowledge and skills in designing and improving critical operational processes used by organisations to provide products and services to customers. It encompasses

internal and external operations for manufacturing and service organisations; their strategic choices; and tactical and operational decision-making processes for the management of critical and extended resources. The latest qualitative and quantitative tools and techniques, online business simulations and international case studies are used to practise problem solving processes to address challenges of a global nature in the business world.

## 200300.2 Managing People at Work

**Credit Points** 10 **Level** 1

**Equivalent Units**

200151 - Management of Employment Relations, 61428 - Introductory Employment Relations,700030 - Managing People at Work (UWSC), 700091 - Managing People at Work (Creative Industries)

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'Managing People at Work' provides an introductory framework for the study of employment relations. The unit is approached from a stakeholder perspective, emphasising the way that management, labour and the State, along with other key stakeholders, act, both separately and together, to structure the employment relationship. In doing so, the unit integrates industrial relations and human resource management theory and practice, illustrating the links between the two disciplines. The content of the unit is structured so as to provide an initial introduction to the disciplines of industrial relations, human resource management, and employment relations, and to the key stakeholders in the employment relationship. Building on this framework, a theoretical and empirical analysis of employment relations processes is provided, with particular emphasis given to recent changes in the role and perspectives of stakeholders.

## 200273.5 Managing Service and Experience

**Credit Points** 10 **Level** 3

**Equivalent Units**

200564 - Introduction to Sport Management, 400319 - Sport Management 1

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As service provision becomes increasingly important across a number of industries, some firms are moving beyond the idea of providing a service to providing a total customer experience. Managing Service and Experience introduces students to the exciting concepts of management in the service and experience economy. The unit examines the development of the experience economy and the specialist skills required to manage commercial organisations in the emerging experience economy. Key areas which are covered include: the experience economy, the characteristics of service, service development, service evaluation and service improvement.

## 200709.2 Managing the Accommodation Experience

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

A basic understanding of the core concepts of hospitality.

**Equivalent Units**

200144 - Lodging Management

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This unit will be replaced by 200993 The Accomodation Industry from 2018. The accommodation sector is an integral part of the hospitality experience. It requires the combination of intangible service and experience with the tangibility of a product which is used by guests. The need to stay competitive in this growing and competitive market creates a need for organisations to look beyond the historical components such as affordability, suitability and luxury. This unit gives students the opportunity to develop an understanding of these accommodation issues as they relate to hospitality organisations.

## 200710.4 Managing the Food and Beverage Experience

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

A basic understanding of the core concepts of hospitality.

**Equivalent Units**

200145 - Food Service Systems

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This unit will be replaced by 200992 Food and Beverage Management from 2018. The provision of food and beverage is a key component of the hospitality industry. Future managers and decision-makers need a thorough knowledge of the nature and characteristics of modern food and beverage service to gain competitive advantage. This unit draws upon traditional gastronomy to examine the role of food and beverage in society. A systems approach to food and beverage service management is utilised to understand the delivery of a food and beverage experience.

## 201086.1 Marketing and Digital Communications

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Students should have foundation knowledge in marketing principles and customer experience

**Prerequisite**

**200083.2** Marketing Principles

**Equivalent Units**

200086 - Marketing Communications

**Special Requirements - Essential Equipment**

A computer and internet access

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The evolving role of digital technologies and digital media has changed how marketers effectively manage a communication campaign in the digital age. This unit offers insights into marketing communication strategies that can effectively reach tech savvy audiences. The principles taught in this unit will provide a strong understanding of the communication process and help utilise the marketing communications mix (advertising, sales promotions, personal selling, sponsorship marketing, public relations,

and direct marketing) more effectively. Students completing this unit will be able to build and manage marketing and digital communication campaigns.

## 200086.3 Marketing Communications

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Basic principles of marketing

**Prerequisite**

**200083.2** Marketing Principles

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Developing and managing an effective integrated marketing communications (IMC) program is a vital part of successful marketing. Moreover, IMC is a highly visible and demanding aspect of marketing communication effort at brand level. This unit, grounded in marketing principles, provides students with an understanding of IMC, the marketing communication process, and coordinating major elements of the marketing communications mix – advertising, digital marketing, sales promotions, personal selling, sponsorship marketing, public relations, direct marketing.

## 200096.3 Marketing Planning Project

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

An understanding of marketing concepts including the elements of consumer behaviour, marketing research methods, marketing communications, channel management and distribution, brand and product management, competitive strategy and quantitative methods in marketing. The basics of economics, finance and accounting, mathematics and statistics and general communications are also assumed.

**Prerequisite**

**200083.2** Marketing Principles

**Equivalent Units**

61734 - Marketing Project, MK311A - Marketing Planning Project

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Marketing planning project (MPP) assimilates and builds on the wide range of marketing units that students have previously completed. MPP assimilates students' specialist knowledge developed in other units through the use of a 'real-life' case context in which students demonstrate their mastery of marketing in the development and presentation of a professional marketing plan.

## 200083.3 Marketing Principles

**Credit Points** 10 **Level** 1

**Equivalent Units**

700001 - Marketing Principles (UWSC), 700089 - Marketing Principles (Creative Industries)

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Marketing Principles is an introductory marketing course that delivers an overview of the marketing process and how it works within the field of business. This unit examines how organisations use marketing decisions to satisfy customer needs and deliver value, with a focus on the impact of digital technology. Areas of study include market segmentation and positioning; product decisions and branding; customer decision processes, omnichannel marketing; digital marketing communications; pricing strategies; and customer insights The unit provides a foundation for those students in the marketing major; however, it also provides a broad overview for those who seek a general understanding of marketing practice and theory.

## 200592.2 Marketing Research

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Basic principles of marketing, consumer behaviour and statistics.

**Prerequisite**

**200032.5** Statistics for Business AND **200083.2** Marketing Principles

**Equivalent Units**

200085 - Fundamentals of Marketing Research

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Marketing Research provides a comprehensive appreciation of the methods, uses and limitations of contemporary marketing research. The emphasis is on a conceptual understanding of research method. Students gain exposure to concepts such as research design, information collection, data processing and analysis, and results communication involving qualitative and quantitative techniques.

## 200472.5 Material Science in Construction

**Credit Points** 10 **Level** 2

**Incompatible Units**

300965 - Materials Engineering

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This unit deals with the behaviour of building materials and products in the construction context, including concrete, timber, metal, composites and polymers. An introduction will be given first on how material behaviour and properties are affected by micro-structure, composition and environment. Materials will be discussed in detail according to their physical properties and how they degrade in context. We will also discuss how the materials are manufactured and used and what their environmental impacts are.

## 301106.2 Mathematical Investigations

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Undergraduate level of knowledge in mathematics or statistics

**Unit Enrolment Restrictions**

Students must be enrolled in 8086 Master of Research.

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Mathematical Investigations will prepare Master of Research for students planning a future in mathematical/ statistical research. Students will carry out investigations under the supervision of an academic staff member that will allow development of skills, knowledge and a way of thinking that will assist in the learning of mathematics/ statistics that will prepare them for research in their chosen field of mathematics. They will also develop their written and oral communication skills, culminating in a poster presentation of significant findings as if being submitted at a mathematics/statistics conference, following that conference's directions for submission.

## 301177.2 Mathematical Proof and Reasoning

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Undergraduate level of knowledge in mathematics or statistics

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Proving and getting a new proposition by careful reasoning from given propositions, is the essence of mathematics. Proof is what makes mathematics special and eternal. This unit looks at the different methods of proof and reasoning that can be employed to verify that statements are true or not. Students will consider propositions and theorems from various areas of mathematics and look at classic, interesting and sometimes novel ways these can be proved. Successful students taking this unit will not only be able to follow and determine if a proof is correct, but become proficient at mathematical reasoning.

## 700284.1 Mathematics 1 (WSTC Prep)

**Credit Points** 10 **Level** Z

**Assumed Knowledge**

Mathematics Year 10 equivalent

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College.

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This unit has been designed to enhance students' numeracy skills and their understanding of basic mathematical concepts taught in high school mathematics. The topics include arithmetic and algebra, elementary functions, and basic geometry and trigonometry. The unit will prepare students and help them follow more advanced topics in Mathematics 2, Mathematics for Engineers Preliminary and Mathematics for Engineers 1, as well as various other Engineering and ICT units.

## 700146.4 Mathematics 2 (WSTC Prep)

**Credit Points** 10 **Level** Z

**Assumed Knowledge**

Mathematics year 10 equivalent.

**Prerequisite**

Students enrolled in 7162 Diploma in Engineering Extended, 7138 Diploma in Information and Communication Technology Extended - ICT, 7139 Diploma in Information and Communication Technology Extended, 7140 Diploma in Information and Communication Technology Extended – Information Systems and 7141 Diploma in Information and Communication Technology (Health Information Management) Extended must pass 700284 Mathematics 1 prior ro enrolling in this unit.

**Equivalent Units**

900086 - Mathematics 2 (UWSC)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College.

**Special Requirements - Essential Equipment**

Students must have a non-programmable scientific calculator.

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This unit has been specifically designed for students who need to refresh or upgrade their understanding of basic mathematical concepts taught in high school mathematics. The topics include basic arithmetic and algebra, elementary functions, geometry, trigonometry and coordinate geometry.

## 200237.5 Mathematics for Engineers 1

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

HSC Mathematics achieved at Band 5 or 6. This is the minimum requirement.

**Prerequisite**

Students enrolled in 3740 Bachelor of Engineering (Honours) or 3689 Bachelor of Engineering must have passed 300743 Mathematics for Engineers Preliminary otherwise permission is required.

**Equivalent Units**

14505 Engineering Mathematics 1; 200195 Mathematical Methods A; 200196 Mathematical Methods B; 700019 Mathematics for Engineers 1 (WSTC); 700101 Mathematics for Engineers 1 (WSTC Assoc Deg)

**Incompatible Units**

200031 Mathematics for Business; 200189 Concepts of Mathematics; 300672 Mathematics 1A; 300673 Mathematics 1B

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This unit is the first of two mathematics units to be completed by all students enrolled in an engineering degree during their first year of study. The content covers a number of topics that underpin the later-stage engineering mathematics units. The subject matter includes: differential and integral calculus of a single variable, complex numbers, aspects of matrix algebra, vectors, and some elementary statistics and probability theory. The aim of this unit is to introduce a number of key mathematical concepts needed in the study of Engineering, and to provide a solid foundation for the follow-on unit Mathematics for Engineers 2.

## 700101.4 Mathematics for Engineers 1 (WSTC AssocD)

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

HSC Maths achieved at Band 5 or 6. This is the minimum requirement.

**Prerequisite**

**700103.1** Mathematics for Engineers Preliminary (UWSC Assoc Deg)

**Equivalent Units**

200237 - Mathematics for Engineers 1, 700019 - Mathematics for Engineers 1 (WSTC)

**Incompatible Units**

300672 - Mathematics 1A, 300673 - Mathematics 1B, 200191 - Fundamentals of Mathematics, 300743 - Mathematics for Engineers Preliminary

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering

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The content of this unit covers a number of topics in mathematics essential to the study of engineering. The subject matter includes: matrix algebra, complex numbers, vectors, functions and inverse functions, differential and integral calculus of a single variable and some elementary statistics and probability theory.

## 700019.8 Mathematics for Engineers 1 (WSTC)

**Credit Points** 10 **Level** 1

**Prerequisite**

**700100.3** Mathematics for Engineers Preliminary (WSTC)

Students must pass 700100 Mathematics for Engineers Preliminary before enrolling in this unit. Note: this pre-requisite does not apply to students in courses 7006 Diploma in Engineering or 7010 Diploma in Engineering Fast Track.

**Equivalent Units**

200237 - Mathematics For Engineers 1, 700101 - Mathematics for Engineers 1 (WSTC Assoc Deg)

**Incompatible Units**

300672 - Mathematics 1A, 300673 - Mathematics 1B, 200191 - Fundamentals of Mathematics

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College unless specific permission has been granted by the School of Computing, Engineering and Mathematics. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year 2 units.

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The content of this unit covers a number of topics that underpin the later-stage engineering mathematics units. The subject matter includes: differential and integral calculus of a single variable, complex numbers, aspects of matrix algebra, vectors and some elementary statistics and probability theory.

## 200238.3 Mathematics for Engineers 2

**Credit Points** 10 **Level** 1

**Prerequisite**

**200237.3** Mathematics for Engineers 1

**Equivalent Units**

700022 Mathematics for Engineers 2 (WSTC); 700102 Mathematics for Engineers 2 (WSTC Assoc Deg)

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This unit is the second of two mathematics units to be completed by students enrolled in an Engineering degree during their first year of study. The content covers a number of topics that build on the calculus knowledge from Mathematics for Engineers 1. The subject matter includes: ordinary differential equations, Laplace transforms and multi-variable calculus.

## 700102.4 Mathematics for Engineers 2 (WSTC AssocD)

**Credit Points** 10 **Level** 1

**Prerequisite**

**700101.1** Mathematics for Engineers 1 (UWSC Assoc Deg)

**Equivalent Units**

200238 - Mathematics for Engineers 2, 700022 - Mathematics for Engineers 2 (WSTC)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering

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The content of this unit covers a number of topics that build on the student's calculus knowledge from Mathematics for Engineers 1. The subject matter includes: ordinary differential equations, Laplace transforms and multi-variable calculus.Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## 200242.4 Mathematics for Engineers 3

**Credit Points** 10 **Level** 2

**Prerequisite**

**14506.1** Engineering Mathematics 2 OR **200238.2** Mathematics for Engineers 2

**Equivalent Units**

200194 - Engineering Mathematics 3

**Unit Enrolment Restrictions**

This unit is designed to meet the requirements of students enrolled in an engineering degree. There are other mathematics units more suitable for students from other disciplines.

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Students enrolled in Bachelor of Engineering who are yet to successfully complete 200242 Mathematics for Engineers 3, are to seek advice from Dr Jamal Rizk to enable them to complete the course. This unit is a core unit in the Computer, Electrical, or Telecommunications key programmes of the Bachelor of Engineering course. It builds on the first two mathematics units in that course and provides mathematical tools and techniques needed for the above key programmes. The unit covers topics from advanced calculus including vector calculus, complex analysis, Fourier series, heat and wave equations, Fourier integrals and transforms; discrete mathematics including logic and set theory; random variables and random processes including mean, correlation and covariance functions, ergodicity, ensemble averages, and Gaussian processes.

## 300743.4 Mathematics for Engineers Preliminary

**Credit Points** 10 **Level** 1

**Equivalent Units**

700100 - Mathematics for Engineers Preliminary (WSTC), 700103 - Mathematics for Engineers Preliminary (WSTC Assoc Deg)

**Incompatible Units**

200195 - Mathematical Methods A, 200191 - Fundamentals of Mathematics, 200237 - Mathematics for Engineers 1, 700019 - Mathematics for Engineers 1 (WSTC)

**Unit Enrolment Restrictions**

All students entering the Bachelor of Engineering (Honours) and Bachelor of Engineering Science will be enrolled in this unit. Students from the Bachelor of Engineering (Honours) course who have sufficient background knowledge in mathematics may attempt a readiness test to allow them to move directly to Mathematics for Engineers 1 if they pass this test.

**Special Requirements - Essential Equipment**

Scientific calculator

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This unit is specifically designed for students enrolling in the Bachelor of Engineering (Honours) and Bachelor of Engineering Science degree courses, who do not have a mathematical background in differential and integral calculus. The content of the unit consists of topics in arithmetic and algebra, trigonometry and trigonometric functions, logarithmic and exponential functions, differential and integral calculus.

## 500065.1 Mathematics for Engineers Preliminary (UG Cert)

**Credit Points** 10 **Level** 1

**Equivalent Units**

300743 Mathematics for Engineers Preliminary, 700100 Mathematics for Engineers Preliminary (WSTC), 700103 Mathematics for Engineers Preliminary (WSTC AssocD)

**Incompatible Units**

200195 Mathematical Methods A, 200191 Fundamentals of Mathematics, 200237 Mathematics for Engineers 1, 700019 Mathematics for Engineers 1 (WSTC)

**Unit Enrolment Restrictions**

Students must be enrolled in course :- 7178 Diploma of Aerotropolis Industry 4.0 (Mechatronic Skills) or 7182 Undergraduate Certificate in Engineering

**Special Requirements - Essential Equipment**

College approved Calculator.

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This unit covers the fundamental mathematical concepts and techniques necessary for the study of Engineering. Topics include Arithmetic and Algebra, Trigonometry, Functions, and Introductory Differential and Integral calculus.

## 700103.4 Mathematics for Engineers Preliminary (WSTC AssocD)

**Credit Points** 10 **Level** 1

**Equivalent Units**

300743 - Mathematics for Engineers Preliminary; 700100 - Mathematics for Engineers Preliminary (WSTC)

**Incompatible Units**

200191 - Fundamentals of Mathematics

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering.

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This unit covers the fundamental mathematical concepts and techniques necessary for the study of Engineering. Topics include Arithmetic and Algebra, Trigonometry, Functions, and Introductory Differential and Integral calculus.

## 700100.6 Mathematics for Engineers Preliminary (WSTC)

**Credit Points** 10 **Level** 1

**Prerequisite**

Students enrolled in 6033 Diploma in Engineering/Bachelor of Engineering Studies, 7034 Diploma in Engineering or 7162 Diploma in Engineering Extended must pass 700146 Mathematics 2 (WSTC Prep) before enrolling in this unit. Students enrolled in 7066 Diploma in Engineering Extended must pass 700203 Mathematics 3 (WSTC Prep) before enrolling in this unit.

**Equivalent Units**

300743 - Mathematics for Engineers Preliminary, 700103 - Mathematics for Engineers Preliminary (WSTC Assoc Deg)

**Incompatible Units**

200191 - Fundamentals of Mathematics

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year 2 units.

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This unit covers the fundamental mathematical concepts and techniques necessary for the study of Engineering. Topics include Arithmetic and Algebra, Trigonometry, Functions, and Introductory Differential and Integral calculus.

## 301077.2 Mathematics for Industrial Design

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

Students should have assumed knowledge of any two units of English plus at least two units of Business Studies, Visual Arts, Physics or HSC Mathematics.

**Equivalent Units**

200191 - Fundamentals of Mathematics

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From Spring 2020, this unit will be replaced by 301285 - Drawing Skills for Design Thinking. This unit builds confidence and fluency in applying mathematical skills in the context of design work. Students will practice measuring and calculating the areas and volumes of manufactured objects and proposed designs. They will use trigonometry to develop 2D and 3D scale drawings and will use statistics to inform designs, for example when using ergonomic data. They will explore the geometry of curves and will be introduced to the use of mathematical symmetries, sequences and patterns as design tools. Basic matrix operations and linear algebra are a foundation for design work involving software algorithms.

