

College of Health and Science

Electronic Undergraduate Handbook 2011

University of Western Sydney

ISSN 1444-7770

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About the College of Health and Science Electronic Undergraduate Handbook

Sessions and dates

There are two main sessions in 2011: Autumn and Spring. Weeks shown in the dateline refer to the session weeks for these main sessions.

The dateline is available at:

<http://www.uws.edu.au/students/stuadmin/dateline>.

Unit outlines

Brief outlines of all UWS undergraduate units listed in the course section are given 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 UWS website for more recent information. For more information – details of textbooks, assessment methods, tutorial, group work and practical requirements – contact the unit coordinator.

More information on unit offerings can be found at:

http://handbook.uws.edu.au/hbook/UNIT_SEARCH.ASP.

Unit not listed?

If the unit you are looking for is not in the alphabetical units section, consult your course coordinator for details or check the unit search web page for updated details on all units offered in 2011 at:

http://handbook.uws.edu.au/hbook/UNIT_SEARCH.ASP.

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.

Academic credit

In most courses, academic credit will be granted for previous studies. For example, UWS has a number of agreements with TAFE to grant credit for successfully completed TAFE studies. Seek advice about credit prior to, or at enrolment.

Electives and cross-discipline study

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

Also, UWS 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 College of Health and Science undergraduate courses. The next part contains details of undergraduate unit sets in these courses, and the final part has details of all units within the courses.

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

The 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 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 course and unit offerings can be found at:

<http://handbook.uws.edu.au/hbook/>

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COLLEGE OF HEALTH AND SCIENCE**Bachelor of Applied Science (Honours)
Occupational Therapy****4521.2**

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 2010 or later.

Occupational therapy is a client centred process that facilitates an individual's performance in chosen life roles and every day tasks across the lifespan, within diverse social, cultural and physical environments. This program views occupational therapy as the practice of using occupation as a therapeutic means to optimise an individual's health, well being and quality of life. Throughout their lives, people have the right to actively choose and participate in occupations which add meaning, purpose and value to everyday life, regardless of ability, age, gender ethnicity beliefs and/or other status. The UWS occupational therapy program promotes the value of human diversity, fundamental human rights and the dignity and worth of every client.

Study Mode

Four years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Accreditation

The course is fully accredited with Occupational Therapy Australia. It is also a World Federation of Occupational Therapists (WFOT) approved course.

Course Structure

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below. Students in the embedded Honours program undertake different units in fourth year, as outlined below.

Recommended Sequence**Full-time****Year 1****Autumn session**

400130.1	Human Medical Sciences 1
400160.2	Introduction to Occupational Therapy
400732.1	Communication in Health
400733.1	Occupational Analysis

Spring session

400134.1	Human Medical Sciences 3
400136.1	Introduction to the Psychology of Health

400137.1	Introduction to Research for Health Sciences
400907.1	Occupational Therapy Practice 1

Year 2**Autumn session**

400164.1	Introduction to Sociology of Health
400138.2	Pathophysiology 1
400148.2	Quantitative Research
400734.1	Functional Analysis

Spring session

400964.1	Clinical Neurosciences
400167.1	Occupational Therapy Clinical Practice 2
400165.1	Occupation and the Environment
400162.1	Child and Adolescent Occupations

Year 3**Autumn session**

400168.1	Ergonomics and Work Occupations
400169.1	Occupation and Mental Health
400171.1	Occupation and Neurology
400170.1	Occupation and Social Participation

Spring session

400172.1	Occupational Therapy Clinical Specialties 1
400173.1	Occupational Therapy Clinical Specialties 2
400174.1	Occupational Therapy Clinical Practice 3a
400175.1	Occupational Therapy Clinical Practice 3b

Year 4 (Honours)**Autumn session**

400154.1	Integrating Evidence into Practice
400176.1	Occupation and Ageing
400180.1	Occupational Therapy Honours Thesis 1
400177.1	Professional Reasoning

Spring session

400182.1	Occupational Therapy Clinical Practice 4 (Honours)
400181.1	Occupational Therapy Honours Thesis 2

Elective Units

Elective units in the Bachelor of Applied Science (Occupational Therapy) may be chosen from across UWS, provided that unit prerequisites are met and space is available.

The following is a list of elective units in the Occupational Therapy discipline area which are not listed elsewhere in the Handbook. These electives are open to students from across UWS provided that pre-requisites are met and space is available. Please note that these elective units will not be offered every year:

400183.1	Upper Limb Rehabilitation Following Stroke
400184.1	Conducting Medicolegal Assessments
400186.1	Paediatric Practice
400187.1	Supervision in Clinical Practice

400809.1 Outcome Measures and Indicators in Clinical Practice

Bachelor of Biomolecular Science

3632.2

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 2010 or later.

This degree equips students with specialised knowledge and understanding of the molecular basis of human health and disease. After undertaking a common first year, students select a Key Program in Human Molecular Biology or Pharmaceutical Chemistry.

Human Molecular Biology emphasises recent discoveries in molecular and cell biology relevant to human health and disease - molecular biology and functional genomics, protein science, proteomics, human metabolism, genetics, cell signalling and molecular immunology.

Pharmaceutical Chemistry emphasises the applications of chemistry for human health – biomolecular dynamics and pharmacokinetics, coordination chemistry, drug design, development, and analysis.

A range of alternate and elective units enable students to expand their knowledge in specific disciplines or develop research skills through individual projects.

The degree prepares graduates for a wide range of employment prospects as professional scientists in analytical, diagnostic and research laboratories, in science communication, technical sales and secondary science education, and provides a suitable foundation for entry into postgraduate research and coursework programs.

Study Mode

Three years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Advanced Standing

Applications for advanced standing will be assessed in accordance with current UWS policy.

Accreditation

It is anticipated that the Bachelor of Biomolecular Science with Key Program in Pharmaceutical Chemistry will receive accreditation from the Royal Australian Chemical Institute.

Admission

Assumed knowledge required: HSC level Chemistry and Mathematics studies are assumed.

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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Qualification for this award requires the successful completion of 240 credit points including the units listed in the recommended sequence below. All students study the same units in Year 1, and then select a Key Program for study in Years 2 and 3.

Recommended Sequence

Full Time

Year 1

Autumn session

300539.1	Biodiversity
300554.1	Principles of Chemistry
300558.1	Physics 1

Choose one of

200191.3	Fundamentals of Mathematics
200189.1	Concepts of Mathematics

Spring session

300543.1	Cell Biology
300550.1	Medicinal Chemistry
300541.1	Biomolecular Frontiers

And one elective

Year 2 and Year 3

Students select a Key Program of study for years 2 and 3

KP3632HMB.1	Human Molecular Biology
KP3632PC.1	Pharmaceutical Chemistry

Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form

Bachelor of Computer Science

3506.4

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 was 2008.

The Bachelor of Computer Science course is a three year course with three distinct majors which allow students to specialise in different applications of computer science and

computer systems. The three majors are: computer forensics, networked systems and systems programming. The course and the three majors are all available on the Penrith Campus. Students may graduate without a major but where a major is completed it will appear on the student's transcript. Accreditation with the Australian Computer Society is being sought.

Computer Forensics major: Computer forensics focuses on the gathering of evidence (often as part of an investigation) from computers and computer networks. Such evidence may consist of actual files (e.g. an image) or the traces of a user's activities that are left in the activity logs of operating systems, browsers, databases, web proxies, or network firewalls, etc. Identifying such evidence requires in-depth technical knowledge of the interactions between hardware, the operating system, programs, and the network. Similarly, knowledge of cryptographic techniques is required where data has been encrypted and/or obfuscated. This major develops this requisite knowledge; it also develops the skills necessary to ensure that evidence is not corrupted, and can be documented and presented in an intelligible manner.

Networked Systems major: This major aims to develop graduates with sound skills in the discipline of networked computer systems. Recent advances in computer and telecommunications networked systems, particularly those based on TCP/IP, have increased the importance of network technologies in the discipline of computer science. This major covers a wide range of topics including computer communication network concepts and protocols, multimedia systems, Internet standards and technologies, network security, wireless and mobile computing, and distributed systems. The candidates are also introduced to some of the relevant current key research issues of the field.

Systems Programming major: This major aims to develop graduates with sound skills in the discipline of programming. The focus is on programming at the level of system calls to the underlying operating system and many of the units use the industry standard language for systems programming, namely C/C++, as the vehicle of instruction. There is a strong emphasis on the development of highly efficient and reliable code that can provide support services for higher level application oriented programs, as well as the development of programs suitable for systems administration and management. Practical work utilises both Unix and Microsoft environments. This major is appropriate where a career in systems programming or systems administration is planned, or where the student wishes to develop advanced systems programming skills.

Study Mode

Three years full-time.

Location

Campus	Attendance Mode
Penrith Campus	Full Time Internal

Accreditation

The Bachelor of Computer Science currently is accredited with the Australian Computer Society at Professional Level.

Admission

Assumed knowledge required: HSC Mathematics (2 unit) and any two units of HSC 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 the University of Western Sydney via UWS International.

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 UWS.

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

Full-time

Year 1

Autumn session

One of

200192.1	Statistics for Science
300700.3	Statistical Decision Making

Note: from 2010, 200192 - Statistics for Science replaced by 300700 -Statistical Decision Making

300580.1	Programming Fundamentals
100483.1	Principles of Professional Communication 1
200025.1	Discrete Mathematics

Spring session

300096.4	Computer Organisation
300103.1	Data Structures and Algorithms
300104.2	Database Design and Development
300565.1	Computer Networking

Year 2

Autumn session

300167.2	Systems Programming 1
300581.1	Programming Techniques
300121.1	Formal Languages and Automata

And one elective

Spring session

300404.1	Formal Software Engineering
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And two Computer Science alternate units
And one elective

Year 3

Autumn session

300578.2	Professional Development
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And two Computer Science alternate units
And one elective

Spring session

300579.2 Professional Experience

And two Computer Science alternate units
And one elective

Computer Science Alternate Units

300090.1	Compiler Theory and Practice
300092.1	Computer Architecture
300093.1	Computer Graphics
300095.2	Computer Networks and Internets
300115.1	Distributed Systems and Programming
300128.2	Information Security
300130.1	Internet Programming
300143.2	Network Security
300149.1	Operating Systems
300165.2	Systems Administration Programming
300166.1	Systems and Network Management
300168.1	Systems Programming 2
300368.1	Intelligent Systems
300447.1	Computer Forensics Workshop
300507.1	Extended Computing Project 1
300508.1	Extended Computing Project 2
300575.1	Networked Systems Design

Majors

The majors listed below were designed specifically for this course and are recommended for Bachelor of Computer Science students. Other majors, from the School of Computing and Mathematics or any other School may also be selected but may require more than the standard six semesters to complete depending on their affinity with this course.

M31015V2.1	Computer Forensics
M31026V2.1	Networked Systems
RU3010V2.1	Systems Programming

Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form

Bachelor of Computer Science (Advanced)

3634.1

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 2008.

Students in the Bachelor of Computer Science (Advanced) will follow the study program set out for 3506 Bachelor of Computer Science. Each student will have an Academic

Mentor and will participate in additional compulsory activities including research projects. To maintain their enrolment in the Bachelor of Computer Science (Advanced) students must maintain an overall above 5 Grade Point Average (GPA), otherwise they will be transferred to the standard 3506 Bachelor of Computer Science course. At enrolment students will be required to sign a declaration acknowledging the requirement to maintain a GPA greater than 5.0.

For more information refer to the entry for 3506 Bachelor of Computer Science.

Study Mode

Three years full-time.

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal

Accreditation

The Bachelor of Computer Science currently is accredited with the Australian Computer Society at Professional Level.

Admission

Assumed knowledge required: HSC Mathematics plus any two units of English (or equivalent). Recommended studies: Mathematics (extension 1).

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 the University of Western Sydney via UWS International.

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 UWS.

Special Requirements

Students must maintain a grade point average (GPA) of above 5.0 to remain in the course; those who do not maintain this average will be transferred to the Bachelor of Computer Science. At enrolment students will be required to sign a declaration acknowledging the requirement to maintain a GPA greater than 5.0.