## 300764.3 Mechanical Design

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

This subject assumes that the student has undertaken first and second year studies in Western Sydney University engineering courses or equivalent.

**Prerequisite**

**300040.1** Mechanics of Materials AND **300035.2** Kinematics and Kinetics of Machines

**Equivalent Units**

300478 - Design of Servo-Systems

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This unit introduces students to the design of machine components. The unit covers the design of components to ensure their functionality, strength and durability. Components designed include drive components,gears, shafts,belt drives, and bearings and structural components, welds and treaded fasteners.

## 301018.3 Mechanical System Design

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

The students are assumed to have a good understanding on basics of mechanical design, fundamentals and advanced topics in mechanics of materials, fundamentals on fluid mechanics and heat transfer and thermal dynamics.

**Unit Enrolment Restrictions**

Students must be enrolled in the Master of Engineering, Graduate Certificate in Engineering or Bachelor of Research Studies / Master of Research.

**Special Requirements - Essential Equipment**

Engineering analysis package - SolidWorks available in SCEM Computer Labs

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This unit advances students understanding on product design and development of machine components and assemblies using systems engineering approaches. The unit covers a review on the design of main components of machinery to ensure their functionality, strength and durability, which includes drive components - gears, shafts, belt drives, and bearings, and structural components - welds and treaded fasteners. The machine assembly design is delivered based on systems engineering. Academic skills on research and communication are ensured to be achieved through conducting systems engineering approached-based mechanical system design projects.

## 300040.4 Mechanics of Materials

**Credit Points** 10 **Level** 2

**Prerequisite**

**300463.2** Fundamentals of Mechanics

**Equivalent Units**

300039 Mechanics and Materials; 700116 Mechanics of Materials (WSTC Assoc Deg)

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Mechanics of Materials is the study of the stresses and deformation of a body made of any elastic solid material, and how these are related to the body's shape and the load applied to it. This unit looks at how and why structural components including bars and beams deform and break. It concentrates on how these are affected by the geometry of the body and loading. Types of loadings considered include normal loads, torsional loads and bending loads. The main objective of the unit is to introduce students to the aspects of stress, strain and internal force development in the components and the methods to determine the deformation and deflections of the components. Energy methods and impact loadings are also considered.

## 700116.4 Mechanics of Materials (WSTC AssocD)

**Credit Points** 10 **Level** 2

**Prerequisite**

**700113.2** Fundamentals of Mechanics (WSTC AssocD)

**Equivalent Units**

300040 - Mechanics of Materials

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering.

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Mechanics of Materials is the study of the stresses and deformation of a body made of any elastic solid material and how these are related to the body's shape and the load applied to it. This unit looks at how and why structural components including bars and beams deform and break. It concentrates on how these are affected by the geometry of the body and loading. Types of loadings considered include normal loads, torsional loads and bending loads. The main objective of the unit is to introduce students to the aspects of stress, strain and internal force development in the components and the methods to determine the deformation and deflections of the components. Energy methods and impact loadings are also considered.Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## 300487.5 Mechatronic Design

**Credit Points** 10 **Level** 3

**Prerequisite**

**300040.2** Mechanics of Materials

**Equivalent Units**

300041 - Mechatronic Design 1, 300042 - Mechatronic Design 2

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Through practical lab exercises and a design project, students will integrate basic skills of mechanics, mechanical systems, and automation in the practice of engineering design (Design for X and system engineering) as applied to mechatronic devices and systems. Students will perform detailed design analysis on important machine elements such as bearings, brakes, clutches, shaft, motor and to integrate those elements to form an automatic mechatronic system is the intended outcome of undertaking this unit. The project-based tasks incorporated into this program build team work experience as well as each student's individual capabilities.

## 300600.5 Mechatronic System Design

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Equivalent Bachelor of Engineering degree.

**Incompatible Units**

300512 - Servo Systems Design (PG), 300191 - Mechatronic System Design

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

**Special Requirements - Essential Equipment**

vUWS site SCEM Computer Lab SolidWorks MS Office Suite ANSYS MDSIGN

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This unit will advance the skills of mechanics, mechanical systems and automation in the practice of engineering design as applied to mechatronic devices and systems. The ability to perform detailed design analysis of machine elements as well as control systems as applicable to manufacturing and process machinery is the intended outcome of undertaking this unit and project-based tasks will form part of the learning process and team work experience.

## 301401.1 Mentored Practice in Design Innovation

**Credit Points** 10 **Level** 3

**Equivalent Units**

10915 Industrial Experience, 300775 Industrial Experience

**Unit Enrolment Restrictions**

Students must be enrolled in Bachelor of Design and Technology, Bachelor of Industrial Design or Bachelor of Industrial Design (Honours) and have successfully completed 160 credit points.

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Mentored Practice offers a program of professionally oriented activities that refine planning for graduate destinations in the design, innovation and manufacturing industries and in particular new product development. Students will focus on career and practical industry attributes, and attend design industry seminars that directly influence their major project, honours thesis, or industrial design capstone project from a strategic and professional practice perspective. This unit assists students on preparing a strategic early career plan which includes a personal portfolio of works with tips on how to commercialise their current academic project, observations and analysis of current design industry practice, and a self-directed practical placement for up to 70 hours.

## 301296.2 Mentored Practice in Design Innovation

**Credit Points** 0 **Level** 3

**Equivalent Units**

10915 - Industrial Experience; 300775 - Industrial Experience

**Unit Enrolment Restrictions**

Students must be enrolled in Bachelor of Design and Technology, Bachelor of Industrial Design or Bachelor of Industrial Design (Honours) and have successfully completed 160 credit points.

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Students will be acculturated to professional practice and conduct in a real work environment setting through a series of webinars and self-guided industry placement. On conclusion of the unit, students will develop a report that summarises their own personal reflections relating to workplace responsibilities, and other experiences accrued throughout the unit. Mentored Practice in Design Innovation seeks to match students with mentors in areas they aspire to be prospective employees or in related fields of professional interest across a 10-week program.

## 300044.4 Microcontrollers and PLCs

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Fundamentals of electronics are required.

**Prerequisite**

**300025.2** Electronics OR **300021.1** Electrical Fundamentals OR **301336.1** Electrical and Telecommunications Engineering

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Through completion of an applied project students will develop an understanding of the hardware, architecture and the assembly language of microcontrollers in addition to the control of a mechanical system with a programmable logic controller (PLC). The unit looks at the applications of timers, interrupts and serial ports. Furthermore, the general approach in designing a microcontroller in mechanical systems will be studied. Students will use an Omron PLC to control a factory represented by four pneumatic cylinders. After covering the Ladder Logic programming language, they will move on to cover sequential programming and numerical manipulation using PLCs.

## 300076.5 Microprocessor Systems

**Credit Points** 10 **Level** 2

**Prerequisite**

**300018.2** Digital Systems 1

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This unit introduces students to the internal structure of microprocessors used in computing systems and their fundamental operations. Topics include assembly language programming, interrupt processing, CPU functions, memory organization, and peripheral programming. The microprocessor and embedded processors are discussed. Students write assembly language programs, debug and create executable files to control microprocessor systems.

## 300043.6 Mobile Robotics

**Credit Points** 10 **Level** 4

**Prerequisite**

**300463.2** Fundamentals of Mechanics

**Unit Enrolment Restrictions**

Successful completion of 160 credit points

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To develop an understanding of the basic concepts involved in Mobile Robotics. The areas of mobile robot mechanics, localisation, map building and path planning of mobile robots will be introduced. Various sensors and their applications in mobile robotics are also to be introduced.

## 301158.3 Modern Construction Enterprises

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

An understanding of the construction industry context and familiarity with organisational structures common in construction businesses.

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In this unit the pace of change in the construction industry will be addressed. Particular emphasis is placed on the ways in which construction businesses need to adapt their practices to deal with increased digitisation, industrialisation and globalisation. The impact of disruptive innovation on ‘back of house’ operations in construction enterprises will be studied and trends identified.

## 301159.3 Modern Construction Projects

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

An understanding of standard building processes and familiarity with how they impact on project delivery.

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In this unit, accelerating changes in the way construction projects are procured and delivered will be studied. Innovations relating to pre-site construction and to productivity measurement will be evaluated. Quality assurance and risk management will be considered in the light of new project delivery systems. Ways to improve end user satisfaction with construction project delivery will be addressed.

## 102273.3 Motion Design

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Students are expected to have computer literacy including working in a networked environment on a Macintosh computer; management, transportation and storage of digital information and digital production processes such as scanning, pdf production and file storage.Literacy with image manipulation software - Photoshop and Illustrator is required.

**Prerequisite**

**101922.1** Web and Time-based Design OR **102317.1** Visual Effects OR **102828.1** Animation and Visual Effects OR **300582.3** Technologies for Web Applications

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This unit introduces students to the fundamentals of motion design practice. Students will discover how elements of static graphic design can be incorporated with sequence, time, space and sound to enhance the exchange of information and meaning in a variety of project contexts and kinetic media outcomes. Additionally, students will

discover the purpose and function of motion design and be able to identify professional pathways associated with these skills and knowledge. Students will be exposed to a range of motion design preproduction and production methods, from fundamentals and guidelines to experimental and expressive approaches. Students will learn the importance of planning, mapping and evaluating linear narrative, in combination with the introduction of key software supported by online video courses, for successful motion design outcomes.

## 300046.2 Multimedia Signal Processing

**Credit Points** 10 **Level** 4

**Prerequisite**

**300069.3** Digital Signal Processing

**Equivalent Units**

84492 - Honours/Pass Subject 1

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This unit introduces students to the digital processing of speech and image signals. Topics include speech generation, analysis, synthesis, speech identification, image processing techniques, image compression and standards. On the completion of this unit, students will gain an understanding of the latest developments in the area of multimedia signal processing.

## 301105.3 Negotiation in the Built Environment

**Credit Points** 10 **Level** 3

**Equivalent Units**

200485 - Decision Making for Construction Professionals

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Construction and Property development is the most complex activity in the Australian economy. There are many professional groups involved in the sector. This unit will train students in the negotiation skills required to successfully complete projects from the perspective of a construction manager, building surveyor, planner, civil engineer, construction lawyer and property developer.

## 200613.3 Negotiation, Bargaining and Advocacy

**Credit Points** 10 **Level** 3

**Prerequisite**

**200300.2** Managing People at Work

**Equivalent Units**

61430 - Negotiation, Bargaining and Advocacy

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In 'Negotiation, Bargaining and Advocacy' students identify and assess contrasting approaches to negotiation and identify the importance of strategy and judgement in negotiation. Students develop their skills through a team-based online negotiation and a critique of the experience of this negotiation. Through case studies, students examine conciliation, mediation and arbitration with a particular focus on advocacy practice in industrial tribunals. An important theme in the unit is the assessment of the contextual and regulatory factors that shape negotiation, bargaining and advocacy practice. This aspect draws on contemporary debates in these spheres most notably concerning the Australian context.

## 800192.1 Neuroscience Methods

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Students should have at least background/undergraduate knowledge in one or more of the following: mathematics, biology, chemistry, physics, physiology, electronics or similar

**Equivalent Units**

800172 - Quantiative Methods in Neuroscience

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A multidisciplinary team will provide an introduction to several aspects of neuroscience including cellular, computational, behavioural and biomedical neuroscience. The program will provide a strong foundation in modern neuroscience for those wishing to pursue further independent research in the field. With a focus on real-world neuroscience research, topics include introductory biology, computational modelling, biosignal acquisition, signal processing and data mining. The unit will include lecture and laboratory work.

## 102662.1 New Genres in Research Writing

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit focuses on new, innovative, interdisciplinary genres of writing arising after the putative end of critique and with the rise of non-representational thought. These new writing practices mix genres and meld theoretical, critical and creative modes. Focusing on fictocriticism, creative nonfiction, documentary fiction and the multi-media essay, we explore the experimental ethos and affective and new materialist methodologies to which these forms lend themselves. Students will develop a body of original creative-critical work in any genre through a series of seminars and writing workshops.

## 301305.2 New Product Innovation with IoT Data

**Credit Points** 10 **Level** 2

**Equivalent Units**

300012 - Design Management 1: Product Design Audit
301093 - Design Management 1: Process and Manufacturing

.....

Design Thinking has had a considerable effect on the ways firms innovate, design and evaluate products and services for use. The evolution of smart products and services in recent years offers both challenges and rewards for organisations as the big data generated provides insights to current product and service utilisation. Interpretation and integration of these new knowledge streams can support future product development, by enhanced understanding of

human behaviour and features of sensor technologies. Students will produce an IoT influenced project design brief that provides the directional basis for the deployment of both human and technological resources in preparation for their career progression as a future innovation manager in a global, online marketplace.

## 700305.1 Non-Residential Building (WSTC)

**Credit Points** 10 **Level** 1

**Equivalent Units**

BG103A - Building 2; 700071 - Building 2 (WSTC); 300707 - Building 2; 301227 - Non-Residential Building

**Unit Enrolment Restrictions**

Students must be enrolled at The College. Students in Extended Diploma courses must pass 40 CPs of preparatory units in order to enrol in this unit. Students in Integrated Diploma courses must pass or be enrolled in the preparatory units in order to enrol in this unit.

.....

This unit provides students with an introduction to the design, classification, applicable Australian Standards, structural systems, construction techniques, materials handling systems, building services, fit-out and finishes for larger scale buildings. The unit focusses on non-residential building projects such as shopping centres, factories, warehouses, office buildings and associated facilities.

## 300488.6 Numerical Methods in Engineering

**Credit Points** 10 **Level** 3

**Prerequisite**

**200238.2** Mathematics for Engineers 2 AND **300040.2** Mechanics of Materials

For 3771 Bachelor of Engineering Advandced (Honours) - 301337 Mathematics for Engineers 2 (Advanced) and 300040 - Mechanics of Materials

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The finite element method is a powerful numerical tool for analysing a wide range of engineering problems. The objective of this unit is to introduce the basic and fundamental principles of the finite element techniques by primarily focusing on their applications in the area of structural, solid and soil mechanics.

## 201087.1 Omnichannel Marketing

**Credit Points** 10 **Level** 3

**Prerequisite**

**200083.2** Marketing Principles

**Equivalent Units**

200091 - Business to Business Marketing

**Special Requirements - Essential Equipment**

A computer and internet access

.....

Technology advances are changing customer value requirements. As a result, customers expect an efficient, insightful and tailored service which requires personalised selling processes through high performance technology and customer-centred business models. Multiple touchpoints and digitally driven processes are created to reach them in the right place at the right time. Omnichannel marketing is now central to business transactions. This unit provides students with an understanding of the dynamics and complexities in creating value across various touchpoints in the business to business space. It considers the need to develop an enterprise-wide digital strategy and align technology, organizational structure and processes to develop an omnichannel approach to provide consistent and seamless engagement with buyers.

## 300149.3 Operating Systems

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Basic structure and functioning of computer hardware.

**Prerequisite**

**300167.3** Systems Programming 1

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This unit provides an introduction to the theory and practice of the internal structure, implementation and functionality of operating systems. The unit is relevant not only for systems programmers, but also for applications developers who need to understand how operating systems control computer hardware, and how they provide convenience, efficiency and security for application development and implementation.

## 200585.4 Organisational Behaviour

**Credit Points** 10 **Level** 1

**Equivalent Units**

MG204A - Organisational Behaviour, 700031 - Organisational Behaviour (UWSC)

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Organisational Behaviour examines individual, group and organisational behaviours and the influence these have on each other. This unit is based on developing skills that can help you navigate through these processes and behaviours. The focus is on participation, to guide students to both reflect on and develop their own skills to become better managers, as well as employees.

## 200157.4 Organisational Learning and Development

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Students are expected to have understanding of business environments.

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Organisational Learning and Development is a Level 3 undergraduate unit which analyses practices and processes designed to transform and renew organisations, in order to enable them to respond effectively to change. This unit will use case studies and other experientially based activities to promote a better understanding of structural and human resources interventions used to ensure organisational survival in rapidly changing environments.

## 201001.1 Our Sporting Future

**Credit Points** 10 **Level** 3

**Prerequisite**

**201000.1** The World of Sport Business

**Incompatible Units**

200273 - Managing Service and Experience

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Sport has become increasingly globalised, commercialised and professionalised, and is influenced by advances in technology and innovation. It is now recognised that sport can play an important role in areas such as economic regeneration, diplomacy, social integration and improving health and wellbeing. This unit will develop students' understanding of how to encourage participation and drive growth in sports business in the face of a rapidly changing landscape.

## 300984.3 Pavement Materials and Design

**Credit Points** 10 **Level** 2

**Prerequisite**

**300965.1** Engineering Materials

**Equivalent Units**

300482 - Engineering Geology and Concrete Materials, 700239 - Pavement Materials and Design

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This unit will provide students the basic knowledge and concepts on pavement materials and design. It will cover the common materials used in pavement construction such as aggregates, cement, asphalt, and concrete. It will also cover the pavement design system, pavement construction, design of flexible pavements, design of rigid pavements, and pavement maintenance.

## 700239.3 Pavement Materials and Design (WSTC AssocD)

**Credit Points** 10 **Level** 2

**Prerequisite**

**700147.2** Engineering Materials (WSTC AssocD)

**Equivalent Units**

300984 - Pavement Materials and Design

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering.

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This unit will provide students with the basic knowledge and concepts on pavement materials and design. It will cover the common materials used in pavement construction such as aggregates, cement, asphalt and concrete. It will also cover the pavement design system, pavement construction, design of flexible pavements, design of rigid pavements and pavement maintenance.Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## 200860.1 People, Work and Society

**Credit Points** 10 **Level** 3

**Prerequisite**

**200300.2** Managing People at Work

**Equivalent Units**

200616 - Workplace Behaviour, 61441 - Workplace Behaviour

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'People, Work and Society' draws on psychology and sociology to deepen participants' practical human resource management (HRM) expertise. Designed for those aiming at careers as HRM professionals, participants will use HRM knowledge to develop policy and procedure that takes account of the psychology of individuals and groups as well as rising expectations for socially- responsible management. The complexities and rewards around managing diverse workforces receive particular attention. Through the challenge of real-world activities, participants are introduced to the difficult judgements that confront HRM professionals around people at work.

## 300196.5 Personal Communication Systems

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Communications Systems. Digital Communications.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

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This unit covers the design fundamentals of cellular systems, including frequency reuse, channel assignments, radio wave propagation in mobile environments, modulation techniques, coding techniques, spread spectrum and multiple access. It includes topics from emerging wireless technologies, and third-generation mobile communication systems and standards.

## 102616.1 Philosophy and Literature

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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The relationship between philosophy and literature is as old as philosophy itself. In fact, philosophy begins and defines itself in Ancient Greece by setting itself apart from literature – specifically, epic and tragic writings – and claiming for itself a more original role in the effort to understand what is true, what matters, and how one should be with others. From Ancient Greece, through Hellenism and the Roman world, and into the Medieval and Modern periods there was an enduring concern in philosophical traditions with literature, literary themes, and questions of style. However, at the end of the Modern period the concern with literature became so pronounced that philosophers began to write literary texts and to experiment with new styles of expression. Beginning with Kierkegaard and Nietzsche, and moving up to Sartre and Camus, this question of the

relation of philosophy and literature has become a central concern of many contemporary philosophical traditions. This unit will be devoted to exploring both the history of this relation between philosophy and literature, as well as looking more carefully at various moments in that history.

## 102582.1 Philosophy of History and Politics

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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What is History? What justifies the State? These questions have been an object of inquiry as much for philosophers as for historians and political theorists. Large socio-political forces were at work during the Enlightenment and philosophers like Rousseau and Kant sought to understand these movements philosophically. For Rousseau, the lens was genealogical as he worked to produce a "natural history" of politics and society; for Kant, the historical lens was teleological as he narrated instead a philosophical history full of notions of progress and improvement. In the 19th century, philosophers like Hegel and Marx were concerned to think about history and politics as a dialectical movement, while Nietzsche applied Darwin's new theory of evolution to his understanding of history and morals alike. The great shockwaves wrought by the two World Wars of the 20th century brought new philosophical writers to the problems of history and politics, though now with an eye back toward the seemingly failed vision of inevitable progress so successfully peddled by the Enlightenment. This philosophical tradition and its changing approaches to history and politics will be the focus of this unit.

## 102619.1 Philosophy of Nature

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit examines questions and problems concerning the concept of nature or ‘naturalness’. What does it mean to call something ‘natural’ and how are natural things to be distinguished from artificial things or things that are human made? How does technology influence our understanding of nature? What are the ethical implications arising from human relations with the natural world? As well learning time-honoured answers to such questions, students will appreciate the practical relevance of philosophical theorising about nature.

## 102789.1 Philosophy of Race and Racism

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Successful completion of 60 credit points of study in currently enrolled course.

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This unit focuses on philosophical approaches to race and racism. Academic discourse about race sits at the intersection of overlapping research programs taking place in a number of fields including cultural anthropology, the history of science, sociology, political theory, communication studies, and critical philosophy of race. This unit will draw on discussions from a number of these fields. Students will interrogate the ways in which subjects are racialized, both by culture and by the state. They will analyse major texts concerned with race and racism, and examine and critique the role of ignorance within racist discourse.

## 102620.1 Philosophy, History and Interpretation

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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The focus of this unit will be a topic, or range of topics, particularly relevant in philosophy, which will be analysed both in their historical context and through subsequent interpretations by other philosophers or philosophical traditions. The unit will combine the hermeneutic interpretation of texts together with conceptual and argumentative analysis. Close attention will be paid to the language and systematic content of the philosophical issues examined. Moreover, students will be guided in factoring in the historical situation both for the philosopher (s) examined and for us as interpreters.

## 100941.5 Photomedia: Fashion and Identity

**Credit Points** 10 **Level** 3

**Prerequisite**

**102268.1** Photomedia: Photographic Practice

**Equivalent Units**

100780 - Fashion, Style and Identity, 10958 - Photomedia 2: Fabrication

**Unit Enrolment Restrictions**

Students must be enrolled in course 1571 Bachelor of Design (Visual Communication), 1737 Bachelor of Design - Visual Communication (Dean’s Scholars) or 1843 Bachelor of Graphic Design (Pathway to Teaching Secondary). Students from other degrees must be enrolled in the Graphic Design major or sub-major in order to enrol into this unit. Specialist photography facilities with limited space, equipment and limited specialist technical support preclude students who have not completed the pre-requisite units from taking this unit as an elective.

.....

This unit explores issues of identity through photographic practice as used in Fashion Photography. Fashion is a universal form of self-expression, making it the communication strategy most employed to express identity based on material and non-material cultures. The role of photography in the creation of iconic and culturally referential images in both commercial and editorial work will be researched, analysed and interpreted in order to place the student's work in context. It provides students with capacity building through an advanced experience with studio lighting, digital effects for fashion based image making and experience with location and studio

photography and of professional photography as it is used in fashion publications.

## 102268.2 Photomedia: Photographic Practice

**Credit Points** 10 **Level** 2

**Prerequisite**

**101884.1** Introduction to Photomedia OR **102263.1** Image Design

**Equivalent Units**

101012 - Photomedia, 100777 - Designing the Image, 100793 - Photo Documentary, 10879 - Introduction to Photomedia

**Unit Enrolment Restrictions**

Students must be enrolled in 1571 Bachelor of Design (Visual Communication) or 1737 Bachelor of Design - Visual Communication (Dean's Scholars). Specialist photography facilities with limited space, equipment and limited specialist technical support preclude other students from taking this unit as an elective.

.....

This unit introduces and examines the multifaceted nature of photographic practice. Students will be introduced to current methods of photographic image production and design for the purpose of Visual Communication. It explores the relationship between photographic technique, genre and the reception of photographic imagery. Students will be introduced to photographic studio practice as the means of controlling image reception, through the intrinsic principles of the photographic medium, including the control of light, exposure in a studio situation and digital post production.

## 300464.2 Physics and Materials

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

HSC physics and HSC mathematics

**Equivalent Units**

14227 - Engineering Physics, 700020 - Physics and Materials (UWSC), 700117 - Physics and Materials (UWSC Assoc Deg)

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In 2014 this unit will be replaced by 300963 Engineering Physics. This unit serves as an introduction to the fundamentals of physics and materials with appropriate applications in a wide range of engineering and industrial design systems.

## 101752.2 Pigments of the Imagination

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Successful completion of 40 credit points of study in currently enrolled course.

.....

This unit is available to all Undergraduate students who have open electives. Pigments of the Imagination challenges the accepted view that there is such a thing as 'race' based on skin colour and that identity is based on it. This unit will encourage students to consider their own definitions of race and explore the view that it is an imaginary concept. Students will examine the various ways race as an imaginary concept permeates our education practices and cultural representations influencing the construction of racially classified positions for Indigenous Australians as well as all Australians. Students will be encouraged, by critically analysing a range of cultural texts to re-imagine Indigenous and Non-Indigenous relations through flipped mode of delivery supported by face to face tutorials.

## 300990.3 Pile Foundations

**Credit Points** 10 **Level** 4

**Prerequisite**

**301001.1** Engineering Geomechanics OR **300485.3** Foundation Engineering

.....

This unit covers analysis and design criteria for pile foundations subjected to axial, lateral and dynamic loading based on the Australian Standards. Computer software necessary to carry out analysis and design will be introduced. Also field testing methods available for pile integrity testing will be discussed.

## 200148.2 Planning and Design of Hospitality Facilities

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

This is an advanced unit which assumes basic knowledge of hospitality management.

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This unit will be replaced by 200989 Hospitality Places and Spaces from 2018. An understanding of planning and design is critical to the effective long-term sustainability and performance of hospitality businesses. Planning and Design of Hospitality Facilities provides a unique opportunity for students to learn about contemporary planning a design issues including: an examination of design processes; the role of government and building authorities; design principles for hospitality facilities; sustainability; and managerial aspects related to commissioning and evaluating hospitality facilities.

## 101593.4 Planning the City: Development, Community and Systems

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 80 credit points

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This unit aims to provide students with a fundamental understanding of the role of government, focusing on the role and nature of planning across all levels of government from a variety of theoretical frameworks. It presents a critical examination of the urban development and planning processes, with particular attention given to the environmental and political issues associated with planning at the local government level. It looks at the changes and

challenges confronting local government in view of the demands made on them by the changing social and economic conditions and societal values such as those relating to requirements for public participation, transparency and accountability. The unit also examines the role of private sector in planning and assessment processes.

## 100882.3 Politics of Sex and Gender

**Credit Points** 10 **Level** 2

**Equivalent Units**

63196 - Sex, Gender and Social Relations

**Unit Enrolment Restrictions**

Successful completion of 40 credit points of study in currently enrolled course.

.....

This unit provides an introduction to the study of the contemporary politics of sex and gender. Students study key concepts and learn to apply these concepts in the analysis of current issues. Concepts covered include the meanings of sex, gender and sexuality; biology and social constructionism; gendered bodies; doing gender; equality and difference. The concept of intersectionality - how gender intersects in complex relationships of power with other differences such as ethnicity, sexuality, dis/ability and class - is central to this area of study. The unit explores the meaning and potential for social change for a more equitable society and the obstacles to that. Strategies examined range from the use of targets and quotas, to social and cultural activism. Students have the opportunity to explore areas of personal and scholarly interest.

## 101985.1 Politics, Power and Resistance

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

.....

This unit examines the effects of politics on society and of the social on politics. Politics is understood as a struggle for defining how we live in common with others. We examine how power is attained and maintained and how some ideologies dominate over others to shape opportunities for challenging the status quo. Our focus is the contemporary nation-state in the context of globalisation, increased transnationalism, and shifting balances of power. Key themes include economic and social inequality in the modern state, the colonial power matrix, discipline and punishment, gender and race, and resistance to oppression. Each week will combine theoretical approaches and case-study based 'perspectives' on the topic.

## 101987.1 Postcolonial Australian Cinema

**Credit Points** 10 **Level** 3

**Equivalent Units**

100990 - Cinema, Culture, Memory

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

.....

This unit will examine the role of cinema in forming images of national and cultural identity. The unit will explore the development of Indigenous and postcolonial cinema in Australia. The unit will discuss political debates and issues in postcolonial Australian cinema, and will raise questions about the nature of memory as it is mediated by cinematic experience, the representation of history, and the history of representation of indigenous cultures and peoples. The unit will examine these questions through a study of postcolonial Australian cinema produced by both Indigenous and non-Indigenous filmmakers.

## 300052.5 Power and Machines

**Credit Points** 10 **Level** 2

**Prerequisite**

**300005.2** Circuit Theory OR **301352.1** Circuits and Signals

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This unit develops an understanding an understanding of the basic concepts of power and machines, including modern power systems and transformers, in addition to the fundamentals of electromechanical energy conversion. Students will also study magnetic circuits, modern permanent magnet materials and their characteristics, and balanced and unbalanced three-phase power systems.

## 300772.3 Power Electronics

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Basic knowledge of power frequency devices and systems

**Prerequisite**

**300052.2** Power and Machines AND **300025.3** Electronics

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The unit covers various types of power electronics systems, their applications and use in Electrical Drive Systems. It also covers application considerations and modern developments in electronic systems. This course provides the fundamentals of Power Electronics and Industrial Electronics.

## 300995.3 Power Quality

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Students are expected to be familiar with basic power system calculations including balanced and unbalanced three-phase systems

**Unit Enrolment Restrictions**

Students must be enrolled in courses 3689 Bachelor of Engineering, 3740 Bachelor of Engineering (Honours) or 3690 Bachelor of Engineering Advanced (Honours) and must have successfully completed 150 credit points.

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This unit is to introduce students to power quality phenomena such as voltage sag/swell, distortions, unbalance, and flicker that occur in power systems. The unit also introduces terms and definitions associated with power quality, following which each phenomenon, that is, voltage sag/swell, transient overvoltage, and harmonics. In addition, flicker is presented and discussed in detail for students to understand the sources and impact of these occurrences on power system as well as typical mitigation techniques. Finally, students are introduced to power quality benchmarking, monitoring and assessment.

## 300197.5 Power System Planning and Economics

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

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This unit covers planning techniques for energy and electrical power systems. It also covers the economics of various options and reliability of electrical power systems.

## 300771.3 Power Systems

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Basic knowledge of power frequency devices and systems

**Prerequisite**

**300052.2** Power and Machines

.....

This unit provides students with a global picture of electrical energy systems. Through practical exercises students will examine and analyse the basic processes of generation, transmission and distribution, power system analysis and planning as well as power systems operation under steady-state and transient conditions. Various aspects of power system operation including harmonics, fundamentals of protection, environmental issues and renewable energy systems are also covered in this unit.

## 102618.1 Practical Philosophy

**Credit Points** 20 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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The unit Practical Philosophy deals with the application of philosophical understanding to human activity. ‘Practical philosophy’ in principle encompasses questions of the meaning and appropriateness of various practices, as well as theoretical questions about the nature of practices themselves, questions such as ‘What should we do?’ and ‘What is it that we are doing?’ The unit may thus involve considering philosophical perspectives on ethical, political, educational, and legal questions, and more abstract considerations relating to practices such as the philosophy of action.

## 200964.1 Principles of International Law

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Bachelor of Laws or equivalent qualification

**Unit Enrolment Restrictions**

Students must be enrolled in courses 8083 Bachelor of Research Studies/Master of Research, 8084/8085 Master of Research, 2824 Master of Laws, 2784 or 2810 Master of Laws (International Governance).

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This unit explores the nature, role and characteristics of international law; the concepts of statehood; sovereignty and jurisdiction; the relationships between domestic and international law; the role of law and treaties; and the role of international organisations such as the United Nations and International Court of Justice. The unit also examines contemporaneous and contentious issues of international law.

## 100483.2 Principles of Professional Communication 1

**Credit Points** 10 **Level** 1

**Equivalent Units**

63901 Written and Oral Presentation 2, H1745 Business Skills for Professionals, J1751 Professional Skills for Science and Technology, 700040 Principles of Professional Communication 1 (WSTC)

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The unit provides students with an introductory understanding of a range of communication theories and practices necessary for academic work and professional success.

## 200602.2 Principles of Valuation

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

Students undertaking this unit should have a sound knowledge of the property industry and an understanding of introductory financial mathematics.

**Equivalent Units**

VA102A - Principles of Valuation

**Unit Enrolment Restrictions**

External offerings for this unit are only available to students who are enrolled in a Property course or specialisation.

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This unit covers five main topic areas. The first area covers various valuation methods and extends the students’ knowledge in relation to industrial property valuation. The second area covers the hypothetical development method of valuation as well as strata valuation principles. The third area introduces the valuation of partial interests and advanced valuation mathematics. The fourth area provides an introduction to statutory valuation, rating and taxing of property. The last area introduces the students to commercial property valuation.

## 301365.1 Probabilistic Graphical Models

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Probability, Linear Algebra, Basic Programming

**Prerequisite**

**301114.2** The Nature of Data

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Modelling data provides us with a method for inference, but there are many occurrences when interest lies in the reasoning behind the decision making. In this unit, students learn to model processes and the reasoning behind the processes using probabilistic graphical models. The unit investigates the construction and application of model-based approaches for complex systems. Students will manually create models based on prior knowledge and investigate methods of learning model structures from data, which can be used to make decisions under uncertainty. Topics covered include Monte Carlo Methods, Decision Theory, Bayesian networks, Markov networks, and the use of information theory.

## 200575.3 Processes and Evaluation in Employment Relations

**Credit Points** 10 **Level** 3

**Prerequisite**

**200300.2** Managing People at Work

**Equivalent Units**

200381 - Human Resources Development Seminar

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This unit applies theory and skills developed throughout the discipline in Human Resource Management to real-world organisational and policy challenges and opportunities. Students will develop and use employment relations concepts and "metrics" to design implementation plans and to evaluate policies, practices and change initiatives. Students' skills in communication and problem solving will be assured in this unit.

## 700283.2 Professional Communication Skills for Engineering (WSTC Prep)

**Credit Points** 10 **Level** Z

**Equivalent Units**

700209 Introduction to Academic Communication 1 (WSTC Prep) 900107 Introduction to Academic Communication 1 (WSTC) 700280 Essential Skills for Academic Success (WSTC Prep) 700275 Communication Skills for Construction Management (WSTC Prep) 700276 Academic and Professional Communication(WSTC Prep)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7162 Diploma in Engineering Extended.

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This unit is designed to prepare students for real-life communication scenarios in academic and professional contexts, using authentic tasks and assignments. There is a focus on oral and written English skills using introductory level engineering texts and relevant lexical/ grammatical structures of subject areas.

## 300975.1 Professional Competencies

**Credit Points** 10 **Level** 1

**Equivalent Units**

300674 Engineering, Design & Construction Practice;3 01213 Construction Communication; 700038 Engineering Design & Construction Practice (UWSC); 700107 Engineering, Design & Construction Practice; 700154 Professional Competencies (WSTC)

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From 2019 this unit is replaced by 301213 Construction Communication. This unit encourages students to explore professional responsibilities and challenges faced by construction professionals. Students are introduced to the construction profession through the use of industry case studies and project problems. Students engage in a research and problem-solving task that addresses sustainability imperatives and fosters fundamental research and communication skills. Special emphasis is placed on academic and business literacy, project management and teamwork which equip students for subsequent academic and professional contexts.

## 700154.2 Professional Competencies (WSTC)

**Credit Points** 10 **Level** 1

**Equivalent Units**

300674 - Engineering, Design & Construction Practice, 300975 - Professional Competencies,. 700038 - Engineering, Design & Construction Practice (UWSC), 700107 - Engineering, Design & Construction Practice (UWSC Assoc Deg)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College. Students enrolled in Extended Diplomas must pass 40 credit points from the preparatory units listed in the course structure prior to enrolling in this University level unit. Students enrolled in the combined Diploma/Bachelor courses listed below must pass all College Preparatory units listed in the course structure before progressing to the Year 2 units.

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In 2020 this unit replaced by 700290 – Construction Communication (WSTC). This unit encourages students to explore professional responsibilities and challenges faced by construction professionals. Students are introduced to the construction management profession through the use of industry case studies and project problems. Students engage in a research and problem-solving task that addresses sustainability imperatives and fosters fundamental research and communication skills. Special emphasis is placed on academic and business literacy, project management and teamwork which equip students for subsequent academic and professional contexts.

## 300053.6 Professional Practice

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Some experience with the range of employment opportunities that are available in the Australian construction industry.

**Prerequisite**

**300975.1** Professional Competencies OR **300964.1** Introduction to Engineering Practice OR **301213.1** Construction Communication

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This unit focuses on ethical conduct for construction managers and on the range of procurement systems utilised in the modern construction industry. It deals with matters of professional responsibility to the community, as well as, honourable and lawful practices in the conduct of business. The issues of confidentiality of information and conflict of interest are examined in the context of real project histories. Risk management and its relationship with quality project delivery are considered in the light of the changing nature of an industrialised, digitalised and globalised construction industry.

## 700118.4 Professional Practice for Engineer Associates (WSTC AssocD)

**Credit Points** 10 **Level** 2

**Prerequisite**

**700109.2** Engineering Management for Engineer Associates (WSTC AssocD)

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering.