Course Structure

In addition to the units outlined in the course structure for 3506 Bachelor of Computer Science, students in the advanced program must also complete the following three units.

Students must enrol in both 1H and 2H sessions each year.

Year 1

1H session

300586.1 Advanced Computer Science Activities 1

2H session**300586.1** Advanced Computer Science Activities 1**Year 2****1H session****300587.1** Advanced Computer Science Activities 2**2H session****300587.1** Advanced Computer Science Activities 2**Year 3****1H session****300588.1** Advanced Computer Science Activities 3**2H session****300588.1** Advanced Computer Science Activities 3**Bachelor of Computer Science (Honours)****3614.1**

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 2004 or later.

The Honours program encourages independence in learning and research; further develops academic ability, provides the opportunity to pursue undergraduate studies to a more advanced level, deepen intellectual understanding in the major field of study and develop research skills. Honours is a recognised point of entry into postgraduate research studies at PhD and Masters levels. If a career in industry is sought, Honours enables study to a more advanced level with a higher qualification. The course has the opportunity for direct commercial and industrial involvement with a diverse range of organisations through the provision and joint supervision of research projects.

Study Mode

One year full-time or two years part-time.

Location

Campus	Attendance Mode	
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal
Parramatta Campus	Full Time	Internal
Parramatta Campus	Part Time	Internal
Penrith Campus	Full Time	Internal
Penrith Campus	Part Time	Internal

Accreditation

Professional accreditation by the Australian Computer Society may be available, depending on a student's

undergraduate degree. The Bachelor of Computer Science currently is accredited with the Australian Computer Society at Professional Level.

Course Structure

Qualification for this award requires the successful completion of 80 credit points including the units listed below.

The award is a year long program that will be divided into three main components: Computing Research Process and Practice (10 credit points), Computing Honours Seminar Program (10 credit points) and the Computing Honours Thesis (60 credit points).

Students must enrol in 300364 Computing Honours Seminar Program and 300363 Computing Honours Thesis in both Autumn and Spring sessions.

Full-time**Year 1****Autumn session**

300365.1 Computing Research Process and Practice
300364.2 Computing Honours Seminar Program
300363.2 Computing Honours Thesis

Spring session

300364.2 Computing Honours Seminar Program
300363.2 Computing Honours Thesis

Part-time**Year 1****Autumn session**

300365.1 Computing Research Process and Practice
300363.2 Computing Honours Thesis

Spring session

300364.2 Computing Honours Seminar Program
300363.2 Computing Honours Thesis

Year 2**Autumn session**

300364.2 Computing Honours Seminar Program
300363.2 Computing Honours Thesis

Spring session

300363.2 Computing Honours Thesis

Bachelor of Computing**3633.2**

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 was 2009 or later.

The Bachelor of Computing is a professional Information Communication Technology course that provides graduates with a skills and knowledge base in the IS/IT areas of ICT and the ability to apply IS/IT solutions to a wide area of ICT. It allows students to develop skills in program design, systems analysis, design and security, data analysis and modelling, networks, web-design and systems planning.

This degree develops the abilities to design, develop, deploy and manage a spectrum of ICT systems.

As an ICT specialist in the ICT world, these attributes enable graduates to work in software development companies, networking companies, banking companies, IT consulting companies, the health care industry and many other IS and business related roles.

The Bachelor of Computing course is a three year ICT course being accredited by the Australian Computer Society. The Key Program in Information Systems focuses on computing and information technology in the context of business. Majors and sub-majors may be chosen from a range of disciplines, subject to the approval of Head of Program and subject to the number of elective units available in the Key Program. Accreditation at Professional level will be sought with the Australian Computer Society.

Study Mode

Three years full-time.

Location

Campus	Attendance Mode
Parramatta Campus	Full Time Internal

Accreditation

The Bachelor of Computing currently is accredited with the Australian Computer Society at Professional Level.

Admission

Assumed knowledge required: HSC Mathematics and any two units of HSC 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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

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

Non-recent school leavers who have not studied mathematics, or those students who have completed HSC General Mathematics, or some students who have undertaken HSC Mathematics but have only achieved

bands 2 or 3 may benefit from taking the following unit as an elective:

300691.1 Mathematical Reasoning

Please seek further advice from the Head of Program.

Bachelor of Computing (Information Systems)

KT3000.1 Information Systems

Electives for majors and sub-majors

Electives for majors and sub-majors may not be available on all campuses and may create timetable clashes (given the range of possible progression options). Where an elective cannot be taken, the Head of Program may approve equivalent units where there is considerable overlap. Such units might be found within the School at UWS or cross-institutional study.

Please note: Majors and sub-majors are optional.

Majors

M3001.1	Advanced Programming
M3000.1	Computer Systems
M3002.1	Information Technology
M3004.1	Health Informatics
M3003.1	Web Systems Development
M3023.1	Computational Decision Making
M3005.1	Entertainment Computing
M3024.1	Knowledge Discovery and Data Mining
M3021.1	Mathematics
M3022.1	Statistics

Sub-majors

SM3005.1	Applied Mathematics
SM3000.1	Computer Systems
SM3004.1	Formal Systems
SM3001.1	Systems Administration
SM3003.1	Systems Programming
SM3002.1	Systems Security
SM3006.1	Web Application Development (for Computing Students)
SM3007.1	Web Application Development (for Non-Computing Students)
SM3008.1	Networking
SM3010.1	Health Information Applications
SM3009.1	Health Information Management
SM3027.1	Computational Decision Making
SM3011.1	Entertainment Computing
SM3028.1	Knowledge Discovery and Data Mining
SM3025.1	Mathematics
SM3026.1	Statistics

Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form

Bachelor of Computing (Honours)

3588.1

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 2002 or later.

The Honours program encourages independence in learning and research; further develops academic ability, provides the opportunity to pursue undergraduate studies to a more advanced level, deepen intellectual understanding in the major field of study and develop research skills. Honours is a recognised point of entry into postgraduate research studies at PhD and Masters levels. If a career in industry is sought, Honours enables study to a more advanced level with a higher qualification. The course has the opportunity for direct commercial and industrial involvement with a diverse range of organisations through the provision and joint supervision of research projects.

Study Mode

One year full-time or two years part-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
Parramatta Campus	Full Time	Internal
Parramatta Campus	Part Time	Internal
Penrith Campus	Full Time	Internal
Penrith Campus	Part Time	Internal

Accreditation

Professional accreditation by the Australian Computer Society may be available, depending on a student's undergraduate degree. The Bachelor of Computing currently is accredited with the Australian Computer Society at Professional Level.

Course Structure

Qualification for this award requires the successful completion of 80 credit points as per the recommended sequence below.

The award is a year long program that will be divided into three main components: Computing Research Process and Practice (10 credit points), Computing Honours Seminar Program (10 credit points) and the Computing Honours Thesis (60 credit points).

Students must enrol in 300364 Computing Honours Seminar Program and 300363 Computing Honours Thesis in both Autumn and Spring sessions.

Recommended Sequence

Full-time

Year 1

Autumn session

300365.1	Computing Research Process and Practice
300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Spring session

300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Part-time

Year 1

Autumn session

300365.1	Computing Research Process and Practice
300363.2	Computing Honours Thesis

Spring session

300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Year 2

Autumn session

300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Spring session

300363.2	Computing Honours Thesis
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Bachelor of Construction Management

2607.4

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 2010 or later.

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. It offers a sophisticated, purpose-built laboratory complex where students will conduct experiments across the range of building sciences, including acoustics, heat flow through a building, corrosion

of materials, concrete testing, and much more. 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 eight years part-time.

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 (Credit and Distinctions only).

Accreditation

Graduates are eligible for Probationer membership with advancement to Associate membership of the Australian Institute of Quantity Surveyors 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 the University of Western Sydney via UWS International.

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 UWS.

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 submajor for this award.

Recommended Sequence

Full-time

Year 1

Autumn session

300706.1	Building 1
300729.1	Graphic Communication and Design

300674.1	Engineering, Design and Construction Practice
300016.1	Design Science

Spring session

300707.1	Building 2
200184.2	Introduction to Business Law
200101.2	Accounting Information for Managers
MG102A.2	Management Foundations

Year 2

Autumn session

300720.1	Construction Technology 1 (Civil)
200486.1	Quantity Surveying 1
200472.2	Material Science in Construction
300723.1	Development Control

Spring session

300721.1	Construction Technology 2 (Substructure)
200468.1	Estimating 1
200482.1	Construction in Practice 1

Elective 1

Year 3

Autumn session

200502.2	Construction Technology 3 (Concrete Construction)
200485.1	Decision Making for Construction Professionals
300727.1	Project Management
300728.1	Construction Planning

Spring session

200470.2	Construction Technology 4 (Steel Construction)
300722.1	Building Regulations Studies
300053.2	Professional Practice
200292.1	Building Law

Non-Honours Stream

Year 4

Autumn session

200471.2	Construction Technology 5 (Envelope)
200504.1	Construction Economics
300536.1	Major Project in Construction

Elective 3

Spring session

300725.1	Construction Technology 6 (Services)
200484.2	Construction in Practice 3

Elective 2

Elective 4

Honours Stream

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

Year 4

Autumn session

200471.2	Construction Technology 5 (Envelope)
200504.1	Construction Economics
300675.1	Honours Thesis

Spring session

300725.1	Construction Technology 6 (Services)
200484.2	Construction in Practice 3
300675.1	Honours Thesis

Sub-major in Construction Economics

SM3029.1	Construction Economics
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To graduate with a sub-major in Construction Economics students must successfully complete the following specialist units:

Elective 1

200503.1	Construction Information Systems
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Elective 2

200487.2	Quantity Surveying 2
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Elective 3

300748.1	Quality and Value Management
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Elective 4

300726.1	Estimating 2
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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.

300724.1	Industry Based Learning
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Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form

Bachelor of Design and Technology

3502.5

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 was Spring 2010 or later.

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, aesthetics, management 2D and 3D CAD. Students interested in a teaching career in Design and Technology may take the end-on Bachelor of Teaching degree or Graduate diploma in Education after completing their Design and Technology degree.

Study Mode

Three years full-time. Combinations of full-time and part-time study or all part-time study are also permitted under the normal program.

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal

Advanced Standing

Advanced Standing will be assessed in accordance with UWS policy.

Accreditation

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

Admission

There are no specific subject prerequisites for entry into the course. Preferably, students should have successfully completed the HSC at the 2U level or better in English and at least two of the following units: Design & Technology, Arts, Physics, and Mathematics. Alternative entry: Certificate, Associate Diploma or Advanced Diploma from TAFE or another recognized teaching institution or equivalent in the discipline area. In some cases, professional experience will be counted towards alternative entry.

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 the University of Western Sydney via UWS International.

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 UWS.

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. Refer to the 'note' after the sub-major listing, for further details.

Recommended Sequence

Full-time

Year 1

Autumn session

300674.1	Engineering, Design and Construction Practice
300016.1	Design Science
300776.1	Applied Ergonomics
200191.3	Fundamentals of Mathematics

Spring session

300462.1	Engineering and Design Concepts
300302.1	Industrial Graphics 1: Presentation
300304.2	Sustainable Design: Materials Technology
200083.1	Marketing Principles

Year 2

Autumn session

300305.2	Design Studio 1: Themes and Variations
300309.2	Sustainable Design: Life Cycle Analysis
300282.1	Industrial Graphics 2: Transition

Choose one of

One sub-major alternate unit

Or one elective

Spring session

300308.2	Design Studio 2: The Design Proposal
300306.2	Sustainable Design: Sustainable Futures
300310.2	Industrial Graphics 3: 3D Solids

Choose one of

One sub-major alternate unit

Or one elective

Year 3

Autumn session

300311.2	Design Studio 3: Product Realisation
300014.2	Design Management 3: Organisational Skills for Designers

Choose one of

Two sub-major alternate units

Or two electives

Spring session

300313.2	Design Studio 4: Simulate to Innovate
300314.1	Designed Inquiry

Choose one of

Two sub-major alternate units

Or two electives

Industrial Experience

300775.1 Industrial Experience

Majors

There are three Majors available, composed of units from the program, however these are not compulsory to complete:

M3503IDM.1	Innovation Design Management
M3503IIG.1	Interactive Industrial Graphics
M3503INTDM.1	International Design Management

Sub-majors

There are three sub-majors, composed of units from the program.