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This unit will provide the knowledge and skills to enable students to support the achievement of organisational goals through applying knowledge of environment and internal culture. The unit evaluates planning processes and goal setting to achieve superior performance and compares alternative approaches to motivation of work team members. Students will consider types of managerial communications and their associated communications channels in achieving best professional practice.

## 200020.5 Professional Responsibility and Legal Ethics

**Credit Points** 10 **Level** 3

**Corequisite**

**200006.2** Introduction to Law OR **200977.1** Fundamentals of Australian Law

**Equivalent Units**

69024 - Professional Conduct and Legal Ethics, F1002 - The Legal Context

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This unit examines the nature of the legal profession and its role in society. It deals with the professional, legal and ethical responsibilities legal practitioners owe to the law, the courts, their clients and to fellow practitioners, as well as the state and society at large. Students will be able to explain and evaluate the law and practice of legal practitioners, by reference to key topics, such as: professionalism; legal ethics; the history, structure and regulation of the legal profession; and the interpersonal, psychological and cultural factors affecting lawyering. In addition students will be able to demonstrate the process of ethical decision making by selecting and using ethical decision making tools in a legal context.

## 300727.4 Project Management

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

An understanding of basic knowledge in building and construction.

**Equivalent Units**

MG313A - Project Management

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This unit is to give students an understanding of appropriate methods of managing construction projects and to develop skills in using these methods on the type of projects the students expect to undertake in their professional careers. Content: Major knowledge areas of project management.

## MG313A.1 Project Management

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

An understanding of construction planning and planning techniques (such as critical path method)

**Equivalent Units**

300727 - Project Management.

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In 2010 this unit replaced by 300727 - Project Management. This unit is intended to give students an understanding of appropriate methods of managing projects and to develop skills in using these methods on the type of projects the students expect to undertake in their professional careers. Content: Management of time, management of cost, quality, resources and communications.

## 200874.1 Property Development Process

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

It is assumed that students will have a sound knowledge of valuation practices and principles, economic theory and town planning principles.

**Equivalent Units**

DN310A Property Development, 200598 Property Development

**Unit Enrolment Restrictions**

External offerings for this unit are only available to students who are enrolled in a Property course or specialisation.

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In this unit, students critically evaluate the property development process, from the initial development concept through to the end-use of completed development projects. Consideration is given to the implications of the property development process and development decisions from the viewpoints of developers, end users, financiers, public authorities and the community. Students acquire a theoretical understanding of the property development process, development appraisal techniques including financial and feasibility aspects, as well as an understanding of how to apply these techniques to a property scenario. Planning issues are also critically examined.

## 200875.1 Property Finance

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

It is assumed that students will have a sound knowledge of: 1. Valuation and financial mathematics 2. Concepts of discounted cash flow analysis and application 3. Statutory valuation legislation and procedures 4. Property portfolio analysis and property investment analysis and application

**Equivalent Units**

CO308A Property Finance and Tax, 200597 Property Finance and Tax

**Unit Enrolment Restrictions**

External offerings for this unit are only available to students who are enrolled in a Property course or specialisation.

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The aim of this unit is to provide insight into property finance in Australia and overseas. Students critically review equity and debt financing and examine the financing alternatives available, as well as methods for evaluating these alternatives. Students also examine the impact of debt financing on a property and evaluate the taxation aspects of property transactions. In addition, students gain both a theoretical and an applied understanding of an after-tax cash flow projection in this unit. International property finance is also addressed.

## 200749.2 Property Investment

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Students undertaking this unit require the background knowledge achieved through prior study in the general principles of valuation.

**Equivalent Units**

200437 - Property Investment

**Unit Enrolment Restrictions**

External offerings for this unit are only available to students who are enrolled in a Property course or specialisation.

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Property Investment addresses critical issues in property investment analysis. The characteristics and fundamentals of property investment will be addressed. Students will learn and apply the concepts of property economics, market analysis, valuation, financial analysis and risk analysis in making property investment decision. The subject pays special attention to the discounted cash flow method as the basis of analysis for investment properties. Finally, students will be introduced to property finance, taxation and international property investment issues.

## 200873.1 Property Portfolio Management

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

A sound understanding of commercial property.

**Equivalent Units**

200750 Property Portfolio Analysis (V2), 200438 Property Portfolio Analysis (V2)

**Unit Enrolment Restrictions**

External offerings for this unit are only available to students who are enrolled in a Property course or specialisation.

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This unit examines the role of property in an investment portfolio, with particular attention given to property portfolio performance analysis and property investment strategy. Indirect property investment vehicles in Australia and overseas are assessed, including Real Estate Investment Trusts, property syndicates, property securities funds and unlisted property funds. The performance analysis of both direct and indirect property is also examined to assess the strategic contribution of property to an investment portfolio.

## 101184.4 Psychology: Human Behaviour

**Credit Points** 10 **Level** 1

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Psychology is a field of scientific inquiry that uses a set of scientific techniques and methods to explain and understand the causes of behaviour. As a profession, psychology applies its knowledge to practical problems in human behaviour. This unit covers a range of topics in psychology at an introductory level including: the history of psychology, intelligence, social psychology, developmental psychology, Australian Indigenous and cross-cultural psychology, personality, and abnormal psychology.

## 102574.2 Public Health in Complex Emergencies (Advanced)

**Credit Points** 10 **Level** 7

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The health, socio-economic, and political aspects of conflicts and disasters are complex and multidimensional, requiring political commitment and coordinated and effective prevention. This unit uses critical analyses to provide students with the skills and knowledge required to understand the politics of public health response in emergency situations. Students will be introduced to rapid health assessment protocols in, and health priorities and the prevention of public health effects of, complex emergencies. They will gain practical skills to evaluate and critically appraise the evidence used to inform public health policy and the effectiveness of different decision-making practices in emergency situations.

## 300748.4 Quality and Value Management

**Credit Points** 10 **Level** 3

**Equivalent Units**

200469 - Quality and Value Management

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Introduces students to the concepts of quality systems value management techniques and their application to the built environment. Students will gain knowledge of quality assurance and value management theories, techniques and principles so that they can apply as they enter into their professional careers.

## 200486.3 Quantity Surveying 1

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Building construction including residential, light industrial and small commercial.

**Equivalent Units**

301208 - Building Measurement

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In 2019 this unit will be replaced by 301208 - Building Measurement. This unit is designed to develop the techniques required to measure, quantify and prepare bills of quantities for residential construction. It will also help students to develop the basic skills of a Quantity Surveyor.

## 200487.5 Quantity Surveying 2

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Building construction including residential, light industrial and small commercial as covered in the subjects Building 1, Building 2 and Quantity Surveying 1.

**Prerequisite**

**200486.2** Quantity Surveying 1 OR **301208.1** Building Measurement

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This subject is designed to provide students with an advanced understanding of the various roles of a quantity surveyor. Students will develop an ability to apply the skills necessary to deliver both pre-contract and post-contract quantity surveying services.

## 102191.1 Queer Culture

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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Queer culture will introduce students to queer theory and provide opportunities to use these theories in the close study of cultural practice and politics. Queer theory counters the idea that people have stable sexes, genders and sexualities. Instead, queer theory argues that the experience of those that are homosexual, bisexual, transgender, and intersex highlight the frequent mis-matches in what are taken for granted to be 'normal' experiences of identity. Queer theory demonstrates the impossibility of a natural or normal sexuality, but it also demonstrates the problem with the terms 'man' and 'woman', 'male' and 'female', 'normal' and 'abnormal'. In Queer culture students will learn about queer theories and have the opportunity to apply these theories to an in-depth and personally engaging study of queer politics and activism; queer media, film and performance; and queer sex, selfhood, and identity trans/formations.

## 300489.4 Radio and Satellite Communication

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Physics and Materials, Mathematics for Engineers 1 and 2, Astrophysics

**Prerequisite**

**300007.2** Communication Systems OR **300010.3** Data Networks

**Equivalent Units**

14297 - Satellite Communication

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This unit is offered in alternate years. This unit will develop an understanding of the theory and practice of radio and satellite communication techniques and measurements and provide an introduction to space communication systems. It will complement the general communication engineering units, addressing advanced topics important and specific to radio and satellite communications.

## 101005.4 Representing Crime

**Credit Points** 10 **Level** 3

**Equivalent Units**

SS233A - Representing Crime.

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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This unit deals with the evolution of the figure of the detective and of the criminal; the development of an aesthetics of crime from the later 18th Century; the dynamic nature of fiction, film and television genres of detection. Literatures of sensation, detective fictions, true crime writing and the non-fiction novel will all be examined to allow an in-depth analysis of the changing ethical and psychological character of the detective, and of his nemeses. The crime story in film, television and in other new media may also be addressed to facilitate an analysis of changing cultural contexts for the crime story.

## 101917.1 Representing Everyday Life in Literary and Visual Cultures

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Successful completion of 40 credit points of study in currently enrolled course.

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This unit explores how the realm of everyday life has been imagined and represented in a range of literary traditions and visual and media cultures. It examines what we understand by this concept, realist and experimental approaches to its representation, and how everyday life is shaped by various historical, social and cultural factors (e.g. technology, gender, class, war). With a focus on modern and contemporary texts and contexts, students will study primary works in relation to key theories of the everyday. Possible topics include: Victorian realism, Surrealism, stream of consciousness narration, social documentary photography, social realist cinema, postmodern narrative, blogs.

## 800228.1 Research Internship and Engagement

**Credit Points** 10 **Level** 7

**Prerequisite**

800218.1 Researcher Development 1: Reading ,Writing, and the Business of Research

**Equivalent Units**

800176 - Internship and Community Engagement (PG)

**Unit Enrolment Restrictions**

Students must be enrolled in 8083 Bachelor of Research Studies or 8084/8085 Master of Research. Internship or work placement must be agreed between student and unit coordinator prior to student enrolling in the unit.

**Special Requirements - Essential Equipment**

Any Internship/work placement site requirements. For example safety gear.

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The aim of this unit is to provide MRes candidates with a research development and training opportunity through a cross disciplinary, supportive, experiential learning environment. Through exposure to workplaces, research institutes, community settings, and research processes, students will have the opportunity to apply their research and technical skills and develop their professional identity in their chosen field of research. The placement will be chosen by the student in consultation with the unit coordinator and will be undertaken either as an individual or part of a project team. If students enrolled in B Research Studies/M Research wish to take this unit before having completed the prerequisite unit 800218 Researcher Development 1: Reading, Writing, and the Business of Research, contact the unit coordinator to obtain permission to complete a rule waiver (this will be on a case by case basis only).

## 102728.1 Research into Practice: bridging the clinician-researcher divide in applied and creative therapies

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

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Evidence Based Research (EBR) can inform excellence in clinical practice in order to best meet the needs of our clients and patients. How we choose and use this research is critical, as is the way that we understand ourselves to be a researcher, beyond our practitioner identity. If you are seeking to translate benchtop research (basic laboratory approaches) into applied research practice, and if you are transitioning towards a new identity as a clinician-researcher, this is the unit for you. Our applied research focus considers broad applications relevant to the creative arts therapies, verbal therapies, allied and other health professions, by looking at research processes which ultimately improve practice in the 'real world'.

## 301387.1 Research Preparation in Post Graduate Studies

**Credit Points** 10 **Level** 7

**Equivalent Units**

301004 - Research Preparation in Post Graduate Studies

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Life is research! This unit introduces students to the nature of research and why it is essential to today's way of living. What are the current and big questions in research? How to prepare for conducting a research in various areas? What are the differences between study, investigation and research? In this unit, the main emphasis will be on different types of modern research and their methods/ methodologies with special emphasis on Science, Technology, Engineering & Mathematics (STEM). This unit will also encompass various advanced tools that support research, its writing styles, publication channels and research ethics. Key elements of good research design are also introduced as well as the concepts of intellectual property and commercialisation.

## 301069.3 Research Stories

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Students must have a minimum GPA of 5 and be enrolled in The Academy at Western Sydney University; i.e. students enrolled in the Bachelor of Applied Leadership and Critical Thinking or other advanced courses at the discretion of the Academy or the Dean.

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From 1H 2022 this unit replaced by 800240 Knowledge Journeys. This unit is designed for high-achieving students who may be enrolled in Advanced degrees, or the Bachelor of Applied Leadership and Critical Thinking. Narrative inquiry and story-telling is growing in popularity across disciplines as a way of collecting, analysing and presenting

complex data. Students will be challenged by the complexity of narrative sense-making and the relationship between personal and cultural narratives (as well as counter-narratives). By following the research journey rather than only the 'outcomes' we can learn from mistakes in the research process and find solutions to real world problems. This unit prepares students with the interdisciplinary research skills needed for the careers of tomorrow.

## 800218.2 Researcher Development 1: Reading, Writing, and the Business of Research

**Credit Points** 10 **Level** 4

**Equivalent Units**

800166 - Research Design 1: Theories of Enquiry

**Unit Enrolment Restrictions**

Students must be enrolled in 8083 Bachelor of Research Studies/Master of Research, 8084 Master of Research (High Cost) or 8085 Master of Research (Low Cost), 8119 Bachelor of Research Studies (Planning), 1712 Master of Planning, 3702 (8112) Master of Information and Communications Technology (Research), 1870 Master of Chinese Cultural Relations, 1883 Master of Cross-cultural Relations or 3761 Master of Architecture (Urban Transformation).

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Research is the process of using knowledge to generate new understandings of the world. Research is also a social enterprise, with communities and norms of behaviour, and is an industry that is shaped by numerous cultural and economic forces. Taking a holistic approach that includes general research skill development, this unit focuses on four main topics: (1) critical reading, (2) effective writing, (3) research as a professional industry, and (4) the ethics of stewardship and personal responsibility. The unit equips students with vital skills that underpin their discipline-specific learning, and lays the ground for their development as professional researchers.

## 800220.3 Researcher Development 2: Proposing and Justifying Research

**Credit Points** 10 **Level** 4

**Prerequisite**

**800218.1** Researcher Development 1: Reading ,Writing, and the Business of Research

**Equivalent Units**

800169 - Research Design 2: Practices of Research

**Unit Enrolment Restrictions**

Students must be enrolled in 8083 Bachelor of Research Studies/Master of Research, 8084 Master of Research (High Cost) or 8085 Master of Research (Low Cost), 8119 Bachelor of Research Studies (Planning), 1712 Master of Planning, 3702 (& MICTRES/8112) Master of Information and Communications Technology (Research), 1870 Master of Chinese Cultural Relations or 1883 Master of Cross-cultural Relations or 3761 Master of Architecture (Urban Transformation)

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An essential skill required by researchers is the ability to propose research and justify it in a persuasive manner. Through interactive workshops, Researcher Development 2 helps students develop and refine a research proposal. The unit includes workshops on research ethics that will help students articulate the significance and relevance of their work and will assist those requiring ethics clearance. The written proposal is defended through the oral Presentation of Proposal (POP). After successful completion of this unit, students will have demonstrated an ability to design and justify a research project in their discipline.

## 101906.2 Researching Culture

**Credit Points** 10 **Level** 2

**Prerequisite**

**100897.2** Everyday Life OR **101979.1** Understanding Visual Culture

**Unit Enrolment Restrictions**

Successful completion of 40 credit points including one of the pre-requisite units shown above.

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This unit introduces students to the diverse field of cultural research. It outlines and explains qualitative research methods and methodologies used by cultural researchers. Tutorials and assessment tasks involve 'hands-on' activities designed to familiarise students with the research process and research practices that explore taken-for-granted aspects of everyday life such as interviews, focus groups and observation based research; as well as sensory research, the use of diary methods, and the critically important ethical dimensions of social and cultural research. Through completion of this unit, students will gain critical literacies in creating and analysing a range of qualitative data.

## 800195.2 Researching our Changing Environment

**Credit Points** 10 **Level** 4

**Unit Enrolment Restrictions**

Students must be enrolled in course 8083 Bachelor of Research Studies/Master of Research

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This unit focuses on learning to critically evaluate current research in topics under study at the Hawkesbury Institute for the Environment and how advanced scholarship in your field of study is conducted. The Hawkesbury Institute for the Environment spans a broad set of fields from soil microbial genomics and microbial ecology to the biogeochemistry, ecology and physiology of plants and microbes, animal ecology and evolution, to ecosystems, landscapes and Australia-wide processes. Teaching sessions are designed around a thematic cross-section of research within HIE, representing many of these areas. The unit also involves enhancing skill in evaluating appropriate research methodologies for asking questions and testing hypotheses, including an introduction to some of the large-scale research facilities within HIE that students may be involved with.

## 800216.1 Researching Post-Capitalist Possibilities (PhD Summer School)

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Students should have a working understanding of their disciplinary field at graduate level and familiarity with different social theoretical and methodological traditions in order to get maximum course benefit.

**Unit Enrolment Restrictions**

Students must be enrolled in a Masters by research or PhD and must obtain permission from the Unit Coordinator to enrol in the unit.

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Researching Post-Capitalist Possibilities offers HDR students the opportunity to explore how the humanities and social sciences can play a role in making other worlds possible. It develops the thinking capacities we need as scholars to shape the world and reviews the ethical responsibilities that come with this work. It offers an opportunity to work with scholar members of the Community Economies Collective within the Institute for Culture and Society (ICS) who have been thinking outside or beyond capitalist relations since the publication of J.K. Gibson-Graham's The End of Capitalism (As We Knew It) in 1996.

## 102266.2 Researching the Visual

**Credit Points** 10 **Level** 2

**Prerequisite**

**102262.1** Design Histories and Futures OR **102263.1** Image Design OR **101922.1** Web and Time-based Design

The pre-requisite requirement does not apply to students in course 1791 Bachelor of Screen Media (Arts and Production) who are required to meet the Unit Enrolment Restriction below.

**Unit Enrolment Restrictions**

Students in course 1791 Bachelor of Screen Media (Arts and Production) must have successfully completed 60 credit points of Level 1 units.

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This unit will introduce students to various ways of seeing and reading images in the visual environment. Students will learn how to conduct visual research using a tool kit of methods including semiotic analysis, content and thematic analysis, and basic observational research across the digital and material environments of visual communications design, and to apply their findings in the development of visual concepts. Students will continue to engage as reflective practitioners and learn to position themselves as visual researchers within a particular cultural and personal context.

## 700304.2 Residential Building (WSTC)

**Credit Points** 10 **Level** 1

**Equivalent Units**

BG101A - Building 1; 700070 - Building 1 (WSTC); 300706 - Building 1; 301226 - Residential Building

**Unit Enrolment Restrictions**

Students must be enrolled at The College to enrol in this unit. Students enrolled in Extended Diploma courses must have passed 40 credit points of preparatory units in order to enrol in this unit. Students enrolled in Integrated courses need to have passed or be enrolled in the preparatory units in their course in order to enrol in this unit.