S3502DM.1	Design Management
S3502IG.1	Industrial Graphics
S3502SD.1	Sustainable Design

Note: In addition to the sub-major streams/electives offered from within Industrial Design (as listed above) students may choose other sub-major streams/electives within the School of Engineering and Industrial Design or the University of Western Sydney or other universities (as cross institutional studies).

Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form

Bachelor of Engineering

3621.5

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 2011 or later.

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 of full-time study or part-time equivalent.

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal
Penrith Campus	Part Time	Internal

Accreditation

The course has been designed to meet the requirements of Engineers Australia. Six Key Programs, namely, Civil, Computer, Electrical, Environmental, Robotics & Mechatronic and Telecommunications, have received full accreditation from Engineers Australia at the level of Professional Engineer. Accreditation for the Construction Key Program will be sought from Engineers Australia in 2010. Accreditation for the new Mechanical Key Program will be sought from Engineers Australia in 2011.

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.

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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Head Of Program

Dr Haiping Zhu is the Head of Program for Key Programs in Civil, Construction, Environmental, Mechanical and Robotics and Mechatronics.

Dr Khoa Le is the Head of Program for Key Programs in Electrical, Computer and Telecommunications.

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

200237.2	Mathematics for Engineers 1
300464.1	Physics and Materials
300027.1	Engineering Computing
300674.1	Engineering, Design and Construction Practice

Spring session

200238.1	Mathematics for Engineers 2
300463.1	Fundamentals of Mechanics
300021.1	Electrical Fundamentals
300462.1	Engineering and Design Concepts

Year 2 - Year 4

Students must then select one of the following key programs:

KT3043.1	Civil
KT3046.1	Computer
KT3026.1	Construction
KT3032.1	Electrical
KT3044.1	Environmental
KT3042.1	Mechanical
KT3045.1	Robotics and Mechatronics
KT3034.1	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 UWS 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 Head of Program.

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
SM3036.1	Wireless Engineering

Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form

Bachelor of Engineering (Advanced)

3666.1

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 2011 or later.

The Bachelor of Engineering (Advanced) course is a four year course and is designed for high achieving students to undertake advanced engineering topics and gain substantial research experience. This course is in parallel with the Bachelor of Engineering course which has a common first year program for all engineering disciplines and shares two units with the Bachelor of Industrial Design and three unit with 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. Students in this course will be challenged with special projects and assignments to realise their full potential. Students need to maintain a specified level of performance in this course and will carry out an honours project of 60 credit points in their fourth year of study.

Study Mode

Four years of full-time study or part-time equivalent.

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal
Penrith Campus	Part Time	Internal

Accreditation

The course has been designed to meet the requirements of Engineers Australia. Six Key Programs, namely, Civil, Computer, Electrical, Environmental, Robotics & Mechatronic and Telecommunications, have received full accreditation from Engineers Australia at the level of Professional Engineer. Accreditation for the Construction Key Program will be sought from Engineers Australia in 2010. Accreditation for the new Mechanical Key Program will be sought from Engineers Australia in 2011.

Admission

Assumed knowledge required: HSC Mathematics Extension 1, Physics and any two units of English.

Recommended studies: HSC Mathematics Extension 2.

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 the University of Western Sydney via UWS International.

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 UWS.

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.

Full-time

Year 1

Autumn session

200237.2	Mathematics for Engineers 1
300464.1	Physics and Materials
300027.1	Engineering Computing
300674.1	Engineering, Design and Construction Practice

Spring session

200238.1	Mathematics for Engineers 2
300463.1	Fundamentals of Mechanics
300021.1	Electrical Fundamentals
300462.1	Engineering and Design Concepts

Year 2 - Year 4

Students must then select one of the following key programs

KT3048.1	Civil
KT3051.1	Computer
KT3037.1	Construction
KT3038.1	Electrical
KT3049.1	Environmental
KT3047.1	Mechanical
KT3050.1	Robotics and Mechatronics
KT3041.1	Telecommunications

Bachelor of Health Science

4656.1

Students should follow the course structure for the course version relevant to the year they commenced. This course version applies to students whose commencement year in this course is 2010 or later.

The course provides a broad introduction to the health sciences with opportunities to major in health promotion, health service management and therapeutic recreation, or to transfer to one of the other health science specialisations at UWS. Subject to meeting admission criteria, transfers are possible to the clinical programs in physiotherapy, occupational therapy and podiatric medicine. Note that transfer places may be limited.

Study Mode

Three years full-time. Students may choose to study at a reduced load.

Location

Campus	Attendance Mode
Campbelltown Campus	Full Time Internal

Accreditation

The Bachelor of Health Science (Health Service Management) has Professional Accreditation with the Australasian College of Health Service Management. Accreditation is being sought with the Diversional Therapy Association of Australia for the Therapeutic Recreation Key Program.

Admission

For local students admission is through UAC - Assumed knowledge, any 2 units of English.

For international students, admission is through direct application to the university with IELTS equal to 6.5 or above.

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 the University of Western Sydney via UWS International.

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 UWS.

Special Requirements

In order to enrol in Second Year Autumn units, all students must have: 1. NSW Health National Criminal Record Check, 2. Prohibited Employment Declaration Form. In order to enrol in Second Year Spring units, all students must have: 1. First Aid Certificate. To be eligible to undertake fieldwork placements in public hospitals, students must comply with vaccination requirements and be prepared to submit a completed Adult Immunisation Card to placement institutions. Details of necessary vaccinations are available from NSW Health.

Course Structure

Qualification for this Key Program requires the successful completion of 240 credit points including the units within one of the following Key Programs.

Recommended Sequence

Students must select and enrol in one of the following Key Programs before selecting individual units.

KT4000.1	Health Promotion
KT4001.1	Health Service Management
KT4002.1	Therapeutic Recreation

Majors

These majors are available to Health Promotion, Health Service Management and Therapeutic Recreation students only.

M4001.1 Health Promotion

This major is not available to students enrolled in the Health Promotion Key Program of the Bachelor of Health Science.

M4002.1 Health Services Management

This major is not available to students enrolled in the Health Services Management Key Program of the Bachelor of Health Science.

M4000.1 Therapeutic Recreation

This major is not available to students enrolled in the Therapeutic Recreation Key Program of the Bachelor of Health Science.

Double Majors

The sharing of some common units across the Key Programs detailed above offers students the opportunity to achieve the Bachelor of Health Science with a double major. Qualification for the double major programs requires the successful completion of 240 credit points including the units listed in the recommended sequences below.

Bachelor of Health Science (Therapeutic Recreation) with Health Promotion double major

OR

Bachelor of Health Science (Health Promotion) with Therapeutic Recreation double major

Recommended sequence (Double Major)

Full-time

Year 1

Autumn session

400870.1	Population Health and Society
300361.2	Introduction to Human Biology
400783.1	Professional Pathways in Health Science
400871.1	Professional Health Competencies

Spring session

101614.1	Psychology and Health
400863.1	Foundations of Research and Evidence-Based Practice
400732.1	Communication in Health
400285.1	Public Health

Year 2

Autumn session

400867.1	Approaches to Health Promotion
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- 400244.1** Introduction to Leisure and Recreation Theory
400864.2 Research Methods (Quantitative and Qualitative)
400866.2 Culture, Diversity and Health

Spring session

- 400968.1** Professional Practice in Aged Care and Disability
400246.2 Workplace Learning 1 (Therapeutic Recreation)
400966.1 Health Politics, Policy and Planning
400286.2 Injury Prevention

Year 3**Autumn session**

- 400275.1** Health Planning Project
400252.1 Workplace Learning 2 (Community Placement)
400789.2 Leisure Education Programming and Mental Health
400784.2 Health Promotion Practice 1

Spring session

- 400785.2** Health Promotion Practice 2
400786.1 Professional Transition Project
400254.2 Therapeutic Recreation Professional Project
400249.1 Ethical and Legal Issues in Health Care

Bachelor of Health Science (Therapeutic Recreation) with Health Services Management double major

OR

Bachelor of Health Science (Health Services Management) with Therapeutic Recreation double major

Recommended Sequence (Double Major)**Full-time****Year 1****Autumn session**

- 400870.1** Population Health and Society
300361.2 Introduction to Human Biology
400783.1 Professional Pathways in Health Science
400871.1 Professional Health Competencies

Spring session

- 101614.1** Psychology and Health
400277.2 Health Services Management
400863.1 Foundations of Research and Evidence-Based Practice
400732.1 Communication in Health

Year 2**Autumn session**

- 400867.1** Approaches to Health Promotion
400244.1 Introduction to Leisure and Recreation Theory
400864.2 Research Methods (Quantitative and Qualitative)
400866.2 Culture, Diversity and Health

Spring session

- 400968.1** Professional Practice in Aged Care and Disability
400246.2 Workplace Learning 1 (Therapeutic Recreation)
400966.1 Health Politics, Policy and Planning
400788.1 Health Services Workforce Management

Year 3**Autumn session**

- 400275.1** Health Planning Project
400252.1 Workplace Learning 2 (Community Placement)
400789.2 Leisure Education Programming and Mental Health
400787.1 Health Services Management Practice

Spring session

- 400249.1** Ethical and Legal Issues in Health Care
400786.1 Professional Transition Project
400254.2 Therapeutic Recreation Professional Project
400279.2 Health Services Financial Management

Bachelor of Health Science (Health Promotion) with Health Services Management double major

OR

Bachelor of Health Science (Health Services Management) with Health Promotion double major

Recommended Sequence (Double Major)**Full-time****Year 1****Autumn session**

- 400870.1** Population Health and Society
300361.2 Introduction to Human Biology
400783.1 Professional Pathways in Health Science
400871.1 Professional Health Competencies

Spring session

- 101614.1** Psychology and Health
400277.2 Health Services Management
400863.1 Foundations of Research and Evidence-Based Practice

400732.1 Communication in Health**Year 2****Autumn session**

400867.1	Approaches to Health Promotion
400864.2	Research Methods (Quantitative and Qualitative)
400285.1	Public Health
400866.2	Culture, Diversity and Health

Spring session

400286.2	Injury Prevention
400966.1	Health Politics, Policy and Planning
400788.1	Health Services Workforce Management

And one elective

Year 3**Autumn session**

400787.1	Health Services Management Practice
400275.1	Health Planning Project
400784.2	Health Promotion Practice 1

And one elective

Spring session

400785.2	Health Promotion Practice 2
400786.1	Professional Transition Project
400279.2	Health Services Financial Management
400249.1	Ethical and Legal Issues in Health Care

Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form

Bachelor of Health Science (Honours)**4657.1**

Students should follow the course structure for the course version relevant to the year they commenced. This course version applies to students whose commencement year in this course is 2010 or later.

High-achieving students in the Bachelor of Health Science can take Honours as an additional year for full-time students (or a longer equivalent for part-time students) at the end of Year 3. Honours is a key early step in the path to leadership in the profession and opens up the world of research. The honours thesis will identify new ways to address real problems and is written under the supervision of experienced academic researchers.

The honours program encourages independent learning, develops research skills and provides an opportunity for deeper investigation in the major field of study. An honours program is a recognised preparation and entry point for

postgraduate research studies and the research training is valuable preparation for careers in research and development and analysis in the public and private sectors. The honours program consists of supervised research on a topic in health science, culminating in the production of a thesis and presentation of a seminar. The coursework component covers research training, research ethics and advanced research methods. Research projects often involve clinical studies and involvement with external health organisations.

Study Mode

One year full-time or two years part-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal
Penrith Campus	Full Time	Internal
Penrith Campus	Part Time	Internal

Admission

Assumed knowledge: students must have completed a Bachelor of Health Science from UWS or equivalent degree from another university, with a GPA greater than 5.0 (calculated over all semesters).

Entry is competitive and will depend on availability of places and supervisors.

International students must have an IELTS equal to 6.5 or above.