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This unit provides students with an overview of regulations and construction techniques with an emphasis on low-rise residential buildings in the Australian context. It covers general process, building regulations, environmental issues, surveying techniques, structural elements (footings, framing and bracing), envelope, services, fit-out and finishes.

## 300663.2 Resource Sustainability

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

Basic biological sciences and an understanding of writing & referencing.

**Equivalent Units**

EY101A - Terrestrial Environmental Management, 700099 - Resource Sustainability (UWSC)

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In 2012 this unit replaced by 300810 - Resource Sustainability. Students enrolled in Resources Sustainability will learn about local, national, and global issues concerning human interactions with the environment. The course is designed to provide the practical and theoretical information required for students to think critically about environmental issues and to contribute to the sustainable management of natural and built environments. The course is underpinned by the scientific method and the concept of ecologically sustainable development. Students will undertake a series of exercises to assess sustainability at local and/or personal levels and will analyse and present their data in both audio/visual and written forms, along with suggestions for increasing sustainable resource use.

## 800196.1 Rethinking Culture and Society

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

This unit is considered mandatory for students supervised within the Institute for Culture and Society

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This unit explores key ideas in social and cultural analysis – such as culture, society, experience, power, nature, local/ global, etc – as a way of helping students think through their own research projects. It draws on an approach to cultural and social research, developed at the Institute for Culture and Society, which addresses the contradictions of a world that is increasingly globalised, culturally diverse and technologically mediated. A key aspect of this approach is to revisit the central concepts of social and cultural theory, linked to an overview of existing approaches, developing skills of critical analysis and reflecting on the challenges of

interdisciplinarity, methodological pluralism, cultural complexity and engaged research.

## 101759.2 Rethinking Research with Indigenous Australians: Independent Study Project (Day Mode)

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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This unit will provide students with an exciting opportunity to undertake an Independent Study Project on an Indigenous topic. Students will gain greater knowledge of Indigenous people and develop effective communication skills as well as a level of cultural competency. The Independent Study Project will expose students to the complexities of the cultural inter-relationships and the politics of undertaking research with Indigenous people. It will also provide students with skills and ideas for future research projects that will add to Indigenous knowledge and provide a sound foundation for ethical research.

## 101753.3 Revaluing Indigenous Economics (Day Mode)

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Successful completion of 40 credit points of study in currently enrolled course.

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Revaluing Indigenous Economics will examine Australia's Indigenous economy and its dynamics. It will challenge students to reflect on the significant contribution Indigenous Australians have made and continue to make to our growing economy. It will also challenge students to rethink the politics of the welfare economy as it relates to Indigenous Australians. Students will be introduced to a number of enterprise development case studies for example, The Arts, Mining and Land Development, Tourism and the Environment, Sports and Small Business.

## 200739.2 Reward and Performance Management

**Credit Points** 10 **Level** 3

**Prerequisite**

**200300.2** Managing People at Work

**Incompatible Units**

200611 - Management of Employee Performance, 200612 - Remuneration Theory and Practice

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'Reward and Performance Management' introduces students to critical perspectives in reward management. Through case studies students consider the wider context in which reward strategies are devised and the strategic decisions that arise if reward is to meet regulatory requirements, organisation objectives and the expectations of the workforce. Students examine the component parts of contemporary reward and critically assess the relationship between performance and reward. Through engagement with different types of performance management systems, students identify and assess contrasting approaches to performance management.

## 300056.6 Robotics

**Credit Points** 10 **Level** 4

**Prerequisite**

**300480.2** Dynamics of Mechanical Systems

**Unit Enrolment Restrictions**

Successful completion of 200 credit points.

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The aim of this unit is to develop an understanding of the basic concepts involved in Robotics. The kinematics, dynamics, control and sensing aspects in robotics will be introduced. In addition, the concepts of artificial intelligence (AI) and their applications in robotics will also be introduced. There will be considerable use of MATLAB in the unit.

## 401085.2 Scholarship for Practice Change in Health Care

**Credit Points** 10 **Level** 7

**Equivalent Units**

400807 - Transforming Nursing Practice

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

**Special Requirements - Essential Equipment**

Students must have access to the internet and a computer.

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The transformation of practice in healthcare is facilitated when information about creative and innovative practice change and development is documented, disseminated and critiqued through professional channels such as peer reviewed journals, conference papers, discussion papers or project reports. In this unit students will be provided with an opportunity to produce a scholarly piece of work that will disseminate information about transforming practice and improving patient care. The unit aims to enhance scholarly communication skills, provide a vehicle for demonstrating leadership by informing the health professions of innovative solutions for practice change.

## 700264.1 Scientific Methods for Construction Management (WSTC Prep)

**Credit Points** 10 **Level** Z

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University The College.

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This unit is designed to assist students to become competent in the fields of mathematics and basic physical science. It reinforces the mathematical skills in the areas of basic arithmetic, algebra, geometry and trigonometry. The unit introduces the study of forces, work and energy and

selected applications of these concepts. Emphasis is placed on developing the key competencies of scientific methods to provide the necessary introduction for Building Design and Construction Technology.

## 200921.1 Security Analysis and Business Valuation

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Knowledge acquired in the corporate financial management and fundamentals of accounting.

**Prerequisite**

**200488.3** Corporate Financial Management

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This unit analyses companies from a fundamental perspective in order to derive an intrinsic value for securities. The focus is on the attempt by active investors to identify mispriced securities using publicly available information, company reports and financial market information. The analytical techniques of financial statement analysis (e.g. fundamental analysis, free cash flow analysis and pro-forma analysis) and the issue of the "reliability" and "quality" of publicly available information are discussed and explored. Those contemplating careers in investment banking, financial consulting, trust funds, superannuation funds, hedge funds, and brokerage firms will find this applied unit both useful and interesting.

## 200980.1 Security of Ideas

**Credit Points** 10 **Level** 7

**Prerequisite**

Students enrolled in 2784/2810 Master of Laws (International Governance) must have successfully completed the prerequisite unit 200901 Legal Philosophy and Methodology.

**Corequisite**

Students enrolled in 3748 Master of Information Governance must be enrolled in or have successfully completed the corerequisite unit 200432 Commercial Law.

**Unit Enrolment Restrictions**

Students must be enrolled in 2824 Master of Laws, 2784 or 2810 Master of Laws (International Governance), 3748 Master of Information Governance, Bachelor of Research Studies or Master of Research.

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This unit provides an introduction and overview of the legal principles of intellectual property law, and traces the development of this law in Australia. The modules consider the different forms of intellectual property including copyright (including moral rights and performers protection), designs, patents, plant breeders rights, trade mark law, passing-off and related actions, domain name law, confidentiality, circuit layouts, the historical development of intellectual property, and the international intellectual property framework (including World Intellectual Property Organization (WIPO) and World Trade Organization (WTO)).

## 200898.3 Seminal Papers in Business

**Credit Points** 10 **Level** 4

**Unit Enrolment Restrictions**

Students must be enrolled in course 8083 Bachelor of Research Studies/Master of Research.

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The aim of this unit is to develop skills in applying rigorous analysis and critical assessment to research-debates in business disciplines through an examination of seminal literature in particular business fields which often embrace conflicting theoretical approaches. This will provide candidates with the advanced skills needed to critically analyse debates in a business discipline, while also enabling them to gain more familiarity with theories, issues, and problems in a particular research area. Seminal business papers will be analysed through a balanced and constructive critique of their strengths and weaknesses, providing suggestions for how the work might be extended or improved. From this unit, students will be able to apply the rigorous analytical skills to their own work.

## 200991.2 Service Industry Analytics

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Basic knowledge of the service and experience economies is assumed.

**Equivalent Units**

200707 - Service Industry Studies, 201084 - Customer Insights

**Unit Enrolment Restrictions**

Only students enrolled in the MT2035 Hospitality Management or MT2036 Sport Management can enrol in this unit.

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Service Industry Analytics is designed to provide a working knowledge of how to analyse and report information required in planning and operating a services business. It explores the methods, uses and limitations of contemporary research in the sport and hospitality industries. Students will gain experience with the planning and implementation of research and assessment of service research problems, utilising the collection and analysis of both quantitative and qualitative data.

## 200707.3 Service Industry Studies

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Basic understanding of the service and experience economies is assumed.

**Equivalent Units**

200581 - Sport Management Research Methods, 200559 - Hospitality Business Research Methods, 200681 - Services Research Methods

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This unit will be replaced by 200991 Service Industry Analytics from 2018. This unit introduces students to the methods and approaches managers use to collect information. They will learn and develop practical skills including problem formulation, research design, data collection, data analysis and reporting. Students will have an opportunity to gather, analyse and present both quantitative and qualitative data on a case based service business issue. This unit is designed to provide a working knowledge of how to analyse the information required in planning and operating a services business.

## 300057.7 Signals and Systems

**Credit Points** 10 **Level** 2

**Prerequisite**

**200238.2** Mathematics for Engineers 2 AND **300021.2** Electrical Fundamentals

**Equivalent Units**

700241 - Signals and Systems (WSTC AssocD)

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This unit aims to develop students' understanding of continuous-time and discrete-time concepts and methods. It covers various signals and their analysis, as encountered in the fields of electrical, computer and telecommunication engineering.

## 700241.3 Signals and Systems (WSTC AssocD)

**Credit Points** 10 **Level** 2

**Prerequisite**

**700102.2** Mathematics for Engineers 2 (WSTC AssocD) AND **700104.2** Electrical Fundamentals (WSTC AssocD)

**Equivalent Units**

300057 - Signals and Systems

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering

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This unit aims to develop students understanding of continuous-time and discrete-time concepts and methods. It covers various signals and their analysis, as encountered in the fields of electrical, computer and telecommunication engineering.Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## 301306.2 Simulation in Virtual and Augmented Realities

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Possession of 2D or 3D modelling skills is desirable but not essential

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Simulation in three-dimensional (3D) environments provide valuable insights to human-centred perspectives. Whilst investigating the fundamentals of Virtual Reality (VR) and Augmented Reality (AR), students will analyse aspects of functionality, user interfaces, spatial relationships in built environments, sustainability, efficient resource management, instructional support for safety and training, and accelerated design conceptualisation in detailed new product, service or environmental innovation. Students' experiences will equip them for future employment as VR and AR experience designers, interactive experience producers, or creative technologists.

## 300996.3 Smart Grids and Distributed Generation

**Credit Points** 10 **Level** 4

**Prerequisite**

**300771.1** Power Systems

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This unit is designed to model, analyse and control of newly developing areas of distributed generation and smart grids. The unit will cover modelling, control, simulation and protection of such systems. The unit will cover the impacts of renewable sources and power electronics on the operation of smart grids and micro-grids. The unit will also cover environmental and economic impacts of such systems.

## 102274.1 Social Design: Research and Practice

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Students should have completed one specialisation pairing.

**Prerequisite**

**102270.1** Graphic Design: The Professional Context OR **102266.1** Researching the Visual

**Equivalent Units**

101020 Design Research Training

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This unit introduces students to the idea that graphic designers can be agents of change. Set project briefs will focus on social and political issues exploring the potential inherent in graphic design practice to make a real difference to society. The unit will encourage students to go beyond the definition of a problem solver, encouraging them to act as a problem seeker, who can use their design thinking skills to develop ideas that respond proactively to society's problems rather than reacting to a client's set brief. The unit will introduce further design-led, social and participatory research methods, that continue to build on the design process, and further expand the methods that underpin aspects of research and practice during the remainder of the degree. Students will refine and develop their visual language skills, in combination with material and digital skills, facilitating their development as an independent learner.

## 102194.3 Social Research in the Digital World

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit provides a critical introduction to the opportunities and challenges of digital social research as well as the theoretical, methodological, and ethical implications of carrying out research in and on the digital. The social web provides researchers both with a tool and an environment to explore the intricacies of everyday life. In this unit, students will be immersed in online environments to further understand the theoretical, methodological and ethical issues of social research in the digital world. Through such activities, students participate as active digital researchers in online social science spaces to result in a professional online web presence and an in depth understanding of current and future research trends in digital social research.

## 400337.6 Social Research Methods

**Credit Points** 10 **Level** 2

**Prerequisite**

Successful completion of 40 credit points of completed study for all students except those students enrolled in the course 1874 Postgraduate Bridging Program (Social Work).

**Equivalent Units**

102816 - Investigating and Communicating Social Problems; 63235 - Introduction to Social Research

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In 2021, this unit replaced by unit 102816 - Investigating and Communicating Social Problems. This unit focusses on the purposes and relevance of real-world social research for everyday and professional life through engaging students in their areas of study and interests. Students will discover that social research is driven by asking questions, gathering and analysing data and critical consideration of evidence, along with an understanding of the ethical and underpinning concepts of social research.

## 300731.2 Soil Engineering

**Credit Points** 10 **Level** 2

**Prerequisite**

**200237.3** Mathematics for Engineers 1

**Equivalent Units**

85012 - Soil Engineering, 700119 - Soil Engineering (UWSC Assoc Deg)

**Unit Enrolment Restrictions**

Restriction on size of lab class.

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From 2015, this unit is replaced by 300985 Soil Mechanics. This unit is an introductory course covering the use of soil, and the water in it, as an engineering material. It will provide students with a basic understanding of the physical and mechanical properties of soils, simple soil testing methods to characterise soil strength and deformation behaviour and how to apply basic techniques to assess the hydro-mechanical response of soils subjected to loading.

## 300985.4 Soil Mechanics

**Credit Points** 10 **Level** 2

**Prerequisite**

**200237.4** Mathematics for Engineers 1

**Equivalent Units**

300731 - Soil Engineering, 700245 - Soil Mechanics (WSTC AssocD)

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This is an introductory unit covering the use of soil, and the water in it, as an engineering material. It will provide students with a basic understanding of the physical and mechanical properties of soils, simple soil testing methods to characterise soil strength and deformation behaviour, and how to apply basic techniques to assess the hydro-mechanical response of soils subjected to loading.

## 700245.3 Soil Mechanics (WSTC AssocD)

**Credit Points** 10 **Level** 2

**Prerequisite**

**700101.1** Mathematics for Engineers 1 (UWSC Assoc Deg)

**Equivalent Units**

300731 - Soil Engineering; 300985 - Soil Mechanics

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering

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This unit is an introductory unit covering the use of soil, and the water in it, as an engineering material. It will provide students with a basic understanding of the physical and mechanical properties of soils, simple soil testing methods to characterise soil strength and deformation behaviour and how to apply basic techniques to assess the hydro-mechanical response of soils subjected to loading.Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## 301248.3 Space Instrumentation, Technology and Communication

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Knowledge of Mathematics equivalent to 2-unit HSC, and experience with the use of computer software such as Excel or Word would be beneficial. Previous experience of statistics or computer programming will be an advantage but is not essential.

**Unit Enrolment Restrictions**

Student must be enrolled in a postgraduate course.

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The Space Instrumentation, Technology and Communication unit is focussed on the application of space

technology in industrial settings. Its main objective is to provide a sound knowledge of the underlying principles which form a thorough basis for careers in space technology, satellite communications and related fields. This unit gives the student grounding in the technologies used in space science. By considering the underlying scientific principles and case studies of the instrumentation used in space, students will not only understand the current state of the art in space science, but also the foundations of the field in order to be able to stay current in this fast-moving field. Content includes but is not limited to: Imaging, Detectors, Principles of Communication, and Principles of Space Technology.

## 301249.2 Space Science, Planetary Science and Meteorology

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Knowledge of Mathematics equivalent to 2-unit HSC, and experience with the use of computer software such as Excel or Word would be beneficial. Previous experience of statistics or computer programming will be an advantage but is not essential.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit examines the six key priorities of the Australian Space Agency: communication, space debris monitoring, navigation and positioning, Earth observation, space technology research and development, and remote asset management. Students will examine the Sun and Solar System, planetary science, meteorology, and the physics of rockets and satellites. Students will explore the interconnections between the Earth land, ocean, atmosphere, and life of our planet in the era of modern satellite technologies. These include the critical review of our understanding about the cycles of water, carbon, rock, and other materials that continuously shape, influence, and sustain Earth and its inhabitants. Students will also be able to design new models of the cyclical interactions between the Earth system and the Sun, Moon and will discover the fundamental processes which define our Universe and our planet.

## 200990.1 Special Event Management

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

This is an advanced unit which assumes intermediate knowledge of sport/hospitality management.

**Equivalent Units**

200742 - Sport and Hospitality Event Management

**Incompatible Units**

200579 - Sport Event and Facility Management 200682 - Convention and Special Event Management

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Special Event Management is designed to introduce students to event management in order to develop their skills and knowledge relating to the organisation of various event forms. The unit provides students the opportunity to practically apply management strategies, leadership theories, communication skills, and administration skills to facilitate the design, marketing, communication, innovation and planning of their own event. Careers in the industry can be found across diverse fields in the public and private sectors including hotels, event management companies, exhibition and sports venues, and in community organisations such as clubs, schools and charities.

## 301089.3 Special Technical Project

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Students are expected to have been involved in the project in their 2nd year of study on a voluntary basis.

**Unit Enrolment Restrictions**

Students need to seek approval from the Unit Coordinator to enrol in this unit. Students must have completed 140 credit points or more prior to enrolment and must be enrolled in one of the following courses to enrol in this unit: 3689 Bachelor of Engineering; 3740 Bachelor of Engineering (Honours); 3690 Bachelor of Engineering Advanced (Honours); 3691 Bachelor of Engineering Science; 3727 Bachelor of Building Design Management; 2607 Bachelor of Construction Management; 3692 Bachelor of Construction Technology; 3729 Bachelor of Design and Technology; 3730 Bachelor of Industrial Design; 3731 Bachelor of Industrial Design (Honours).

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This is an elective unit offered to students who are engaged in a School approved project. The unit can be taken during the third year of Engineering, Construction Management and Industrial Design courses. This unit consolidates and deepens a students knowledge and capabilities developed through previous years of study. Students will develop complex solutions by collaborating with various discipline specialists. This unit develops management, reflective and leadership skills including the ability to work with team members from other fields of study through practical application.

## 102379.1 Special Topics in Philosophy

**Credit Points** 20 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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The Special Topics in Philosophy unit engages with current debates and developments in philosophy. These contemporary debates will be contextualized within the historical and conceptual framework of the continental tradition of philosophical inquiry. Engagement with contemporary topics in philosophy and the most recent developments in the field will enable students to find what is innovative and original in their own thought and field of research.

## 301002.3 Specialised Software Applications

**Credit Points** 10 **Level** 7

**Equivalent Units**

300513 - Engineering Software Applications

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course. Please note: Students enrolled in 3693 Master of Engineering must select the campus offering, not the online mode.