Applicants from other universities for an honour program in Sport and Exercise Science will, in addition to the above, be required to demonstrate competence in the use of UWS Sport & Exercise Science laboratory equipment deemed necessary to carry out their proposed research as per the applicant's research statement.

Course Structure

Qualification for this award requires the successful completion of 80 credit points including the units listed in the recommended sequence below.

Recommended Sequence**Full-time****Year 1****Autumn session**

400872.1	Honours Research Design and Methodology
400898.1	Honours Thesis in Health Science A

Spring session

400899.1	Honours Thesis in Health Science B
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Part-time**Year 1****Autumn session**

400872.1 Honours Research Design and Methodology

Spring session

400898.1 Honours Thesis in Health Science A

Year 2**Autumn**

400900.1 Honours Thesis in Health Science C

Spring

400901.1 Honours Thesis in Health Science D

Bachelor of Health Science (Honours)/ Master of Physiotherapy

4668.1

This course commences in 2012.

The Honours program is available to high achieving students in the Bachelor of Health Science/Master of Physiotherapy and is embedded in the four-year combined degree. Honours is a key early step in the pathway to leadership in the profession and opens up the world of research, without taking any longer to complete the degree.

The honours program encourages independent learning, develops research skills and provides an opportunity for deeper investigation in the major field of study. An honours program is a recognised preparation and entry point for postgraduate research studies and the research training is valuable preparation for careers in research and development and analysis in the public and private sectors.

Students apply for entry into the Honours program in year 3 of the combined degree. They begin advanced research training in the latter half of year 3. Clinical placements and an honours thesis are completed during the fourth year of the program. The thesis presents research that addresses real physiotherapy problems. This research will be conducted under the supervision of experienced academic researchers.

Study Mode

Four years full-time study

Location

Campus	Attendance Mode	
Campbelltown Campus	Full Time	Internal

Accreditation

The program is designed to meet all the requirements for accreditation by the Australian Physiotherapy Council and accreditation is being sought.

Admission

Admission is through direct application to the university. Applications are directed to the School of Biomedical and Health Sciences.

Students must have completed 200 credit points in the first three years of the UWS B. Health Science/M. Physiotherapy course and achieved a GPA of 5.0 or more. Students with a GPA in the range 4.5 – 5.0 and a credit average in units completed in physiotherapy in levels 2 and 3 will also be considered (in accordance with Honours policy clause 13 and Graduations Policy clause 53).

Special Requirements

All students must have: 1. NSW Health National Criminal Record Check prior to 1 June 2010 OR a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate, 2. Prohibited Employment Declaration Form (PPED) prior to 1 June 2010 OR a Working with Children Check Student Declaration after 1 June 2010, 3. First Aid Certificate (including cardiopulmonary resuscitation). To be eligible to undertake fieldwork/ practice placements, students must: 1. Comply with vaccination requirements and be prepared to submit a completed Adult Immunisation Card to placement institutions. Details of necessary vaccinations are available from NSW Health. 2. Comply with NSW Health Records and Information Privacy Act (2004) and complete declaration.

Course Structure**Special Note:**

Students in this program are required to participate fully in practical classes. This involves disrobing to shorts and singlet or swim-suit equivalent in mixed gender classes. Students will practice hands-on physiotherapy examination and treatment techniques on both genders, and will personally experience these techniques which will be performed on them by other students and relevant academic staff.

Qualification for this award requires the successful completion of 340 credit points which include the units listed in the recommended sequence below.

Recommended sequence**Full-time****Year 1****Autumn session**

400870.1 Population Health and Society
400868.1 Human Anatomy and Physiology 1
400906.1 Introduction to Physiotherapy Practice
400871.1 Professional Health Competencies

Spring session

400732.1 Communication in Health
400869.1 Human Anatomy and Physiology 2
400863.1 Foundations of Research and Evidence-Based Practice
400881.1 Functional Anatomy

Year 2**Autumn session**

400882.1	Introduction to Biomechanics
400138.2	Pathophysiology 1
400864.2	Research Methods (Quantitative and Qualitative)
400866.2	Culture, Diversity and Health

2H session

400982.1	Core Competencies in Physiotherapy Practice
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Spring session

101614.1	Psychology and Health
400981.1	Clinical Pharmacology
300754.1	Neuroanatomy

Please Note: The confirmed structure for years 3 and 4 which covers the theory and clinical practice of physiotherapy will be available at a later date.

Bachelor of Health Science (Honours)/ Master of Podiatric Medicine

4666.1

This course commences in 2012.

The Honours program is available to high achieving students in the Bachelor of Health Science/Master of Podiatric Medicine and is embedded in the four-year combined degree. Honours is a key early step in the path to leadership in the profession and opens up the world of research, without taking any longer to complete the degree.

The honours program encourages independent learning, develops research skills and provides an opportunity for deeper investigation in the major field of study. An honours program is a recognised preparation and entry point for postgraduate research studies and the research training is valuable preparation for careers in research and development and analysis in the public and private sectors. Students apply for entry into the Honours program in year 3 of the combined degree. They begin advanced research training in the latter half of year 3. Clinical placements and an honours thesis are completed during the fourth year of the program. The thesis presents research that addresses real physiotherapy problems. This research will be conducted under the supervision of experienced academic researchers.

Study Mode

Four years full-time study

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Accreditation

The program is designed to meet all the requirements of the Australian and New Zealand Podiatrists Accreditation Council and accreditation is being sought.

Admission

Admission is through direct application to the university. Applications are directed to the School of Biomedical and Health Sciences.

Students must have completed 200 credit points in the first three years of the UWS B. Health Science/M. Podiatric Medicine course and achieved a GPA of 5.0 or more. Students with a GPA in the range 4.5 – 5.0 and a credit average in units completed in podiatric medicine in levels 2 and 3 will also be considered (in accordance with Honours policy clause 13 and Graduations Policy clause 53).

Special Requirements

All students must have: 1. NSW Criminal Record Check, 2. Prohibited Employment Declaration Form, 3. First Aid Certificate (including cardiopulmonary resuscitation). To be eligible to undertake fieldwork/ practice placements, students must: 1. Comply with vaccination requirements and be prepared to submit a completed Adult Immunisation Card to placement institutions. Details of necessary vaccinations are available from NSW Health. 2. Comply with NSW Health Records and Information Privacy Act (2004) and complete declaration.

Course Structure

Qualification for this award requires the successful completion of 340 credit points which include the units listed in the recommended sequence below.

Recommended sequence**Full-time****Year 1****Autumn session**

400870.1	Population Health and Society
400868.1	Human Anatomy and Physiology 1
400905.1	Introduction to Podiatry
400871.1	Professional Health Competencies

Spring session

400881.1	Functional Anatomy
400869.1	Human Anatomy and Physiology 2
400863.1	Foundations of Research and Evidence-Based Practice
400732.1	Communication in Health

Year 2**Autumn session**

400882.1	Introduction to Biomechanics
400138.2	Pathophysiology 1
400864.2	Research Methods (Quantitative and Qualitative)
400866.2	Culture, Diversity and Health

Spring session

300754.1	Neuroanatomy
101614.1	Psychology and Health
400981.1	Clinical Pharmacology
400933.1	Podiatry Pre-Clinical

Year 3**Autumn session**

400935.2	Podiatric Techniques 1A
400936.2	Podiatric Techniques 1B
400929.1	Podiatric Practice 1

And one elective

Spring session

400937.2	Podiatric Techniques 2A
400938.2	Podiatric Techniques 2B
400944.1	Evidence-Based Practice (Advanced)
400930.1	Podiatric Practice 2

Term N

400945.1	Honours Research 1
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Year 4**Autumn session**

400939.1	Podiatric Techniques 3A
400940.1	Podiatric Techniques 3B
400941.1	Podiatric Techniques 3C
400931.1	Podiatric Practice 3

Spring session

400946.1	Honours Research 2
400943.1	Podiatric Clinical Block for Honours Students
400932.1	Podiatric Practice 4

Bachelor of Health Science (Personal Development, Health and Physical Education)

4659.2

Students should follow the course structure for the course version relevant to the year they commenced. This course version applies to students whose commencement year in this course is 2011 or later.

The Personal Development, Health and Physical Education (PDHPE) program brings together a comprehensive foundation of health sciences, understanding of physical activity and personal development, and skills in interacting with people. Graduates stand out for their holistic understanding of the concepts of health and physical activity in personal development. The program is a popular pathway to a Master of Teaching degree, and then on to a teaching career. Teaching opportunities can be extended beyond PDHPE by studying electives, such as science and mathematics. Graduates also work as personal trainers and

sports coaches and new opportunities are opening up in community-based recreation.

The course explores challenging areas of personal development, including youth health issues, sexuality, drugs, psychology and risk-taking behaviours, as well as general health science, including human biology, health systems, health promotion and research. Facilities are state of the art, including a new gymnasium and a renovated dance and gym studio, and practical experience is a strong feature of the program.

Study Mode

Three years full-time. Students may choose to study at a reduced load.

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal

Accreditation

Graduates may be eligible to apply for accreditation with the NSW Institute of Teachers following the successful completion of a recognised teaching qualification. There is no professional accrediting body for the PDHPE specialisation.

Admission

For local students admission is through UAC. Assumed knowledge: any 2 units of English. Recommended Studies: Personal Development, Health and Physical Education or Community and Family Studies.

For international students, admission is through direct application to the university with IELTS equal to 6.5 or above.

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 the University of Western Sydney via UWS International.

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 UWS.

Special Requirements

In order to enrol in Second Year Autumn units, all students must have: 1. NSW Health National Criminal Record Check, 2. Prohibited Employment Declaration Form. In order to enrol in Second Year Spring units, all students must have a First Aid Certificate. To be eligible to undertake fieldwork placements in public hospitals, students must comply with vaccination requirements and be prepared to submit a completed Adult Immunisation Card to placement institutions. Details of necessary vaccinations are available from NSW Health.

Course Structure

Note: For placement in schools, students must complete a working with children module. This requirement is completed by attendance at lectures in the unit 400732 - Communication in Health.

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

400870.1	Population Health and Society
300361.2	Introduction to Human Biology
400880.1	Fundamentals of Exercise Science
400871.1	Professional Health Competencies

Spring session

400808.2	Outdoor Recreation
400891.1	Movement and Skill Development
101614.1	Psychology and Health
400732.1	Communication in Health

Year 2

Autumn session

400867.1	Approaches to Health Promotion
400980.1	Sport and Exercise Psychology
400866.2	Culture, Diversity and Health

And one elective

Spring session

400892.1	Physical Activity, Nutrition and Health
400798.1	PDHPE: Games for Diverse Groups
400863.1	Foundations of Research and Evidence-Based Practice
400962.1	Foundations of Wellbeing

Year 3

Autumn session

400893.1	Ethical Issues in Sports and Athletics
400894.1	Contemporary Youth Health Issues
400895.1	Aquatic Sports

And one elective

Spring session

400896.1	Gymnastics and Dance
400897.1	Personal Training and Coaching

And two electives

Bachelor of Health Science (Sport and Exercise Science)

4658.2

Students should follow the course structure for the course version relevant to the year they commenced. This course version applies to students whose commencement year in this course is 2011 or later.

Sport and exercise science encompasses the science that underpins health, physical activity and exercise, and their applications to the design, implementation and evaluation of exercise programs. There are a range of career options in health and fitness centres, for example as a personal trainer, a health and fitness specialist or a fitness assessor, in government agencies associated with sport, physical activity and health, in teaching and research, and with professional sporting groups, rehabilitation clinics and hospitals. If you gain higher-level accreditation as an exercise physiologist, you will also be able to provide healthcare services funded by Medicare (Australian Government).

The course combines studies in exercise physiology, sports psychology, biomechanics motor control and exercise prescription with a broad understanding of biomedicine and various health science fields to develop the professional competencies important for ethical and safe practice and high quality care and the skills to work in multidisciplinary teams. Facilities are state-of-the-art, centred on an Exercise and Sport Science Laboratory complex, and practical experience is a strong feature of the program.

Study Mode

Three years full-time. Students may choose to study at a reduced load.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Accreditation

Graduates may be eligible to apply for membership and accreditation with the Australian Association for Exercise and Sport Science (AAESS).

Admission

For local students admission is through UAC. Recommended Studies: Any 2 units of English, plus four units of Science and/or Mathematics. PDHPE can be counted as a science unit for this course.

For international students, admission is through direct application to the university with IELTS equal to 6.5 or above.

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 the University of Western Sydney via UWS International.

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 UWS.

Special Requirements

In order to enrol in Second Year Autumn units, all students must have: 1. NSW Health National Criminal Record Check, 2. Prohibited Employment Declaration Form. In order to enrol in Second Year Spring units, all students must have: 1. First Aid Certificate. To be eligible to undertake fieldwork placements in public hospitals, students must comply with vaccination requirements and be prepared to submit a completed Adult Immunisation Card to placement institutions. Details of necessary vaccinations are available from NSW Health.

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

Full-time

Year 1

Autumn session

400880.1	Fundamentals of Exercise Science
400868.1	Human Anatomy and Physiology 1
400866.2	Culture, Diversity and Health
400871.1	Professional Health Competencies

Spring session

400881.1	Functional Anatomy
400869.1	Human Anatomy and Physiology 2
400863.1	Foundations of Research and Evidence-Based Practice
101614.1	Psychology and Health

Year 2

Autumn session

400882.1	Introduction to Biomechanics
400885.1	Sport and Exercise Physiology
400980.1	Sport and Exercise Psychology
400884.1	Exercise Nutrition, Body Composition and Weight Control

Spring session

400326.3	Exercise Prescription for General Populations
400903.1	Professional Development and Work Experience
400883.1	Exercise Bioenergetics
400886.1	Motor Control and Skill Acquisition

Year 3

Autumn session

400902.1	Exercise in Musculo-Skeletal Rehabilitation
400887.1	Clinical Exercise Physiology 1
400888.1	Advanced Sports Physiology
400864.2	Research Methods (Quantitative and Qualitative)

Spring session

400889.1	Applied Biomechanics of Sport and Exercise
400156.1	Practice Management for Health Professionals
400904.1	Work Experience in Sport and Exercise Science
400890.1	Resistance Training and Physiology

Bachelor of Health Science/Master of Occupational Therapy

4663.1

Students should follow the course structure for the course version relevant to the year they commenced. This course version applies to students whose commencement year in this course is 2010 or later.

Occupational therapy is a highly regarded field in which you can apply your knowledge and skills to provide therapy for people who, because of illness, injury or circumstances, are limited in their ability to perform everyday tasks. The program promotes the value of human diversity, fundamental human rights and the dignity and worth of every client. Occupational therapists find employment in public and private hospitals, rehabilitation centres, insurance companies, schools and large corporations.

The course in occupational therapy is offered as a combined Bachelor of Health Science/Master of Occupational Therapy. The first three years of the program combine studies in occupational therapy with a broad understanding of biomedicine and various health science fields to develop the professional competencies important for ethical and safe practice and high quality care and the skills to work in multidisciplinary teams. The progression to the Master's component of the combined degree is seamless and the final year focuses predominately on occupational therapy practice skills, practical experience and specialised areas. Evidence-based practice is one of the most important trends in healthcare today and a strong feature of the program.

Study Mode

Four years full-time

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Accreditation

This program is designed to meet all the requirements for accreditation by the Australian Association of Occupational Therapists and accreditation is being sought.

Admission

For local students admission is through UAC. Assumed knowledge, any 2 units of English.

Recommended studies, Physics, Chemistry, Biology and/or Personal Development Health and Physical Education.

For international students, admission is through direct application to the university with IELTS equal to 6.5 or above.

To be eligible to undertake fieldwork or practice placements, students must also comply with the NSW Health Records and Information Privacy Act (2004) and complete a relevant declaration.

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 the University of Western Sydney via UWS International.

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 UWS.

Special Requirements

To be able to enrol in the first year Spring unit 400907 Occupational therapy practice 1 and subsequent occupational therapy units, all students must have a NSW Health National Criminal Record Check, a Prohibited Employment Declaration Form and a First Aid Certificate. To be eligible to undertake fieldwork placements in public hospitals, students must comply with NSW Health vaccination requirements and be prepared to submit a completed Adult Immunisation Card to placement institutions. Details of necessary vaccinations are available from NSW Health.

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

Full-time

Year 1

Autumn session

400870.1	Population Health and Society
400868.1	Human Anatomy and Physiology 1
400160.2	Introduction to Occupational Therapy
400871.1	Professional Health Competencies

Spring session

400907.1	Occupational Therapy Practice 1
400869.1	Human Anatomy and Physiology 2
400863.1	Foundations of Research and Evidence-Based Practice

400732.1 Communication in Health

Year 2

Autumn session

400908.1	People, Environment and Occupations
400138.2	Pathophysiology 1
400864.2	Research Methods (Quantitative and Qualitative)
400866.2	Culture, Diversity and Health

Spring session

300754.1	Neuroanatomy
400881.1	Functional Anatomy
101614.1	Psychology and Health
400909.1	Occupational Therapy Practice 2

Year 3

Autumn session

400171.2	Occupation and Neurology
400169.2	Occupation and Mental Health
400912.1	Occupational Therapy Process

Continuing students take:

400910.1 Occupational Therapy Practice 3

Masters entry students take:

400911.1 Occupational Therapy Theory and Practice

Spring session

400162.2	Child and Adolescent Occupations
400165.2	Occupation and the Environment
400865.1	Evidence-Based Practice
400176.2	Occupation and Ageing

At this point, students may exit with the Bachelor of Health Science by transferring to course 4656 - Bachelor of Health Science.

Year 4

Autumn session

400913.1	Occupational Therapy Practice 4 Project
400916.1	Occupational Justice
400926.1	Ergonomics and Work Occupations
400917.1	Occupational Therapy Specialties

Spring session

400925.1	Professional Reasoning
400914.1	Occupational Therapy Practice 4
400915.1	Occupational Therapy Practice 4 Workshop

Students will graduate with Bachelor of Health Science/ Master of Occupational Therapy

Bachelor of Health Science/Master of Physiotherapy

4662.2

Students should follow the course structure for the course version relevant to the year they commenced. This course version applies to students whose commencement year in this course is 2011 or later.

Physiotherapy is a highly regarded profession and demand for physiotherapists is strong. Physiotherapists work in private practice, aged care settings, private and public hospitals, workplaces, community based agencies, schools, rehabilitation centres and chronic health management clinics. Patients range across the life span, from birth to athletes and the elderly.

The course in physiotherapy is offered as a combined Bachelor of Health Science/Master of Physiotherapy. The first three years of the program combine studies in physiotherapy with a broad understanding of biomedicine and health science fields to develop the professional competencies important for ethical and safe practice, high quality care and the skills to work in multidisciplinary teams. The progression to the Master's component of the combined degree is seamless. The final year focuses predominately on the development of physiotherapy practice skills which are used during clinical placements to treat patients in the community. Evidence-based practice is one of the most important trends in healthcare today and a strong feature of the program.

Study Mode

Four years full-time

Location

Campus	Attendance Mode
Campbelltown Campus	Full Time Internal

Accreditation

The program is designed to meet all the requirements for accreditation by the Australian Physiotherapy Council and accreditation is being sought.

Admission

For local students admission is through UAC. Assumed knowledge, any 2 units of English.

Recommended studies, Mathematics, Physics and/or Biology.

For international students, admission is through direct application to the university with IELTS equal to 7.0 or above.

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 the University of Western Sydney via UWS International.

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 UWS.

Special Requirements

In order to enrol in Second Year Autumn units, all students must have: 1. NSW Health National Criminal Record Check prior to 1 June 2010 OR a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate, 2. Prohibited Employment Declaration Form (PPED) prior to 1 June 2010 OR a Working with Children Check Student Declaration after 1 June 2010. In order to enrol in Second Year Spring units, all students must have a First Aid Certificate. To be eligible to undertake fieldwork placements in public hospitals, students must comply with vaccination requirements and be prepared to submit a completed Adult Immunisation Card to placement institutions. Details of necessary vaccinations are available from NSW Health.

Course Structure

Special Note:

Students in this program are required to participate fully in practical classes. This involves disrobing to shorts and singlet or swim-suit equivalent in mixed gender classes. Students will practice hands-on physiotherapy examination and treatment techniques on both genders, and will personally experience these techniques which will be performed on them by other students and relevant academic staff.

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

Recommended sequence

Full-time

Year 1

Autumn session

400870.1	Population Health and Society
400868.1	Human Anatomy and Physiology 1
400906.1	Introduction to Physiotherapy Practice
400871.1	Professional Health Competencies

Spring session

400732.1	Communication in Health
400869.1	Human Anatomy and Physiology 2
400863.1	Foundations of Research and Evidence-Based Practice
400881.1	Functional Anatomy

Students may enter by transfer from Bachelor of Health Science at this point.

Year 2

Autumn session

400882.1	Introduction to Biomechanics
400138.2	Pathophysiology 1
400864.2	Research Methods (Quantitative and Qualitative)
400866.2	Culture, Diversity and Health

2H session

400982.1	Core Competencies in Physiotherapy Practice
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Spring session

101614.1	Psychology and Health
400981.1	Clinical Pharmacology
300754.1	Neuroanatomy

Please Note: The confirmed structure for years 3 and 4 which covers the theory and clinical practice of physiotherapy will be available at a later date.

Bachelor of Health Science/Master of Podiatric Medicine

4661.2

Students should follow the course structure for the course version relevant to the year they commenced. This course version applies to students whose commencement year in this course is 2011 or later.

Podiatrists are best known for treating problems that people experience with their feet, but they are increasingly playing an important role in addressing chronic conditions such as diabetes. As a podiatrist, your patients can range from children to active sportspeople to the ageing. There is a large focus on footwear, from everyday wear to workwear and athletic shoes, as well as common problems such as ingrown toenails or bunions. Podiatrists are employed in sports medicine, community centres to help the aged become more mobile, private practice, ensuring children have footwear that meets their needs, and in hospital teams, addressing problems associated with chronic diseases and acute problems such as diabetes. You may also continue your training and become a podiatric surgeon.

The course in podiatry is offered as a combined Bachelor of Health Science/Master of Podiatric Medicine. The first three years of the program combine studies in podiatry with a broad understanding of biomedicine and various health science fields to develop the professional competencies important for ethical and safe practice and high quality care and the skills to work in multidisciplinary teams. The progression to the Master's component of the combined degree is seamless and the final year focuses predominately on podiatry practice skills, practical experience and specialised areas. Evidence-based practice is one of the most important trends in healthcare today and a strong feature of the program.

Study Mode

Four years full-time

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Accreditation

The program is designed to meet all the requirements of the Australian and New Zealand Podiatrists Accreditation Council and accreditation is being sought.

Admission

For local students admission is through UAC.

Assumed knowledge: Any 2 units of English.

Recommended studies: Mathematics, Physics and Biology.

For international students, admission is through direct application to the university with IELTS equal to 6.5 or above.

To be eligible to undertake fieldwork or practice placements, students must also comply with the NSW Health Records and Information Privacy Act (2004) and complete a relevant declaration.

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 the University of Western Sydney via UWS International.

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 UWS.

Special Requirements

In order to enrol in Second Year Autumn units, all students must have: 1. NSW Health National Criminal Record Check, 2. Prohibited Employment Declaration Form. In order to enrol in Second Year Spring units, all students must have a First Aid Certificate. To be eligible to undertake fieldwork placements in public hospitals, students must comply with vaccination requirements and be prepared to submit a completed Adult Immunisation Card to placement institutions. Details of necessary vaccinations are available from NSW Health.

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

Full-time

Year 1

Autumn session

400870.1	Population Health and Society
400868.1	Human Anatomy and Physiology 1
400905.1	Introduction to Podiatry
400871.1	Professional Health Competencies

Spring session

400881.1	Functional Anatomy
400869.1	Human Anatomy and Physiology 2
400863.1	Foundations of Research and Evidence-Based Practice
400732.1	Communication in Health

Students may enter by transfer from Bachelor of Health Science at this point.