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This unit offers several streams of practical applications in engineering and industrial design software. Students get to choose a software application stream depending on their key program. Lectures and assignments are delivered online and are enhanced by face to face contact with stream coordinators. Emphasis is placed on teaching students practical software applications skills relevant to industry needs.

## 200742.2 Sport and Hospitality Event Management

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

This is an advanced unit which assumes basic knowledge of sport/hospitality management.

**Incompatible Units**

200579 - Sport Event and Facility Management; 200682 - Convention and Special Event Management

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This unit will be replaced by 200990 Special Event Management from 2018. An essential part of many sport and hospitality businesses involves the organisation and management of special events and the facilities which host them. Sport and Hospitality Event Management provides this expertise and understanding by giving students the opportunity to practically apply skills and knowledge through the development and execution of their own event. The unit calls for students to apply previously learned management strategies, leadership theories, communication skills, and staff administration to facilitate their event projects.

## 201079.1 Sport and Society

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

A basic understanding of the sport industry

**Equivalent Units**

400335 - Contemporary Issues in Sport Management, 200999 Sport and Society

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Sport plays a prominent role in the lives of many people across Australia and globally. It provides an opportunity for pleasure and a sense of freedom which may be missing in modern society. However, sport is a contested concept and can be a domain which both reinforces and challenges notions such as gender, ethnicity, and nation. This unit explores sport from a sociological perspective, examining the relationship between sport and society, and encourages students to challenge accepted norms and ideologies.

## 200996.1 Sport Entertainment

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

A basic understanding of the sport industry

**Equivalent Units**

200665 - Strategic Communication in Sport 400321 - Sport Management 2 200556 - Communication in Sport

**Special Requirements - Essential Equipment**

Students will be required to have a number of social media accounts for the duration of this unit.

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Sport is now at the heart of many cultures with sport consumption, in a variety of forms, playing a significant role in the lives of many people. This unit explores and explains the sporting experience, providing an understanding of those who consume sport and the relationship between sport, its consumers, and the media. The unit equips students with the tools required to work with the media, producing resources, and to engage with and through social media platforms.

## 200751.2 Sport Management Applied Project

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

An introductory level of knowledge in sport management.

**Prerequisite**

**200707.2** Service Industry Studies

**Equivalent Units**

200580 - Sport Management Applied Project

**Incompatible Units**

200561 - Hospitality Management Applied Project

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This unit provides students a unique opportunity to integrate knowledge gained from operational and theoretical perspectives of sport studies into application in an engaged research project in sport management. Students will engage in comprehensive projects which bring together real world industry problems and sport theory. Students studying Sport Management Applied Project may have the opportunity to undertake an international field trip to experience the sport environment from an international perspective.

## 200664.2 Sport Management Internship

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

An introductory level of knowledge in Sport Management.

**Equivalent Units**

400649 - Professional Practice in Sport Management 3, 400648 - Professional Practice in Sport Management 2, 200576 - Professional Practice in Sport Management

**Unit Enrolment Restrictions**

Students must be enrolled in 2786 B Business, 2787 B Business (ABL), 1818 B Arts/B Business, 1819 B Communication/B Business, 1820 B International Studies/B Business, 2788 B Business/ B Laws, 2789 B Bus (ABL)/B Laws, 2739 B Business and Commerce, 3728 B Engineering (Hons)/B Business, 3737 B Information and Communications Technology/B Business, 2753 B Business and Commerce, 2754 B Business and Commerce (ABL), 3655 B Information and Communications Technology/B Business and Commerce, 3659 B Science/B Business and Commerce, 2740 B Business and Commerce/B Laws, 1688 B International Studies/B Business and Commerce, 1695 B Arts/B Business and Commerce, 1785 B Communication/B Business and Commerce, 3744 B Information Systems/B Business, 3745 B Information Systems Advanced/B Business, 4748 B Science/ B Business

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This unit will be replaced by 200997 Developing Sport Professionals from 2018. Sport Management Internship provides students with an opportunity to engage with the sport industry through a 120 hour industry placement. This unit provides the opportunity to observe practitioners in action and to learn in a practical "hands-on" setting. Experience in the field of study is an essential ingredient in preparing an individual for employment either during the period of study or after graduation. Students have the opportunity to see how knowledge and skills acquired in lectures and tutorials/laboratories can be applied and also relate theoretical concepts and skills to situations in sport or exercise-related settings.

## 200754.2 Sports Management - Planning and Development

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

An introductory level of knowledge in sport management.

**Equivalent Units**

200244 - Sports Management - Planning and Development

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This unit will be replaced by 200998 Strategic Sport Leadership from 2018. With sport professionalism, globalisation, population change and consumer pressure there is a need for government, not for profit and private enterprise to better plan for and provide sport and leisure facilities and services. Sport Management - Planning and Development provides an in-depth study of the planning and development of sport in the Australian context. Throughout this unit there is a focus on managing change to appropriately planning for future sport and leisure needs within a context of public policy. An introductory framework will be provided emphasizing the historical perspectives of sport and leisure and its history and role within contemporary Australian society.

## 301304.2 Start-Up Product Launch

**Credit Points** 10 **Level** 4

**Equivalent Units**

300015 - Design Management 4: Design Process; 301094 - Design Management 4: Strategy and Lean Start-Up

**Special Requirements - Essential Equipment**

Students must be able to utilise the University provided Makerspace, computer labs and specialist software or provide their own computer equipment with working software. An online work safety module must have been completed prior to workshop space use. MakerSpace safety inductions for the workshop may also be required including inductions per apparatus such as laser cutting or 3D printing.

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Students, working in cross functional teams and as individuals, will develop a mature value proposition for validation and launch of a market-ready product or service that includes promotional narratives and artefacts. Students will focus on entrepreneurial innovation and lean start-up models using design-led strategies such as CANVAS modelling, minimum viable product (MVP), and launching in addition to strategies for securing external funding for projects. Students will be well placed to create dynamic adaptive organisation for business, government, wider communities and start-up businesses as career professionals.

## 300991.3 Statistical Hydrology

**Credit Points** 10 **Level** 3

**Prerequisite**

**300983.1** Surface Water Hydrology

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This unit covers the principles of statistical hydrology. It explores at-site flood frequency analysis, regional flood frequency analysis, trend analysis of hydrological data, linear regression analysis and multivariate statistical techniques to solve hydrological problems.

## 401176.1 Statistical Methods in Epidemiology

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

High school mathematics (arithmetic, formulas and algebra, reading graphs)

**Prerequisite**

**401077.1** Introduction to Biostatistics

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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Statistical ideas are integral to the conceptual basis of epidemiology and provide the tools needed to interpret epidemiological information and conduct epidemiological studies. Most professions in the health sciences need to be able to read and interpret statistics relating to individual and

population health status and health risks, and to identify appropriate statistical methods to evaluate interventions, health policies and programs. Many public health practitioners are actively involved in surveillance, quantitative research and/or evaluation. This unit aims to support students to reach a level of proficiency in the selection of appropriate statistical methods to address specific research questions with a given dataset, conduct the selected analysis, interpret the results appropriately and draw valid and insightful conclusions about the research question.

## 200032.7 Statistics for Business

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

HSC Mathematics/Mathematics Extension 1 is desirable.

**Equivalent Units**

200192 Statistics for Science, 300700 Statistical Decision Making, 200263 Biometry, 200052 Introduction to Economic Methods, 301123 Management Analytics, 700007 Statistics for Business (WSTC), 700033 Biometry (WSTC), 700041 Statistical Decision Making (WSTC)

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Statistics for Business introduces the basic concepts and techniques of statistics that are particularly relevant to problem solving in business. It also provides a sound base for more advanced study in statistics and forecasting in subsequent sessions. Topics include: presentation of data; descriptive statistics; the role of uncertainty in business decision making; hypothesis testing; and basic forecasting.

## 300730.4 Steel Structures

**Credit Points** 10 **Level** 3

**Prerequisite**

**300733.2** Introduction to Structural Engineering

**Corequisite**

**300732.2** Structural Analysis

**Equivalent Units**

85014 - Steel Structures

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This unit covers the basic behaviour of steel members and structures, the appropriate methods to analyse them and the design criteria and methods used to proportion them.

## 201083.1 Strategic Brand Management

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Students are recommended to have completed 201084 Customer Insights and 201082 Customer Experience Fundamentals which will provide knowledge of consumer behaviour and market research.

**Prerequisite**

**200083.2** Marketing Principles

**Equivalent Units**

200088 - Brand and Product Management

**Special Requirements - Essential Equipment**

A computer and internet access

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Consumers' brand interaction in the marketplace is shaped by a digital and technology driven marketing environment. Innovative and interactive branding strategies have become the key to a successful marketing strategy. Students learn to strategically create, develop, innovate, position and protect branding in an ever-changing environment to establish a sustainable competitive advantage. Through these industry-related activities, students create a business driven portfolio, which can be presented to potential employers. This unit uses workshop sessions and online activities to create an interactive learning environment and bring the content to life.

## 200665.2 Strategic Communication in Sport

**Credit Points** 10 **Level** 2

**Equivalent Units**

400321 - Sport Management 2, 200556 - Communication in Sport

.....

This unit will be replaced by 200996 Sport Entertainment from 2018. Sport is now at the heart of many cultures with sport consumption, in a variety of forms, playing a significant role in the lives of many people. This unit explores and explains the sporting experience, providing an understanding of those who consume sport and the relationship between sport, its consumers, and the media. The unit equips students with the tools required to work with the media, producing resources, and to engage with and through social media platforms.

## 200587.2 Strategic Management

**Credit Points** 10 **Level** 3

**Prerequisite**

**200571.2** Management Dynamics OR **200912.1** Enterprise Leadership OR **MG102A.3** Management Foundations

**Equivalent Units**

MG302A - Strategic Management

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This unit explores the nature and essence of strategy and how this is created in various organisational, industry and economic contexts. The complexity of the strategy process, content and context means that there is not one clear position on strategy. The impact of this complexity on managers seeking to develop a strategic thinking capability is examined. The paradoxes and debates in the field of strategy are explored in an effort to understand the concept of sustainable competitive advantage. Students will utilise the theoretical knowledge presented in a dialectical enquiry framework to undertake strategic analysis, and develop a selection of strategic options, for case study scenarios and in a team strategy simulation.

## 200087.3 Strategic Marketing Management

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

It is assumed that students have knowledge of basic marketing concepts, theories and frameworks in customer experience, marketing communications and consumer insights.

**Prerequisite**

**200083.3** Marketing Principles

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Customer-centric marketing strategies are vital to capturing competitive advantage and sustaining business success. This unit explores the core concepts and tools of contemporary strategic marketing management. The unit focuses on the skills and framework to develop and manage an integrated marketing strategy that creates value for customers and generates growth for the firm in both online and offline environments. Using a marketing simulation, the unit provides the students the opportunity to make a series of complex, real-world marketing decisions in a competitive environment.

## 200998.1 Strategic Sport Leadership

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

An introductory level of knowledge in sport management.

**Equivalent Units**

200244 - Sport Management Planning and Development
200754 - Sport Management Planning and Development

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In contemporary sport environments, sport practitioners require an in-depth understanding of strategic leadership processes and practices. In order to respond to sport's ongoing professionalisation, globalisation, demographic changes and emerging consumer needs, sport managers and government policy makers require knowledge and skills which will allow them to successfully manage these changes. Students will develop knowledge and skills in areas such as policy development and strategic planning, executive leadership and change management processes and practices.The unit content will be applied across diverse sport environments including high performance sport in not-for profit contexts and community sport with a focus on sport for development. Students will apply their strategic leadership knowledge and skills by formulating a policy or related initiative for a sport agency or organisation.

## 300732.4 Structural Analysis

**Credit Points** 10 **Level** 3

**Prerequisite**

**300733.2** Introduction to Structural Engineering

**Equivalent Units**

85010 - Structural Analysis

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This unit introduces students to the aspects of structural analysis of trusses, beams and frames. It covers the first-order elastic analysis of statically determinate and indeterminate structures. This course aims to teach students to master basic skills in structural analysis as well as skills in using computer software to analyse complex structures.

## 301402.1 Studio: Design Synthesis Capstone

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Experience in using 2D and 3D graphic/modelling software and equipment such as 3D printers, hand tools for model making purposes is highly desirable.

**Special Requirements - Essential Equipment**

Drawing and rendering equipment, A3 Process Diary, A variety of model making materials, USB storage device or external storage device

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This unit engages students in a significant project that synthesises creative thinking, design strategy and practical design skills in preparation to be 'work-ready' as a designer upon graduation. Students will apply the skills that they have acquired throughout their degree in core and specialised elective subjects toward their Design Capstone project. The amalgamation of multidisciplinary viewpoints with industry collaborators throughout the unit ensures a vibrant learning environment, culminating in well resolved design outcomes within a Work Integrated Learning (WIL) Framework with linkages to a real-world challenge.

## 301295.1 Studio: Design Synthesis Capstone

**Credit Points** 20 **Level** 4

**Assumed Knowledge**

Experience in using 2D and 3D graphic/modelling software and equipment such as 3D printers, hand tools for model making purposes is highly desirable.

**Special Requirements - Essential Equipment**

Drawing and rendering equipment A3 Process Diary A variety of model making materials USB storage device or external storage device

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This unit engages students in a significant project that synthesises creative thinking, design strategy and practical skills in preparation to be 'work-ready' as a designer upon graduation. Students will apply the skills that they have acquired throughout the degree in core and specialised elective subjects to their chosen project. The amalgamation of multidisciplinary viewpoints with industry collaborators throughout the process ensures a vibrant learning environment, culminating in well resolved design outcomes.

## 301294.3 Studio: Interdisciplinary Global

**Credit Points** 10 **Level** 4

**Equivalent Units**

300311 - Design Studio 3: Product Realisation; 301083 - Design Studio 5: Symbol and Meaning Making

**Unit Enrolment Restrictions**

Student are required to have completed 120 credit points in any WSU degree.

**Special Requirements - Essential Equipment**

Online work safety module must have been completed prior to workshop space use. Specific requirements regarding machine use may require student safety inductions per apparatus i.e. drill, sander.

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This unit engages students in a collaborative evidenced based project with local and international expert partners including NASA in the thematic area of Designing for Space Missions 2025 for astronaut health and space architecture for habitat design. Students are able to explore new concepts and integrate their skills within teams across unique research domains. The traditional linear thinking of creativity and innovation is challenged, giving way to a dynamic workspace for discussion, exploration, discovery, critical reflective practice, and maker-culture. This leads to new co-created interdisciplinary innovations which assist in the preparation of students for the Future of Work and decision-making across diverse teams. The focus on the physical and psychological aspects of space are also informing new viewpoints in designing with COVID19 in the Built Environment.

## 301329.2 Surface Water Hydrology

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Students need working knowledge of spreadsheet software, for example Microsoft Excel

**Prerequisite**

**300765.3** Hydraulics

**Equivalent Units**

300766 - Hydrology, 300983 - Surface Water Hydrology

**Special Requirements - Essential Equipment**

Laptop with M/S Excel installed – use WSU library borrowing facility, if required.

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Surface water hydrology covers the principles of hydrology as it pertains to surface water component of the hydrologic cycle. The principal focus is on the relationship between rainfall and surface runoff. The extent of flooding resulting from storm events will be evaluated through floodplain delineation process. Successful completion of this unit provides the competencies required to propose sustainable engineering solutions to potential adverse impacts of land-use changes. This unit builds on the hydraulic concepts acquired from the units completed earlier.

## 300983.3 Surface Water Hydrology

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Students need working knowledge of spreadsheet software, for example Microsoft Excel

**Prerequisite**

**300765.2** Hydraulics

**Equivalent Units**

300766 - Hydrology

**Special Requirements - Essential Equipment**

Laptop with M/S Excel installed – use WSU library borrowing facility, if required.

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This unit will be replaced by 301329 Surface Water Hydrology from 2021. Surface water hydrology covers the principles of hydrology as it pertains to surface water component of the hydrologic cycle. The principal focus is on the relationship between rainfall and surface runoff. The extent of flooding resulting from storm events will be evaluated through floodplain delineation process. Successful completion of this unit provides the competencies required to propose sustainable engineering solutions to potential adverse impacts of land-use changes. This unit builds on the hydraulic concepts acquired from the units completed earlier.

## 300738.5 Surveying for Engineers

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

Students need a good knowledgeof Geometry and Trigonometry.

**Prerequisite**

**200237.3** Mathematics for Engineers 1

**Equivalent Units**

85003 - Surveying for Engineering, 700120 - Surveying for Engineers (WSTC AssocD)

**Special Requirements - Essential Equipment**

For practical classes, studentsmusr wear: hat, closed shoes. Students should wear close fitting clothes that are suitable for the outdoors in the Winter / Spring climate.

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This is a core unit which provides students with basic skills that are required to carry-out Surveying. After the completion of this unit, students will be able to carry-out required preliminary surveying for most of the civil and construction engineering projects. This unit will also serve as a foundation for most of the units that follow in the course.

## 700120.4 Surveying for Engineers (WSTC AssocD)

**Credit Points** 10 **Level** 1

**Equivalent Units**

300738 - Surveying for Engineers

**Unit Enrolment Restrictions**

Students must be enrolled in 7022 Associate Degree in Engineering

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This unit provides students with basic skills that are required to carry out surveying. After the completion of this unit, students will be able to carry out required preliminary surveying for most of the civil and construction engineering projects. Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## 300798.4 Sustainability and Risk Engineering

**Credit Points** 10 **Level** 4

**Prerequisite**

**300737.5** Environmental Engineering AND **300983.3** Surface Water Hydrology

**Unit Enrolment Restrictions**

Successful completion of 200 credit points.

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Analysis of sustainability with engineering perspectives is increasingly becoming important in the modern world. Also, often the risk analysis is required to be carried for true sustainable solutions. Engineers with in-depth understanding of different tools that can be used for both sustainability and risk analysis will have significant edge in their future career. The students will discuss and understand various engineering issues including renewable/ alternative energy systems, energy/resource efficiency, sustainable/green buildings, sustainable transport and infrastructure, sustainable water management, environmental management systems, sustainability reporting, life cycle analysis, probability/reliability theory, risk assessment models and, overall system analysis.

## 300939.4 Sustainability and Risk Engineering (PG)

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Engineering problem solving skills.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

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Analysis of sustainability with engineering perspective is increasingly becoming important in the modern world. Also, in the future sustainability will include risk engineering. Hence, engineers with in-depth understanding of different tools that can be used for both sustainability and risk analysis will have significant competitive edge in their future career. The main objective of this unit is to introduce different tools available for sustainability and risk analysis in various engineering applications. The content includes renewable/alternative energy systems, energy/resource efficiency, sustainable/green buildings, sustainable transport and infrastructure, sustainable water management, environmental management systems, sustainability reporting, life cycle analysis, probability/ reliability theory, risk assessment models, overall system analysis.