Year 2

Autumn session

400882.1	Introduction to Biomechanics
400138.2	Pathophysiology 1
400864.2	Research Methods (Quantitative and Qualitative)
400866.2	Culture, Diversity and Health

Spring session

300754.1	Neuroanatomy
101614.1	Psychology and Health
400981.1	Clinical Pharmacology
400933.1	Podiatry Pre-Clinical

Year 3

Autumn session

400935.2	Podiatric Techniques 1A
400936.2	Podiatric Techniques 1B
400929.1	Podiatric Practice 1

And one elective

Spring session

400937.2	Podiatric Techniques 2A
400938.2	Podiatric Techniques 2B
400865.1	Evidence-Based Practice
400930.1	Podiatric Practice 2

At this point, students may exit with the Bachelor of Health Science by transferring to course 4656 - Bachelor of Health Science.

Year 4

Autumn session

400939.1	Podiatric Techniques 3A
400940.1	Podiatric Techniques 3B
400941.1	Podiatric Techniques 3C

[400931.1](#) Podiatric Practice 3

Spring session

400934.1	Podiatric Professional Practice Studies
400928.1	Podiatric Clinical Block
400932.1	Podiatric Practice 4

Students will graduate with Bachelor of Health Science/ Master of Podiatric Medicine

Bachelor of Health Science/Master of Traditional Chinese Medicine

4660.1

Students should follow the course structure for the course version relevant to the year they commenced. This course version applies to students whose commencement year in this course is 2010 or later.

This course prepares graduates for careers as practitioners of Traditional Chinese Medicine. Traditional Chinese medicine practitioners are usually either self-employed in private practice or work as a member of a team in a clinic that offers a range of therapies. They practice as acupuncturists and treating clients using Chinese herbal medications. There are also opportunities in medical research, product development, management and sales roles in pharmaceutical and herbal companies.

The course in Traditional Chinese Medicine is offered as a combined Bachelor of Health Science/Master of Traditional Chinese Medicine. The first three years of the program combine studies in traditional Chinese medicine, acupuncture and Chinese herbal medicine with a broad understanding of biomedicine and various health science fields to develop the professional competencies important for ethical and safe practice and high quality care and the skills to work in multidisciplinary teams. The progression to the Master's component of the combined degree is seamless and the final year focuses predominately on practical experience and specialised areas. Part of the clinical experience can be taken through an intensive clinical placement in China. Evidence-based practice is one of the most important trends in healthcare today and a strong feature of the program.

Study Mode

Four years full-time

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Accreditation

The program is designed to meet all the requirements for accreditation by the Australian Acupuncture and Chinese Medicine Association and accreditation is being sought.

Admission

For local students admission is through UAC. Assumed knowledge, Any 2 units of Higher School Certificate (or equivalent) English.

Recommended studies, Biology.

For international students, admission is through direct application to the university with IELTS equal to 6.5 or above.

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 the University of Western Sydney via UWS International.

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 UWS.

Special Requirements

In order to enrol in Second Year Autumn units, all students must have: 1. NSW Health National Criminal Record Check, 2. Prohibited Employment Declaration Form. In order to enrol in Second Year Spring units, all students must have a First Aid Certificate. To be eligible to undertake fieldwork placements in public hospitals, students must comply with vaccination requirements and be prepared to submit a completed Adult Immunisation Card to placement institutions. Details of necessary vaccinations are available from NSW Health.

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

Year 1

Autumn session

400346.1	Traditional Chinese Medicine 1
400868.1	Human Anatomy and Physiology 1
400866.2	Culture, Diversity and Health
400871.1	Professional Health Competencies

Spring session

400348.1	Traditional Chinese Medicine 2
400869.1	Human Anatomy and Physiology 2
300543.1	Cell Biology
400732.1	Communication in Health

Year 2

Autumn session

400352.1	Traditional Chinese Medicine 3
400138.2	Pathophysiology 1
400874.1	Channels and Points 1
400876.1	Chinese Materia Medica 1

Spring session

400863.1	Foundations of Research and Evidence-Based Practice
400267.2	Pathophysiology 2
400875.1	Channels and Points 2
400877.1	Chinese Materia Medica 2

Year 3

Autumn session

400864.2	Research Methods (Quantitative and Qualitative)
400878.1	Chinese Medicinal Formulas
400873.1	Acupuncture Techniques
400354.1	Traditional Chinese Medicine Practice 1

Spring session

300505.1	Pharmacology
400865.1	Evidence-Based Practice
400879.1	Clinical Assessment Methods
400356.1	Traditional Chinese Medicine Practice 2

At this point, students may exit with the Bachelor of Health Science by transferring to course 4656 - Bachelor of Health Science.

Year 4

Autumn session

400918.1	Chinese Internal Medicine 1 (PG)
400919.1	Specialities in Traditional Chinese Medicine 1 (PG)
400969.1	Classical Texts in Chinese Medicine (PG)
400920.1	Traditional Chinese Medicine Practice 3 (PG)

Spring session

400922.1	Chinese Internal Medicine 2 (PG)
400923.1	Specialities in Traditional Chinese Medicine 2 (PG)
400927.1	Block Clinical Practicum (PG)
400924.1	Traditional Chinese Medicine Practice 4 (PG)

Bachelor of Housing

3635.4

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 2010 or later.

The Bachelor of Housing will prepare students to become managers in the private housing industry. They learn how to plan, finance and construct large scale housing projects.

The Degree provides for specialised skills for working in the housing industry with a strong emphasis on the design, construction, maintenance, and economics of dwellings for human habitation. The Bachelor of Housing degree gives students the opportunity to use the university's state-of-the-art, purpose-built laboratory complex to conduct

experiments across the range of building sciences including acoustics, heat flow through a building, corrosion of materials, concrete testing, and much more.

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: property developer; housing project manager site supervisor; building surveyor; estimator; facilities manager; property manager; building consultant.

Study Mode

Three years full-time.

Location

Campus	Attendance Mode
Penrith Campus	Full Time Internal

Advanced Standing

Appropriately qualified TAFE applicants may be given up to 80 credit points worth of specified advanced Standing.

Admission

Assumed knowledge required: Normal UWS UAI 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).

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

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 UWS.

Course Structure

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below. Students should have no more than 100 credit points of Level 1 units and no fewer than 60 credit points of Level 3 Units.

Electives within the sequence may be used towards obtaining an approved major or sub-major for this award.

In some instances due to resource and demand considerations, there may be a need to rearrange the pattern set down below.

Electives within the sequence may be used towards obtaining an approved major or sub-major for this award.

Recommended Sequence

Full-time

Year 1

Autumn session

300706.1 Building 1

300729.1 Graphic Communication and Design
300674.1 Engineering, Design and Construction Practice
300016.1 Design Science

Spring session

200184.2 Introduction to Business Law
200101.2 Accounting Information for Managers
300707.1 Building 2
MG102A.2 Management Foundations

Year 2

Autumn session

300720.1 Construction Technology 1 (Civil)
200486.1 Quantity Surveying 1
200472.2 Material Science in Construction
300723.1 Development Control

Spring session

300721.1 Construction Technology 2 (Substructure)
200468.1 Estimating 1
200482.1 Construction in Practice 1

And Elective 1

Year 3

Autumn session

200485.1 Decision Making for Construction Professionals
300727.1 Project Management
300728.1 Construction Planning

And Elective 2

Spring session

300722.1 Building Regulations Studies
300053.2 Professional Practice
200292.1 Building Law

And Elective 3

Please note:

Students may choose electives from any course at UWS including the following:

Elective 1

Choose one of the following:

200503.1 Construction Information Systems
200502.2 Construction Technology 3 (Concrete Construction)

Elective 2

300748.1 Quality and Value Management

Elective 3

Choose one of the following:

Choose one of the following:

200487.2 Quantity Surveying 2

200470.2 Construction Technology 4 (Steel Construction)

Bachelor of Housing students wishing to continue on to gain Bachelor of Construction Management would be required to undertake the following electives: 200502 - Construction Technology 3 and 200470 - Construction Technology 4.

Bachelor of Industrial Design

3503.5

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 was Spring 2010 or later.

The industrial design program prepares students to be flexible and innovative, with the emphasis placed on design, and its place in and effect on society and people. The Bachelor of Industrial Design program takes account of the rapid transformation of communication and industrial technologies, and recognizes the need for designers to resolve increasingly complex issues. It provides students with the knowledge and skills to enable them to respond with flexibility to the challenges of industrial design.

Study Mode

Four years full-time. Reduced loads are available with consultation during Years 1 to 3 of the program.

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal

Advanced Standing

Where tertiary studies have been undertaken previously, credit transfer may be approved, reducing the overall study time.

Accreditation

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

Admission

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 the University of Western Sydney via UWS International.

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 UWS.

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. Refer to the 'note' after the sub-major listing, for further details.

Recommended Sequence

Full-time

Year 1

Autumn session

300674.1	Engineering, Design and Construction Practice
300016.1	Design Science
300776.1	Applied Ergonomics
200191.3	Fundamentals of Mathematics

Spring session

300462.1	Engineering and Design Concepts
300302.1	Industrial Graphics 1: Presentation
300304.2	Sustainable Design: Materials Technology
200083.1	Marketing Principles

Year 2

Autumn session

300305.2	Design Studio 1: Themes and Variations
300309.2	Sustainable Design: Life Cycle Analysis
300282.1	Industrial Graphics 2: Transition

And one sub-major alternate unit or one elective

Spring session

300308.2	Design Studio 2: The Design Proposal
300306.2	Sustainable Design: Sustainable Futures
300310.2	Industrial Graphics 3: 3D Solids

And one sub-major alternate unit or one elective

Year 3

Autumn session

300311.2	Design Studio 3: Product Realisation
300014.2	Design Management 3: Organisational Skills for Designers

And two sub-major alternate units or two electives

Spring session

300313.2	Design Studio 4: Simulate to Innovate
300314.1	Designed Inquiry

And two sub-major alternate units or two electives

Students enrolled in the 3503 - Bachelor of Industrial Design may exit the course with the 3502 - Bachelor of Design and Technology at the completion of Year 3.

Year 4**Honours Stream**

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

Autumn session

300773.1 Industrial Design Project (Commencement)

Spring session

300774.1 Industrial Design Project (Completion)

Industrial Experience

300775.1 Industrial Experience

Year 4**Coursework Stream****Autumn session**

300459.1 Major Project Commencement

Choose one of

300012.2 Design Management 1: Product Design Audit
300312.2 Industrial Graphics 4: Surface

Spring session

300460.1 Major Project Completion

Choose one of

300013.2 Design Management 2: Corporate Image and Identity
300015.2 Design Management 4: Design Process
300315.2 Industrial Graphics 5: Integrated
300735.1 Automated Manufacturing

Industrial Experience

300775.1 Industrial Experience

Majors

M3503IDM.1 Innovation Design Management
M3503IIG2.1 Interactive Industrial Graphics
M3503INTDM.1 International Design Management

Sub-majors

S3502DM.1 Design Management
S3502IG.1 Industrial Graphics
S3502SD.1 Sustainable Design

Note: In addition to the sub-major streams/electives offered from within Industrial Design (as listed above) students may choose other sub-major streams/electives within the School of Engineering and Industrial Design or the University of Western Sydney or other universities (as cross institutional studies).

Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form

Bachelor of Information and Communications Technology**3639.1**

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 2009 or later.

The Bachelor of Information and Communications Technology is a professional ICT course that provides graduates with a skills and knowledge base in networking and IT applications areas of ICT and the ability to apply practical solutions across ICT. It allows students to develop skills in application development, program design, systems analysis & design, networks, web-design, and the implementation of technology.

Their attributes can be conceptually grouped into the knowledge and skills necessary to:

- investigate - the ability to draw on a solid technological and software core of ICT knowledge and practice in analysing and developing applications;

The Bachelor of Information and Communications Technology is a three year ICT course being accredited by the Australian Computer Society. It provides a solid foundation in Networks, Databases, Systems Analysis & Design, Programming, Web Technologies, Project Management, Professional Communications and Operating Systems and associated Computer Security. It also covers the necessary mathematical and statistical skills as needed by an ICT practitioner. The foundation core provides a basis for electives, sub-majors or majors in further studies including the areas of networks, web, interactive technologies, Mathematics, Statistics, Computational Decision Making, Knowledge Discovery and Data Mining, and health informatics. Some of these majors and electives may be offered at particular campuses and subject to the approval of the Head of Program.

Study Mode

Three years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Parramatta Campus	Full Time	Internal
Penrith Campus	Full Time	Internal

Accreditation

The Bachelor of Information and Communications Technology is currently accredited with the Australian Computer Society at Professional level.

Admission

Assumed knowledge required: HSC Mathematics and any two units of HSC 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 the University of Western Sydney via UWS International.

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 UWS.

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

Full-time - Start Year Intake

Year 1

Autumn session

300580.1	Programming Fundamentals
100483.1	Principles of Professional Communication 1
300585.1	Systems Analysis and Design
300700.3	Statistical Decision Making

Spring session

300565.1	Computer Networking
300144.2	Object Oriented Analysis
300104.2	Database Design and Development

And one elective

Year 2

Autumn session

300582.1	Technologies for Web Applications
300581.1	Programming Techniques
300095.2	Computer Networks and Internets

And one elective

Spring session

300583.1	Web Systems Development
300699.1	Discrete Structures and Complexity

And two electives

Year 3

Autumn session

300570.2	Human-Computer Interaction
300578.2	Professional Development

300698.1 Operating Systems Programming

And one elective

Spring session

300579.2 Professional Experience

And three electives

Full-Time Mid Year Intake

Spring session 1

300565.1	Computer Networking
300144.2	Object Oriented Analysis
300104.2	Database Design and Development
300580.1	Programming Fundamentals

Autumn session 2

300582.1	Technologies for Web Applications
300585.1	Systems Analysis and Design
300700.3	Statistical Decision Making

And one elective

Spring session 3

300583.1	Web Systems Development
300699.1	Discrete Structures and Complexity

And two electives

Autumn session 4

300570.2	Human-Computer Interaction
300581.1	Programming Techniques
100483.1	Principles of Professional Communication 1
300095.2	Computer Networks and Internets

Spring session 5

300579.2 Professional Experience

Three electives

Autumn session 6

300578.2	Professional Development
300698.1	Operating Systems Programming

And two electives

Electives for majors and sub-majors

Electives for majors and sub-majors may not be available on all campuses and may create timetable clashes (given the range of possible progression options). Where an elective cannot be taken, the Head of Program may approve equivalent units where there is considerable overlap. Such units might be found within the School at UWS or cross-institutional study.

Please note: Majors and sub-majors are optional.

Majors

M3025.1	Networking
M3001.1	Advanced Programming
M3000.1	Computer Systems
M3002.1	Information Technology
M3004.1	Health Informatics

M3003.1	Web Systems Development
M3023.1	Computational Decision Making
M3005.1	Entertainment Computing
M3024.1	Knowledge Discovery and Data Mining
M3021.1	Mathematics
M3022.1	Statistics

Sub-majors

SM3031.1	IT Support
SM3005.1	Applied Mathematics
SM3000.1	Computer Systems
SM3004.1	Formal Systems
SM3001.1	Systems Administration
SM3003.1	Systems Programming
SM3002.1	Systems Security
SM3006.1	Web Application Development (for Computing Students)
SM3007.1	Web Application Development (for Non-Computing Students)
SM3008.1	Networking
SM3010.1	Health Information Applications
SM3009.1	Health Information Management
SM3027.1	Computational Decision Making
SM3011.1	Entertainment Computing
SM3028.1	Knowledge Discovery and Data Mining
SM3025.1	Mathematics
SM3026.1	Statistics

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form

Bachelor of Information and Communications Technology (Enhanced Pathway)

3661.1

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 2010 or later.

The Bachelor of Information and Communications Technology is a professional ICT course that provides graduates with a skills and knowledge base in networking and IT applications areas of ICT and the ability to apply practical solutions across ICT. It allows students to develop skills in application development, program design, systems analysis & design, networks, web-design, and the implementation of technology. Their attributes can be conceptually grouped into the knowledge and skills necessary to:

Study Mode

Three years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Penrith Campus	Full Time	Internal

Accreditation

The Bachelor of Information and Communications Technology is currently accredited with the Australian Computer Society at Professional level.

Admission

Eligibility for admission to the Bachelor of Information and Communications Technology (Enhanced Pathway) is based on the following minimum requirements: Completed TAFE NSW Certificate IV of Information Technology (Networking) 19009 (ICA40405).

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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Upon completion of the TAFE Diploma of IT Networking and CISCO accreditation, students will be eligible for a maximum of 130 credit points of specified and/or unspecified advanced standing. Students will then complete 110 credit points of Bachelor of Information and Communications Technology units as per recommended sequence below.

Year 2

Quarter 1

300744.1 Tools and Techniques for Website Building

Autumn session

300580.1 Programming Fundamentals

Spring session

300104.2 Database Design and Development

Year 3

Autumn session

300581.1 Programming Techniques
300698.1 Operating Systems Programming
300570.2 Human-Computer Interaction

One elective

Spring session

300144.2	Object Oriented Analysis
300583.1	Web Systems Development
300699.1	Discrete Structures and Complexity
300579.2	Professional Experience

Bachelor of Information and Communications Technology/Bachelor of Arts

3654.1

Students should follow the course structure for the course version relevant to the year they commenced. This course version applies to students who commenced study in this course in 2010 or later.

This double degree program is designed in recognition of the globalizing nature of the information technology industry. In addition to providing a strong technical background in IT, the course also provide students the necessary knowledge in the areas of Bachelor of Arts in Global Studies Key Program, as well as the following majors: Asian Studies and International Relations; Religion, Anthropology and Philosophy; and submajors in Chinese and Japanese language, Asian Studies and International Relations; Religion, Anthropology and Philosophy; and Global Studies.

In the IT area, the program allows students to develop skills in application development, program design, systems analysis & design, networks, web-design, and the implementation of technology.

Study Mode

Four years full-time.

Location

Campus	Attendance Mode
Parramatta Campus	Full Time Internal

Accreditation

The Bachelor of Information and Communications Technology is currently accredited with the Australian Computer Society at Professional level.

Admission

Assumed knowledge required: HSC Mathematics and any two units of HSC 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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Qualification for this award requires the successful completion of 320 credit points as specified in the structure below.

Students who complete this award will graduate with a Bachelor of Information and Communications Technology and a Bachelor of Arts.

The conceptual design of this BICT/BA double degree is as follows.

Years 1 to 3 - Students will complete 160cp of Bachelor of Information and Communications Technology units as listed in the course structure below.

In years 1 to 4 they will complete the 4 BA core units and 12 BA key program units from the following key programs in the Bachelor of Arts as offered on Parramatta campus only.

- Global Studies key program
- Humanities key program with the following majors only:
 - Asian Studies and International Relations major and/or

Sub-majors are available in these BA key programs as follows.

- Asian Studies and International Relations
- Religion, Anthropology and Philosophy
- Global Studies
- Japanese
- Chinese

Arts Units

For details of the relevant Arts units, refer to the current listing of Bachelor of Arts, course code 1604.

Year 1**Autumn session**

300580.1	Programming Fundamentals
100483.1	Principles of Professional Communication 1
300585.1	Systems Analysis and Design
300700.3	Statistical Decision Making

Spring session

300565.1	Computer Networking
300144.2	Object Oriented Analysis
300104.2	Database Design and Development

Arts Core 1

Year 2**Autumn session**

- 300582.1 Technologies for Web Applications
 300581.1 Programming Techniques
 300095.2 Computer Networks and Internets

Arts Core 2

Spring session

- 300583.1 Web Systems Development
 300699.1 Discrete Structures and Complexity

Arts Core 3

Arts Key Program Unit 1

Year 3**Autumn session**

- 300570.2 Human-Computer Interaction
 300578.2 Professional Development
 300698.1 Operating Systems Programming

Arts Core 4

Spring session

- 300579.2 Professional Experience

Arts Key Program Unit 2

Arts Key Program Unit 3

Arts Key Program Unit 4

Year 4**Autumn session**

- Arts Key Program Unit 5
 Arts Key Program Unit 6
 Arts Key Program Unit 7
 Arts Key Program Unit 8

Spring session

- Arts Key Program Unit 9
 Arts Key Program Unit 10
 Arts Key Program Unit 11
 Arts Key Program Unit 12

Bachelor of Information and Communications Technology/Bachelor of Business and Commerce

3655.2

Students should follow the course structure for the course version relevant to the year they commenced. This course version applies to students who commenced study in this course in 2011 or later.

This double degree program targets the wide application of information technology in Business and Commerce. It provides students with a strong technical background in IT and Business and Commerce. It allows students to develop

skills in application development, program design, systems analysis & design, networks, web-design, and the implementation of technology.

This degree combines information technology with one of nine key programs in:

Study Mode

Four years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Parramatta Campus	Full Time	Internal

Accreditation

The Bachelor of Information and Communications Technology is currently accredited with the Australian Computer Society at Professional level.

Admission

Eligibility for admission to the Bachelor of Information and Communications Technology/Bachelor of Business and Commerce is based on the following requirements:

Assumed knowledge required: HSC Mathematics and two units of HSC 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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Qualification for this award requires the successful completion of 320 credit points as per the structure below.

Students are eligible to graduate with a Bachelor of Information and Communications Technology, on completion of all the 24 units listed in the first three years of the relevant sequence below.

The conceptual design of this Bachelor of Information and Communications Technology/Bachelor of Business and Commerce double degree is as follows.

- 1) Years 1 to 3 students complete their BICT (16 units) and two elective units;
- 2) Also, in Years 1 to 3 students complete five common BBC core units and one BBC key program unit. Students may also elect to take two alternate BBC units in Year 1 which will be deemed equivalent to two BICT units. In Year 4 they complete eight BBC key program units.
- 3) Students within this course will only be permitted to undertake the following key programs within 2739 Bachelor Business and Commerce.

* Applied Finance

- * Global Operations and Supply Chain Management
- * Hospitality Management
- * Human Resource Development and Organisational Development
- * Human Resource Management and Industrial Relations
- * International Business
- * Management
- * Marketing
- * Sport Management

Please note that not all key programs are offered on Parramatta campus.

Bachelor of Information and Communications Technology/ Bachelor of Business and Commerce (Applied Finance)

Parramatta and Campbelltown campus

Year 1

Autumn session

- 300585.1** Systems Analysis and Design
300580.1 Programming Fundamentals

Choose one of

- 200336.2** Business Academic Skills
100483.1 Principles of Professional Communication 1

Choose one of

- 300700.3** Statistical Decision Making
200032.3 Statistics for Business

Spring session

- 200083.1** Marketing Principles
300144.2 Object Oriented Analysis
300565.1 Computer Networking
300104.2 Database Design and Development

Year 2

Autumn session

- 200571.1** Management Dynamics
300582.1 Technologies for Web Applications
300581.1 Programming Techniques
300095.2 Computer Networks and Internets

Spring session

- 300583.1** Web Systems Development
300699.1 Discrete Structures and Complexity
200184.2 Introduction to Business Law
200525.1 Principles of Economics

Year 3

Autumn session

- 300570.2** Human-Computer Interaction
300578.2 Professional Development
300698.1 Operating Systems Programming
200101.2 Accounting Information for Managers

Spring session

- 300579.2** Professional Experience
200488.2 Corporate Financial Management

And two electives

Year 4

Autumn session

- 200549.1** The Australian Macroeconomy
200048.1 Financial Institutions and Markets
200537.2 Economics and Finance Engagement Project

And one alternate unit

Spring session

- 200053.2** Economic Modelling
200057.2 Investment Management

And two alternate units

Alternate units

- 200078.1** Portfolio Management
200055.3 International Finance
200077.1 The Superannuation Industry
200079.1 Derivatives
200518.1 Behavioural Finance
200059.1 Financial Economics

Bachelor of Information and Communications Technology/ Bachelor of Business and Commerce (Global Operations and Supply Chain Management)

Parramatta campus

Year 1

Autumn session

- 300585.1** Systems Analysis and Design
300580.1 Programming Fundamentals

Choose one of

- 200336.2** Business Academic Skills
100483.1 Principles of Professional Communication 1