## 301399.2 Sustainable Construction Materials

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Content covered in Residential Building

**Incompatible Units**

200472 - Material Science in Construction

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This unit focusses on the suitability for purpose (performance, durability, sustainability and standards and regulatory compliance) of building and construction materials. Students investigate the physical properties and behaviour of various timbers, metals, concretes, polymers, new materials and composite systems, and their durability within Australia's diverse environments. Students also consider sustainable and eco-friendly construction materials in life-cycle assessment of construction systems and materials selection at the design stage.

## 301095.2 Sustainable Design 1: Materials and Technology

**Credit Points** 10 **Level** 1

**Equivalent Units**

300304 - Sustainable Design: Materials Technology

**Special Requirements - Essential Equipment**

Students are required to purchase casting material and supplies under the value of $100. Online work safety module must have been completed prior to workshop space use. Specific requirements regarding machine use may require student safety inductions per apparatus i.e. drill, sander.

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From 2020, this unit will be replaced by 301288 - Sustainable Materials and Smart Manufacturing. In this unit we explore materials from a design perspective - their properties, qualities, typical applications, their cost and the environmental impact associated with their extraction, use and disposal. We also look at how they can be formed using contemporary and emerging processing techniques - from sand casting to rapid prototyping. Lectures are supplemented with live demonstrations of materials processing techniques. Students undertake a life cycle materials research project and a design for manufacture (DFM) project.

## 301081.3 Sustainable Design 2: Product Service Systems

**Credit Points** 10 **Level** 2

**Prerequisite**

**301095.1** Sustainable Design 1: Materials and Technology OR **300965.1** Engineering Materials

**Equivalent Units**

300306 - Sustainable Design: Sustainable Futures

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From Spring 2020, this unit will be replaced by 301293 - Designing for Circular Economy (Advanced). This unit

builds students' capacity for systems thinking in the context of designing new products and services. Students will explore contested and emerging sustainability issues, gather evidence of opportunities for change, and then scope out plans for implementing new product service systems. Students will conduct this by researching and modelling some of the current challenges facing socio-ethical, economic and environmental domains. Designers must now go beyond current uses of technology to visualise and plan scenarios of how the world could be. This entails engaging with complex ecological equilibria, and developing system solutions that are acceptable socially and attractive culturally.

## 300304.3 Sustainable Design: Materials Technology

**Credit Points** 10 **Level** 1

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From 2016 this unit will be replaced by 301095 Sustainable Design 1: Materials and Technology. In this unit we explore materials from a design perspective - their properties, qualities, typical applications, their cost and the environmental impact associated with their extraction, use and disposal. We also look at how they can be formed using contemporary and emerging processing techniques - from sand casting to rapid prototyping. Lectures are supplemented with live demonstrations of materials processing techniques and students undertake materials research and a design for manufacture project.

## 300306.4 Sustainable Design: Sustainable Futures

**Credit Points** 10 **Level** 2

**Equivalent Units**

10913 - Environmental Planning 2, 301081 - Sustainable Design 2: Product Service Systems

.....

From 2016 this unit wil be replaced by 301081 Sustainable Design 2: Product Service Systems. If science and planning march under the banner of 'everything is possible', design culture must know how to point out a path for these potential possibilities, a path that can be completely opposed to that which technological-scientific development has followed up to now. This unit explores the challenges facing design culture in which the designer must now provide scenarios that visualise some aspects of how the world could be and, at the same, time, present it with such characteristics that can be supported by complex ecological equilibria, which are acceptable socially and attractive culturally.

## 300998.3 Sustainable Energy Systems

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Basic understanding of the principles and engineering applications of physics in energy systems.

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This unit prepares engineering students to work in the area of renewable energy systems and to be knowledgeable and be in a position to appraise environmental, social, legal, economic and political issues concerned with renewable energy systems.

## 101569.3 Sustainable Futures

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 80 credit points.

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In this unit we will explore the questions ‘can we create a sustainable society? If so what would it look like and how could it be done; is it possible to live ethically with each other and the planet?’ While major contemporary theoretical concepts will be explored the emphasis is on developing sustainable alternatives to the way we now live both locally and globally. Particular attention will be paid to thinking ecologically, postcolonial development and issues of race and gender.

## 301288.2 Sustainable Materials and Smart Manufacturing

**Credit Points** 10 **Level** 1

**Equivalent Units**

300304 Sustainable Design: Materials Technology; 301095 Sustainable Design 1: Materials Technology

**Special Requirements - Essential Equipment**

Access to a computer running SolidWorks and Granta CES Edupack.

.....

In this unit we explore the circular ‘Cradle to Cradle’ design philosophy through material choice and manufacturing systems. Introduced are conventional materials, smart materials, and manufacturing systems within an ecological assessment framework, equipping designers with the tools to select and assess materials and manufacturing processes appropriate to use. Students undertake a life cycle materials research project and a design for manufacture (DFM) project in the context of emergent Industry 4.0 principles.

## 301003.3 Sustainable Systems

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course

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This unit teaches students the essential tools available to achieve environmental sustainability in various engineering/ construction/industrial design professional settings. The focus of the unit is on the application of the tools and exploration of Australian regulatory and sustainable development practices.

## 300167.5 Systems Programming 1

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

This unit requires a knowledge base of at least the level of a completed first year in a professional Computing degree. Ability to apply fundamental concepts in data structures, algorithms, programming principles will be assumed.

**Prerequisite**

**300581.4** Programming Techniques OR **300903.1** Programming Techniques (Advanced) OR **300582.3** Technologies for Web Applications OR **300147.4** Object Oriented Programming OR **300027.2** Engineering Computing AND **300018.2** Digital Systems 1

**Unit Enrolment Restrictions**

Students in Bachelor of Engineering, Bachelor of Engineering (Advanced) or Bachelor of Engineering Science must be enrolled in one of the Key Programs attached to the course.

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This unit provides an introduction to the knowledge and skills required for the design, writing and support of technical software and other such functions normally falling within the role of the systems programmer. It provides for detailed study of a systems programming environment and its application to systems programming tasks.

## 301088.3 Tangible Interaction Design

**Credit Points** 10 **Level** 2

**Prerequisite**

**300570.3** Human-Computer Interaction

**Special Requirements - Essential Equipment**

Online work safety module must have been completed prior to workshop space use. Specific requirements regarding machine use may require student safety inductions per apparatus i.e. drill, sander.

.....

This unit will provide students with the capacity to create interactive products that can sense environmental stimuli and exhibit an appropriate yet intelligent response. Students will be expected to write script based programs to control hardware circuits connecting various Input/Output peripherals (sensors, actuators). The range of interactive products studied and built by the students will be diverse; ranging from household everyday products to artifacts that can be used in public spaces.

## 300976.2 Technologies for Mobile Applications

**Credit Points** 10 **Level** 2

**Prerequisite**

**300580.2** Programming Fundamentals

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This unit introduces students to the technologies used to develop and deploy mobile applications. The unit covers evaluating organisational needs in the mobile space, responsive web design, web technologies, interface challenges, location awareness, cloud services and data storage.

## EY101A.1 Terrestrial Environment Management

**Credit Points** 10 **Level** 1

**Equivalent Units**

300663 - Resource Sustainability

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This unit includes lectures, seminars, group discussions and field activities pertinent to catchment management, landuse and environmental impacts. Content covers mapping spatial data management, impact assessment, State of the Environment reporting, rapid appraisal techniques, Ecologically Sustainable Development, using science as a tool, teamwork, analysis and critical reflection. It also involves the integration of the biophysical environment with the investigation of the impacts of man and implications of the socio-political interface.

## 700167.2 Tertiary Study Skills in Construction Management (WSTC Prep)

**Credit Points** 0 **Level** Z

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College.

.....

This unit is designed to assist students to become successful independent, reflective, lifelong learners. It introduces students to a range of theories and concepts to facilitate the development of practical skills and personal attitudes necessary for success in tertiary study and the workplace.

## 700169.2 Tertiary Study Skills in Engineering (WSTC Prep)

**Credit Points** 0 **Level** Z

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney University, The College.

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This unit is designed to assist students to become successful independent reflective learners. It introduces students to a range of theories and concepts to facilitate the development of practical skills and personal attitudes necessary for success in tertiary study.

## 200993.2 The Accommodation Industry

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

A basic understanding of the core concepts of hospitality

**Equivalent Units**

200709 - Managing the Accomodation Experience 200144 - Managing the Accomodation Experience

.....

The Accommodation Industry is concerned with developing skills for managing people, operations and business in hotels and hospitality companies. It focuses on the business operations and management issues to be found in successful lodging enterprises. The unit incorporates the application of key aspects of marketing, service management, financial management, revenue management and business development within a hospitality context. It develops effective problem solving and critical thinking skills necessary to meet the service industry's ever-changing needs. Students can expect to find employment in a range of domestic and international accommodation management facilities such as hotels, resort groups, cruise ships and the accommodation sector.

## 200549.3 The Australian Macroeconomy

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

HSC Mathematics

**Equivalent Units**

200049 - Macroeconomics

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This unit is an introduction to macroeconomic concepts, analysis and issues in the Australian context. Basic concepts introduced and applied include: national income accounting, economic structure, price indexes and inflation, the balance of payments, and labour market aggregates. These concepts are applied in describing and explaining the recent evolution of the Australian economy in terms of growth, structural change, price stability, and employment. This leads to a discussion of major policy issues such as the role of governments in managing economic fluctuations, and the implications of Australia's foreign liabilities. The course ends with a brief introduction to modelling income determination.

## 101009.4 The Body in Culture

**Credit Points** 10 **Level** 3

**Equivalent Units**

SS224A - Gender, Culture and the Body, 100286 - The Body in Culture

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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This unit introduces students to key theorists, concepts, and debates in socio-cultural studies of embodiment. The first module introduces the field of study and explores influential perspectives on bodies as biocultural and social. The unit explores topics such as the social brain, culture and the senses, the modern ‘civilised’ body, sexed and racialised bodies, ableism and bodily diversity. It will demonstrate how even colonialism, multiculturalism and socio-economic inequalities are lived on the skin, in the body and through the senses. The second module explores current debates and body politics and the content is determined in collaboration with enrolled students. The topics can be as diverse as digital self-tracking; ‘fat wars’; race and cosmetic surgery; bodies as commodities, and; sexual difference and sport.

## 200988.2 The Business of Hospitality

**Credit Points** 10 **Level** 1

**Incompatible Units**

200273 - Managing Service and Experience

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The Business of Hospitality employs a case study approach to examine successful hospitality operations and develop an understanding of what is required to plan, design, deliver and manage engaging hospitality experience as the foundation of prosperous hospitality operation. In considering the broader context of the hospitality industry, students will be given the opportunity to explore where they may fit within a hospitality context.

## 101591.3 The Economics of Cities and Regions

**Credit Points** 10 **Level** 2

**Equivalent Units**

101298 - Urban Development Resource Allocation

.....

'Economics of cities and regions' introduces the major political-economic issues facing cities and regions. Class discussions investigate how political-economic forces (such as globalisation, structural change etc) shape the development of cities and regions. Class activities enable students to apply economic principles to urban and regional planning and policy decisions, and teach students to analyse the social and distributional impacts of policy and planning decisions.

## 102584.1 The Image of Thought: Art, Film and Philosophy

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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Working on the assumption that art is capable of exploring philosophical issues in its own right, the unit considers how various arts from poetry to contemporary film help shape our understanding of things like metaphysics, epistemology, ethics and morality.

## 101757.2 The Making of the `Aborigines'

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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This unit is available to all undergraduate students who have open electives. The Making of the 'Aborigines' explores the complex human relations and historical forces that have constructed Australia's indigenous people as

'Aboriginal' and/or 'Torres Strait Islander'. It will involve a critical examination of a range of contemporary social and political issues impacting on and being engaged by Indigenous people. A more comprehensive understanding of the position of Indigenous people in contemporary Australian society will enable students to engage more effectively with Indigenous people.

## 200098.4 The Markets of Asia

**Credit Points** 10 **Level** 3

**Prerequisite**

**200911.1** Enterprise Innovation and Markets

**Equivalent Units**

61751 - Regional Market Study (Asia)

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Markets of Asia focuses on internationalisation and global competitiveness of organisations in the Asian region. The unit also encourages an appreciation of cultural diversity, and develops students' knowledge and skills so that upon completion of this unit, they will understand the relevant business practices needed to be responsive to enterprise opportunities and threats within this global community.

## 101990.1 The Racial State

**Credit Points** 10 **Level** 2

**Equivalent Units**

100273 - New Ethnicities, Old Racisms

**Unit Enrolment Restrictions**

Successful completion of 40 credit points of study in currently enrolled course.

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Racism is often thought of as both primordial and pathological. Racist states, such as Apartheid South Africa or Nazi Germany, are usually considered to be exceptions rather than the rule and mainly a thing of the past. This unit examines the ways in which, despite the challenge to racism, race remains a fundamental organising idea in modern western states, one that has a direct affect on our everyday realities. We will examine how race is reproduced through politics, culture, socialisation and economic structures. We will consider the effects this has on individual and societal lived experience in complex post-immigration, postcolonial societies.

## 200915.3 The Service Enterprise

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Students should have a foundation knowledge of business markets and enterprise structure.

**Equivalent Units**

200376 - Managing and Developing Careers, 200914 - Working in Professions, 200090 - Marketing of Services

**Unit Enrolment Restrictions**

Successful completion of 60 credit points.

.....

Modern economies are increasingly service-based. Knowledge and skills in the field of services are required by people operating across various industries and in a range of roles. Business graduates will either work for firms whose central offering is service or be employed by organisations that use service as an integral supporting element in what they do and what they offer. The unit aims to expose students to relevant theory and practices in order to develop their abilities for potential career opportunities in a service environment.

## 201000.1 The World of Sport Business

**Credit Points** 10 **Level** 1

**Equivalent Units**

200705 - The World of Sport Management 400319 - Sport Management 1 200564 - Introduction to Sport Management

.....

The World of Sport Business offers students a contemporary view of sport organisations which are uniquely situated within fluid and emergent social, cultural and political environments and necessitate unique/different managerial approaches. Students will explore key issues within the domestic and international sport management field including, but not limited to, sport professionalisation and commodification, globalisation and sport for development. Students will be introduced to sport leadership theories and practice, sport and its management as a context for ethical analysis, and approaches to sport marketing and promotions in the contemporary sport business context.

## 200705.2 The World of Sport Management

**Credit Points** 10 **Level** 1

**Equivalent Units**

400319 - Sport Management 1, 200564 - Introduction to Sport Management

.....

This unit will be replaced by 201000 The World of Sport Business from 2018. The World of Sport Management offers a contemporary view of sport organisations which are uniquely situated within a broader social, cultural and political environment and requires a different managerial approach. Students will be exposed to key areas within the sport management field including developing goals, decision making, strategic planning, leadership styles, and human resource management.

## 102615.1 Theoretical Philosophy

**Credit Points** 20 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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Theoretical Philosophy focuses on theories of knowledge, theories of being, and systems of thought. While it is traditionally described under the heading of epistemology and metaphysics, theoretical philosophy should be more broadly understood as devoted to philosophical investigations into the underlying systems, theories, and

presuppositions upon which any account of the world, experience, or even truth has been built. This unit will be devoted to an explication of either thematically related theoretical investigations, such as, for example, '17th-century theories of matter,' or 'the nature of language,' or it will focus instead on one central philosophical figure, e.g., 'Plato's metaphysics of the soul,' 'Kant's system of transcendental idealism,' etc.

## 300759.4 Thermal and Fluid Engineering

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

Fundamentals on Fluid Mechanics, Thermodynamics, and Heat Transfer

**Prerequisite**

**300762.1** Fluid Mechanics AND **300760.1** Thermodynamics and Heat Transfer

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The unit provides an understanding of thermo-fluid principles and their engineering applications related to thermal processes and energy conversion used in power plants, heat pumps, wind turbines, and airplanes. Students analytical skills are developed through the evaluation of laminar, turbulent and compressible fluid flows, as well as combustion processes and products. Students are introduced to special thermal and fluid engineering topics, including alternative energy options for Indigenous Australians. In addition to examining the theoretical principles, students evaluate thermodynamic systems and apply basic computational techniques to solve thermodynamics and fluid flow problems in practical laboratory sessions.

## 300760.4 Thermodynamics and Heat Transfer

**Credit Points** 10 **Level** 3

**Prerequisite**

**200238.1** Mathematics for Engineers 2 AND **300963.1** Engineering Physics OR **300464.2** Physics and Materials

The pre-requisite unit 200238 does not apply for 3771. Studying Thermodynamics and Heat Transfer needs the knowledge of Mathematics The pre-requisite units 300963 or 300464 do not apply for 3771. Understanding basic laws of physics is the foundation of thermodynamics and heat transfer

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This unit introduces students to the fundamentals of thermodynamics which involves energy in the form of heat and heat transfer. Students explore the basic laws and properties of thermodynamics to discover how energy is converted and transferred. Students will apply their knowledge to evaluate power and refrigeration cycles, industrial devices, as well as to design a simple industrial device.

## 700312.1 Thermodynamics and Heat Transfer (WSTC AssocD)

**Credit Points** 10 **Level** 3

**Prerequisite**

**700153.3** Engineering Physics (WSTC AssocD) AND **700101.3** Mathematics for Engineers 1 (WSTC AssocD)

**Equivalent Units**

300760 - Thermodynamics and Heat Transfer

**Unit Enrolment Restrictions**

Students must be enrolled at Western Sydney, The College in 7022 Associate Degree in Engineering.

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This unit introduces students to the fundamentals of thermodynamics which involves energy in the form of heat and heat transfer. Students explore the basic laws and properties of thermodynamics to discover how energy is converted and transferred. Students will apply their knowledge to evaluate power and refrigeration cycles, industrial devices, as well as to design a simple industrial device.Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

## 101989.1 Thinking Cinema

**Credit Points** 10 **Level** 2

**Equivalent Units**

101856 - Film and Philosophy

**Unit Enrolment Restrictions**

Successful completion of 40 credit points of study in currently enrolled course.

.....

Through close examinations of key philosophical and theoretical writings on film, this unit considers the many ways in which cinema has been 'thought' throughout its short history. Incorporating ontological, phenomenological, psychoanalytic, poststructuralist, cognitivist and other approaches, the unit explores the ways in which key philosophical and theoretical concepts have been taken up and addressed by film, in addition to considering the ways in which cinema can be seen to 'think' for itself.

## 300739.4 Timber Structures (UG)

**Credit Points** 10 **Level** 4

**Prerequisite**

**300733.2** Introduction to Structural Engineering

**Corequisite**

**300732.2** Structural Analysis

**Equivalent Units**

85015 - Timber Structures (UG)

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Students learn about the engineering properties of timber and assess it as a construction material. Design methods

based on structural mechanics are covered including the design of members and connections.

## 102383.1 Topics in the History of Philosophy

**Credit Points** 20 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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This unit surveys selected philosophers or philosophical movements in the history of philosophy, and of the relevance of such philosophical perspectives for contemporary debates. The unit will include a selection of material that will give students a deeper understanding of the history of philosophy from Ancient Greece to the present day.

## 200008.7 Torts Law

**Credit Points** 10 **Level** 2

**Corequisite**

**200006.2** Introduction to Law OR **200977.3** Fundamentals of Australian Law

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The unit introduces students to the legal principles and policy of a variety of torts, defences and remedies. The unit also introduces students to the generic legal skills of case reading and, analysis and note taking, statutory interpretation and legal problem solving, as well as placing the law in the wider political and social context.

## 101848.1 Transnationalism and Migration

**Credit Points** 10 **Level** 3

**Equivalent Units**

101687 - Transnational Migration

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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In 2021 this unit replaced by 102862 - Migration and Social Change. This unit discusses theories of migration, transnationalism, globalisation, diaspora and identity. We examine the experience of migration and settlement, and the transnational cultural forms that emerge in this process. We investigate the role of new means of communication such as the internet in connecting migrants and the homeland. We also analyse how religion supports migrants in the process of homebuilding. Finally, this unit also discusses the descendants of migrant who have 'returned' to the homeland after living abroad for generations. Do they become minorities in their ancestral homeland despite their presumed ethnic similarities with the host population?

## 101645.3 Transport, Access and Equity

**Credit Points** 10 **Level** 3

**Equivalent Units**

400342 - Transport, Access and Equity

**Unit Enrolment Restrictions**

Successful completion of 80 credit points.

.....

This unit examines the equity and efficiency issues in the provision of transport in cities and regions from a critical social science perspective. Issues of transport disadvantage and policy and planning responses to improve access to urban services are examined. The social and environmental impact of transport systems are considered in the context of urban management.

## 300982.4 Transportation Engineering

**Credit Points** 10 **Level** 4

**Prerequisite**

**300738.3** Surveying for Engineers AND **300984.1** Pavement Materials and Design AND **300983.1** Surface Water Hydrology

**Incompatible Units**

300486 - Infrastructure Engineering

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This unit provides students with the course material that will assist them with the execution of Civil Engineering Construction and Urban Development / Town Planning projects. The unit mainly focuses on the planning, design and construction of transportation facilities for urban and rural areas. Students will have an opportunity to implement the skills learnt using a case of a subdivision development.

## 300812.2 Understanding Landscape

**Credit Points** 10 **Level** 1

**Equivalent Units**

300642 - Understanding Landscape, HT103A - Understanding Landscape

**Special Requirements - Essential Equipment**

Enclosed footwear

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This unit explores the historical and cultural perceptions and perspectives of the term ‘landscape’ and the sustainability and management of landscapes. Students become familiar with the terminology and concepts surrounding the natural landscape experientially through a series of field trips and develop an awareness and appreciation of both of the conceptual and actual landscape issues. Skills in mapping and spatial awareness skills and technologies will be developed through field trips and workshop sessions including GIS. Such skills will assist in developing a capacity to comprehensively describe and analyse the landscape.

## 101731.3 Understanding Power

**Credit Points** 10 **Level** 3

**Equivalent Units**

100970 - Understanding Power

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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This unit aims to explore contemporary understandings of power and its various manifestations in the modern world. Numerous themes are considered including informal and formal mechanisms of power, the uses and abuses of power, resistance, plus various examples of "powered" sites. The unit examines the relation between power, violence and the state. The unit concentrates on a few, influential theorists of power. Particular attention is paid to how power has an impact on the production of culture.

## 102601.1 Understanding Race

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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What is race? What is racism? How are they related? Why do they continue to shape social, political and economic relations well after the biological concept of race was disproven? What are the links between race and colonialism and in Australia particularly, the invasion and settlement of Aboriginal land? How is race related to property? How do ideas of race become embedded in state institutions and why do they continue to shape disadvantage and inequality? Though race develops differently in different contexts, it is best thought about through relational readings that draw out both the differences but also the similarities between places and times. This unit will draw on race critical and decolonial texts to focus on race as a modern idea that is shaped in the contexts of colonialism, slavery, and persists in post-immigration multicultural societies.

## 101979.1 Understanding Visual Culture

**Credit Points** 10 **Level** 1

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Visual media are a major feature of everyday life in contemporary society. The circulation of images shapes our sense of who we are individually and collectively; how we move through the world; and the possibilities that exist for enacting social change. This unit introduces students to the histories and theories of visual culture, from painting and photography, through cinema and television, to digital media, including social media and user-generated content. Students will gain practical skills in analyzing visual and audiovisual texts as well as a comprehensive understanding of the role of visual culture in the production and maintenance of power relations. These skills are crucial to engaging critically with contemporary culture.

## 100291.5 Urban Life/Urban Culture

**Credit Points** 10 **Level** 2

**Unit Enrolment Restrictions**

Successful completion of 40 credit points of study in currently enrolled course.

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Big cities can be frantic, difficult, polluted and often dangerous places in which to live. Yet cities also contain possibilities for social and cultural stimulation not available elsewhere. This unit traces the origins and development of modern cities in all of their complexity. It looks at how industrial cities emerged in Europe and Australia, and at the threat that uncontrolled urban growth posed to social order. We examine the conditions of urban life that promote alienation and anonymity, and how people overcome social fragmentation. There is discussion of modern cities - from those that sprawl, like Sydney, to the relatively compact and dense centres of Europe, the north-eastern United States and Asia. We look at the gendered nature of public space, and how class and ethnic tensions are played out in cities. Students read a range of texts on urban culture and society. These include classic works by writers like Friedrich Engels, George Simmel and Walter Benjamin, to the contemporary work of David Harvey, Richard Sennet and Mike Davis.

## 101314.4 Urban Management Practice: Governance and Power in the City

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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Governance is a central but often overlooked issue in Urban Management. What is governance? What are the principles of good governance? What are some of the governance challenges in major metropolitan cities that cover multiple jurisdictions? How do statutory local governments engage with specialist state agencies in fields such as economic development, environmental planning, and infrastructure planning? This unit answers these questions, reviews governance practices in major cities across the world and provides students with knowledge of key governance tools. Students will prepare a research report dealing with a significant urban governance challenge, and provide recommendations about how to implement solutions to that challenge. The central objective of the course is to provide students with a sound framework and set of tools with which to address governance issues.

## 101898.1 Violence in Everyday Life

**Credit Points** 10 **Level** 3

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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The unit provides an overview of the 'dark side' of human society and culture - violence. It examines how violence shapes, threatens and informs aspects of everyday life at home, work, school, the sports field and the street. Through a series of structured learning activities students engage with a range of documents and images to explore practices and experiences of violence. The role of institutions like the state, churches and sporting bodies in regulating violence will be considered. Students will gain skills in understanding the cultural milieu of marginal groups, languages of power

and the emotions of excitement, fear and terror produced by acts of violence, skills useful for effective functioning in the workplace and family. The unit provides skills for honours level research in social and cultural analysis, law and legal studies, criminology, and history and political thought.

## 300994.3 Waste Management

**Credit Points** 10 **Level** 4

**Prerequisite**

**300737.3** Environmental Engineering

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Sustainable waste management, to reduce climate impact, is an important consideration for any student who is getting trained as an engineer. In this unit students will identify and characterise sources of atmospheric, solid and hazardous waste generated from the community. Students will then focus on sustainable management of waste incorporating minimisation, recycle, recovery and disposable options as well as greenhouse gases and their impact on climate change.

## MG309A.2 Water and Waste Management

**Credit Points** 10 **Level** 3

**Assumed Knowledge**

This unit will build upon knowledge and skills gained in Year 1 and Year 2 Microbiology and Chemistry units

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Water is arguably the most important natural resource in the world, since without it life cannot exist and industry cannot operate. Unfortunately, the liquid and solid wastes from anthropogenic activities continually jeopardise water quality and the environment. This unit will develop and integrate physical, chemical and biological process understanding of water pollution and waste management. The biotechnology of nutrient transformation in waste treatment, waste minimisation and value-added opportunities will be emphasised.

## 300992.3 Water and Wastewater Treatment

**Credit Points** 10 **Level** 4

**Prerequisite**

**300737.3** Environmental Engineering AND **300765.2** Hydraulics

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The unit focuses on design of conventional and advanced water and wastewater treatment unit design using fundamental science and hydraulic engineering principles.

## 300740.1 Water Engineering

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

200238: Mathematics for Engineers 2

**Prerequisite**

**200237.1** Mathematics for Engineers 1 AND **300464.1** Physics and Materials

**Equivalent Units**

85009 - Water Engineering

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The unit provides a working knowledge on the basic principles of fluid flow and covers the general principles of engineering hydraulics. The theories learned in classes will be reinforced in laboratory sessions

## 300993.3 Water Resource Engineering

**Credit Points** 10 **Level** 4

**Prerequisite**

**300765.2** Hydraulics

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This unit introduces optimisation theories applicable to water resources projects. The unit applies different optimisation models to select the best option available. Engineering economic theories specifically applicable to water resources projects are also discussed.

## 300734.1 Water Resources Engineering (UG)

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

300479 - Drainage Engineering

**Prerequisite**

**300740.1** Water Engineering

**Equivalent Units**

85020 - Water Resources Engineering (UG)

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This unit introduces aspects of engineering that relate to water as a resource. It builds on the knowledge gained in Water Engineering and Drainage Engineering. This unit will enable students (a) to appreciate major water resource issues around the globe, (b) to understand the social, physical and economic issues involved in distribution, supply and use of water to industry, agriculture and private households; and (c) to understand the need for holistic approaches in planning of water resources projects

## 301012.3 Water Resources Systems Analysis

**Credit Points** 10 **Level** 7

**Assumed Knowledge**

Discounting techniques, time value of money, equivalence analysis, present worth analysis, annual worth analysis, benefit-cost analysis, net benefit analysis, rate of return. Fluid properties, hydrostatics, open channel flow analysis, pipe network analysis, analysis and design of hydraulic structures, exposure to surface water hydrology and its components, water quality analysis.

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate Engineering program undertaking a Civil Engineering specialisation.

.....

Water resources projects are large infrastructure projects requiring huge capital expenditure. In addition, multiple

options are usually available to meet the project goals but at different costs and under varying constraints. This unit presents the application of optimisation techniques to select the best project from a list of competing projects. Applications of these techniques to optimally allocate available water resources are discussed. These are presented within the context of maximising the return of investment.

## 301424.1 Water Supply Systems Design

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

A basic knowledge in chemistry and physics is desirable.

**Prerequisite**

**300737.6** Environmental Engineering OR **301418.1** Sustainable Engineering Fundamentals AND **300762.4** Fluid Mechanics

**Corequisite**

**300765.4** Hydraulics

**Equivalent Units**

300992 Water and Wastewater Treatment

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In this unit students will examine the quality of water and the standards to be met for the supply of water that is fit for its intended use. The design of treatment processes to meet these standards as well as principles underlying the hydraulic design of the treatment systems are examined in the context of both urban and remote rural communities. Students will also explore alternative supply systems and their merits and demerits, including economic viability, in order to gain design and analysis skills with respect to various water supply systems.

## 101922.1 Web and Time-based Design

**Credit Points** 10 **Level** 1

**Assumed Knowledge**

Introductory level understanding of and skills in design principles particularly basic layout, colour and typographic knowledge. Digital basics including working in a networked environment on a Macintosh computer. Ability to manage, transport and store digital information.

**Equivalent Units**

101180 - Web and Time-based Design, 700187 - Web and Time-based Design (WSTC)

**Special Requirements - Essential Equipment**

Digital Storage (USB or external hard drive or DropBox)

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Students will develop fundamental computer software skills and design understandings appropriate to using major web and time based design technologies such as HTML and CSS. They will develop a working understanding of production literacies for online design and time-based design. Students will engage in practical studies of web authoring. Emphasis will be placed on understanding the roles, functions and features of key screen based technologies, design production context for online delivery, current industry best practices, and a working understanding of the responsibilities inherent in the digital design and production process.

## 102585.1 What is Islam?

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in a postgraduate course.

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The 'Muslim question' has been a topic of interest to Western scholarship for over four hundred years. The unit addresses this question in two ways: firstly, by exploring internal historical conceptualisations of the faith-identity of Islam, and examining how these have shaped modern understandings of Islam from within the faith; secondly, by introducing students to multidisciplinary approaches to the study of Islam and inviting them to consider the construction and deconstruction of Islamic Studies as a field of study at various stages of history. The unit provides students with the opportunity to gain increased awareness of both debates within the field and those that scrutinise the field, that is, becoming comfortable with interrogating the cluster of theoretical and methodological strategies for scholarly inquiry into the study of Islam.

## 101010.3 What is the Human?

**Credit Points** 10 **Level** 3

**Equivalent Units**

SS216A - What is the Human?

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of study in currently enrolled course.

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This unit examines theories of human nature from a variety of historical and disciplinary perspectives. It engages with, and encourages the student to evaluate, conceptions of the human - some of which have had wide currency in the broader culture and some which have not. The unit also engages the idea of whether a unified conception of human nature is tenable at all.

## 300065.7 Wireless Communications

**Credit Points** 10 **Level** 4

**Assumed Knowledge**

Students should have a good understanding of signals and systems, probability and random processes and fundamentals of communication systems.

**Prerequisite**

**300007.2** Communication Systems OR **300997.1** Data Communications

**Equivalent Units**

300017 - Digital Communication Engineering

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The unit covers the analysis, design and operation of modern wireless communication systems. The primary focus is on the physical layer and hardware, emphasizing the fundamentals of coding and modulation, spread

spectrum and multiple access techniques. Current wireless architectures and mobile communication systems are also covered.

## 200914.1 Working in Professions

**Credit Points** 10 **Level** 2

**Equivalent Units**

200376 - Managing and Developing Careers, 200915 - The Service Enterprise

**Unit Enrolment Restrictions**

Successful completion of 60 credit points of Business units.

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Working in Professions focuses on developing career understandings and appreciating the personal attributes required for employability in the 'real world' of accounting, banking, economics, finance and property. This is a professional unit in the Bachelor of Business, but is also open to participants with an interest in examining and developing their knowledge of employability in these career areas. The unit involves examination of the evolving nature of work in a dynamic globalised context; applied labour market and industry structure analysis; and an exploration of employability attributes, capacities and opportunities across a range of career paths. Successful completion of the unit allows participants to gauge employer expectations, and to identify and reflect on career opportunities in their chosen fields.

## 102500.2 Writing and Form

**Credit Points** 10 **Level** 7

**Equivalent Units**

102259 - Search (Translation)

**Unit Enrolment Restrictions**

Students must be enrolled in 1831 Master of Arts in Literature and Creative Writing or 8083 Bachelor of Research Studies

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Literature has always involved playing with language and shaping words into specific forms. The European avant-gardes of the 1910s, 20s and 30s set out to sweep aside traditional forms and valued kinds of playing that many authorities of the day regarded as childish. This unit will examine the interactions of play and form in experimental writing. It will explore the ways in which literary experimentation can be constructive as well as iconoclastic. It will also locate fruitful points of contact between literature and scientific knowledge, using the idea of searching or quest (for meanings and forms) as a guiding metaphor. While focus from year to year might change the unit has focused, for example on the work of the Surrealists and the Oulipo group.

## 800219.2 Writing Beyond the Academy: Knowledge Translation and Public Audience Communication

**Credit Points** 10 **Level** 4

**Equivalent Units**

800167 - Research Literacies

**Unit Enrolment Restrictions**

Students must be enrolled in 8083 Bachelor of Research Studies/Master of Research or 8119 Bachelor of Research Studies/ Master of Research (Planning) or 4698 Master of Health Science, 4700 GD Health Science or 4702 Master of Public Health.

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It is now more important than ever for researchers to explain their research to the public. Although it can be challenging to translate specialist knowledge for non-specialist readers, this is the skill students will receive training for in Writing Beyond the Academy. By following the model of The Conversation, a widely popular knowledge translation platform, students will learn the principles of public audience writing, how to pitch to an editor and how to work with their feedback, and produce their own public audience essay.

## 401086.1 Writing for Publication

**Credit Points** 10 **Level** 7

**Unit Enrolment Restrictions**

Students must be enrolled in postgraduate course and must have successfully completed 60 credit points at Level 7.

**Special Requirements - Essential Equipment**

Access to the internet and a computer

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This unit is about writing for publication in the scholarly health and welfare literature. Students will investigate: the range of publications available and the media through which they are delivered; the process of publishing, the key people involved and their roles; the means by which quality is assured in the publishing process and the ways publications are rated for quality and impact; and the influence of social networking media on publishing. Specifically, the influence of online publishing will be investigated. Students will also gain experience of writing for publication under the guidance of an experienced editor and colleagues from the publishing industry. The unit is also available as an elective to all Postgraduate students in the University.

## 102501.2 Writing, Sounds, Images, Texts

**Credit Points** 10 **Level** 7

**Equivalent Units**

102260 - Display (Sounds, Images, Text)

**Unit Enrolment Restrictions**

Students must be enrolled in 1831 Master of Arts in Literature and Creative Writing or 8083 Bachelor of Research Studies.

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This unit will involve a reflection on practice-based research in the arts. It will involve a consideration of how various art-forms might interact and inform one another. There will, then, be a focus on interdisciplinary interaction in the arts: across music, visual arts, and writing, with a strong interest in the potentials of new media. Throughout we will make

comparisons with the relationship between sound and text in film, and in the media more broadly.

## 100298.3 Youth Cultures and Moral Panics

**Credit Points** 10 **Level** 2

**Assumed Knowledge**

Satisfactory understanding of key issues and concepts of first year core units.

**Unit Enrolment Restrictions**

Successful completion of 40 credit points of study in currently enrolled course.

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Young people have long been the focus of social fears. Public figures regularly express concern about the disorder created by unruly youths, or the effects of change on young people. This is the case in relation to popular music, 'youth gangs', new technologies and other areas. This unit will consider how young people became defined as a problem by politicians, policy, the media and others. Resulting 'moral panics' represent social anxieties around economic, social and technological change, producing calls for 'solutions' which often entail repressive laws or policing. Students will examine a range of case studies from Australia and elsewhere.

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