Choose one of

- 300700.3** Statistical Decision Making
200032.3 Statistics for Business

Spring session

- 200083.1** Marketing Principles
300144.2 Object Oriented Analysis
300565.1 Computer Networking
300104.2 Database Design and Development

Year 2

Autumn session

- 200571.1** Management Dynamics

300582.1 Technologies for Web Applications
300581.1 Programming Techniques
300095.2 Computer Networks and Internets

Spring session

300583.1 Web Systems Development
300699.1 Discrete Structures and Complexity
200184.2 Introduction to Business Law
200525.1 Principles of Economics

Year 3**Autumn session**

300570.2 Human-Computer Interaction
300578.2 Professional Development
300698.1 Operating Systems Programming
200101.2 Accounting Information for Managers

Spring session

300579.2 Professional Experience
200677.2 Global Supply Chain Management

And two electives

Year 4**Autumn session**

200528.1 Management of Projects
200588.1 Global Operations and Logistics
 Management
200667.1 Global Enterprise Resource Planning
200668.1 Technology Management for
 Competitiveness

Spring session

200167.1 Quality Management
200585.1 Organisational Behaviour
200565.2 Operations and Logistics in Practice
200565.2 Operations and Logistics in Practice
200162.1 Business Report

Bachelor of Information and Communications Technology/ Bachelor of Business and Commerce (Hospitality Management)

Parramatta campus**Year 1****Autumn session**

300585.1 Systems Analysis and Design
300580.1 Programming Fundamentals

Choose one of

100483.1 Principles of Professional Communication 1
200336.2 Business Academic Skills

Choose one of

200032.3 Statistics for Business
300700.3 Statistical Decision Making

Spring session

200083.1 Marketing Principles
300144.2 Object Oriented Analysis
300565.1 Computer Networking
300104.2 Database Design and Development

Year 2**Autumn session**

200571.1 Management Dynamics
300582.1 Technologies for Web Applications
300581.1 Programming Techniques
300095.2 Computer Networks and Internets

Spring session

300583.1 Web Systems Development
300699.1 Discrete Structures and Complexity
200184.2 Introduction to Business Law
200525.1 Principles of Economics

Year 3**Autumn session**

300570.2 Human-Computer Interaction
300578.2 Professional Development
300698.1 Operating Systems Programming
200273.3 Managing Service and Experience

Spring session

300579.2 Professional Experience
200101.2 Accounting Information for Managers

And two electives

Year 4**Autumn session**

200709.1 Managing the Accommodation Experience
200710.1 Managing the Food and Beverage
 Experience
200708.1 Hospitality Industry
200707.1 Service Industry Studies

Spring session

200584.2 Hospitality Management Operations
200742.1 Sport and Hospitality Event Management
200148.1 Planning and Design of Hospitality Facilities
200561.2 Hospitality Management Applied Project

Bachelor of Information and Communications Technology/ Bachelor of Business and Commerce (Human Resource Development and Organisational Development)

Parramatta campus**Year 1****Autumn session**

300585.1 Systems Analysis and Design

300580.1 Programming Fundamentals

Choose one of

- 200336.2** Business Academic Skills
100483.1 Principles of Professional Communication 1

Choose one of

- 300700.3** Statistical Decision Making
200032.3 Statistics for Business

Spring session

- 200083.1** Marketing Principles
300144.2 Object Oriented Analysis
300565.1 Computer Networking
300104.2 Database Design and Development

Year 2**Autumn session**

- 200571.1** Management Dynamics
300582.1 Technologies for Web Applications
300581.1 Programming Techniques
300095.2 Computer Networks and Internets

Spring session

- 300583.1** Web Systems Development
300699.1 Discrete Structures and Complexity
200184.2 Introduction to Business Law
200525.1 Principles of Economics

Year 3**Autumn session**

- 300570.2** Human-Computer Interaction
300578.2 Professional Development
300698.1 Operating Systems Programming
200101.2 Accounting Information for Managers

Spring session

- 300579.2** Professional Experience
200300.1 Managing People at Work

And two electives

Year 4**Autumn session**

- 200610.1** Employee Training and Development
200243.2 Work Employment and the Labour Market
200570.2 Management of Change
200175.4 Managing Human Resources and Industrial Relations

Spring session

- 200376.1** Managing and Developing Careers
200157.2 Organisational Learning and Development
200159.2 Organisation Analysis and Design
200381.3 Human Resources Development Seminar

Bachelor of Information and Communications Technology/ Bachelor of Business and Commerce (Human Resource Management and Industrial Relations)**Parramatta and Campbelltown campus****Year 1****Autumn session**

- 300580.1** Programming Fundamentals
300585.1 Systems Analysis and Design

Choose one of

- 200336.2** Business Academic Skills
100483.1 Principles of Professional Communication 1

Choose one of

- 300700.3** Statistical Decision Making
200032.3 Statistics for Business

Spring session

- 200083.1** Marketing Principles
300144.2 Object Oriented Analysis
300565.1 Computer Networking
300104.2 Database Design and Development

Year 2**Autumn session**

- 200571.1** Management Dynamics
300582.1 Technologies for Web Applications
300581.1 Programming Techniques
300095.2 Computer Networks and Internets

Spring session

- 300583.1** Web Systems Development
300699.1 Discrete Structures and Complexity
200184.2 Introduction to Business Law
200525.1 Principles of Economics

Year 3**Autumn session**

- 300570.2** Human-Computer Interaction
300578.2 Professional Development
300698.1 Operating Systems Programming
200101.2 Accounting Information for Managers

Spring session

- 300579.2** Professional Experience
200300.1 Managing People at Work

And two electives

Year 4**Autumn session**

- 200614.1** Enterprise Industrial Relations
200621.2 International Human Resource Management

200616.2 Workplace Behaviour
200613.1 Negotiation, Bargaining and Advocacy

Spring session

200739.1 Reward and Performance Management
200740.1 Human Resource and Industrial Relations Strategy
200575.2 Processes and Evaluation in Employment Relations

Choose one of

200610.1 Employee Training and Development
200150.1 Managing Diversity
200753.1 Occupational Health and Safety

Bachelor of Information and Communications Technology/ Bachelor of Business and Commerce (International Business)

Parramatta campus**Year 1****Autumn session**

300580.1 Programming Fundamentals
300585.1 Systems Analysis and Design

Choose one of

100483.1 Principles of Professional Communication 1
200336.2 Business Academic Skills

Choose one of

200032.3 Statistics for Business
300700.3 Statistical Decision Making

Spring session

200083.1 Marketing Principles
300144.2 Object Oriented Analysis
300565.1 Computer Networking
300104.2 Database Design and Development

Year 2**Autumn session**

200571.1 Management Dynamics
300582.1 Technologies for Web Applications
300581.1 Programming Techniques
300095.2 Computer Networks and Internets

Spring session

300583.1 Web Systems Development
300699.1 Discrete Structures and Complexity
200184.2 Introduction to Business Law
200525.1 Principles of Economics

Year 3**Autumn session**

300570.2 Human-Computer Interaction
300578.2 Professional Development

300698.1 Operating Systems Programming
200101.2 Accounting Information for Managers

Spring session

300579.2 Professional Experience
200591.1 Introduction to International Business

And two electives

Year 4**Autumn session**

200541.1 Globalisation and Trade
200094.1 International Marketing
200626.1 International Business Strategy
200595.2 International Business Finance

Spring session

200590.1 International Business Project
200374.2 International Marketing Research
200589.1 Export Strategy and Applications

Choose one of

200098.1 The Markets of Asia
200099.2 The Markets of Europe

Bachelor of Information and Communications Technology/ Bachelor of Business and Commerce (Management)

Parramatta and Campbelltown campus**Year 1****Autumn session**

300580.1 Programming Fundamentals
300585.1 Systems Analysis and Design

Choose one of

200336.2 Business Academic Skills
100483.1 Principles of Professional Communication 1

Choose one of

200032.3 Statistics for Business
300700.3 Statistical Decision Making

Spring session

200083.1 Marketing Principles
300144.2 Object Oriented Analysis
300565.1 Computer Networking
300104.2 Database Design and Development

Year 2**Autumn session**

200571.1 Management Dynamics
300582.1 Technologies for Web Applications
300581.1 Programming Techniques
300095.2 Computer Networks and Internets

Spring session

300583.1	Web Systems Development
300699.1	Discrete Structures and Complexity
200184.2	Introduction to Business Law
200525.1	Principles of Economics

Year 3**Autumn session**

300570.2	Human-Computer Interaction
300578.2	Professional Development
300698.1	Operating Systems Programming
200101.2	Accounting Information for Managers

Spring session

300579.2	Professional Experience
200585.1	Organisational Behaviour

And two electives

Year 4**Autumn session**

200158.2	Business, Society and Policy
200586.1	Cross Cultural Management
200570.2	Management of Change
200752.1	Power, Politics and Knowledge

Spring session

200588.1	Global Operations and Logistics Management
200159.2	Organisation Analysis and Design
200568.2	Contemporary Management Issues
200587.1	Strategic Management

Bachelor of Information and Communications Technology/ Bachelor of Business and Commerce (Marketing)**Parramatta and Campbelltown campus****Year 1****Autumn session**

300580.1	Programming Fundamentals
300585.1	Systems Analysis and Design

Choose one of

200336.2	Business Academic Skills
100483.1	Principles of Professional Communication 1

Choose one of

200032.3	Statistics for Business
300700.3	Statistical Decision Making

Spring session

200083.1	Marketing Principles
300144.2	Object Oriented Analysis
300565.1	Computer Networking
300104.2	Database Design and Development

Year 2**Autumn session**

200571.1	Management Dynamics
300582.1	Technologies for Web Applications
300581.1	Programming Techniques
300095.2	Computer Networks and Internets

Spring session

300583.1	Web Systems Development
300699.1	Discrete Structures and Complexity
200184.2	Introduction to Business Law
200525.1	Principles of Economics

Year 3**Autumn session**

300570.2	Human-Computer Interaction
300578.2	Professional Development
300698.1	Operating Systems Programming
200101.2	Accounting Information for Managers

Spring session

300579.2	Professional Experience
200084.1	Consumer Behaviour

And two electives

Year 4**Autumn session**

200086.2	Marketing Communications
200592.1	Marketing Research
200087.1	Strategic Marketing Management
200094.1	International Marketing

Spring session

200090.2	Marketing of Services
200088.1	Brand and Product Management
200091.2	Business to Business Marketing
200096.2	Marketing Planning Project

Bachelor of Information and Communications Technology/ Bachelor of Business and Commerce (Sport Management)**Campbelltown campus****Year 1****Autumn session**

300585.1	Systems Analysis and Design
300580.1	Programming Fundamentals

Choose one of

200336.2	Business Academic Skills
100483.1	Principles of Professional Communication 1

Choose one of

300700.3 Statistical Decision Making
200032.3 Statistics for Business

Spring session

200083.1 Marketing Principles
300144.2 Object Oriented Analysis
300565.1 Computer Networking
300104.2 Database Design and Development

Year 2

Autumn session

200571.1 Management Dynamics
300582.1 Technologies for Web Applications
300581.1 Programming Techniques
300095.2 Computer Networks and Internets

Spring session

300583.1 Web Systems Development
300699.1 Discrete Structures and Complexity
200184.2 Introduction to Business Law
200525.1 Principles of Economics

Year 3

Autumn session

300570.2 Human-Computer Interaction
300578.2 Professional Development
300698.1 Operating Systems Programming
200705.1 The World of Sport Management

Spring session

300579.2 Professional Experience
200101.2 Accounting Information for Managers

And two electives

Year 4

Autumn session

200665.1 Strategic Communication in Sport
200273.3 Managing Service and Experience
200754.1 Sports Management - Planning and Development
200707.1 Service Industry Studies

Spring session

200664.1 Sport Management Internship
200742.1 Sport and Hospitality Event Management
200751.1 Sport Management Applied Project
400335.2 Contemporary Issues in Sport Management

Bachelor of Information and Communications Technology/Bachelor of Business and Commerce (Accounting)

3656.1

Students should follow the course structure for the course version relevant to the year they commenced. This course version applies to students who commenced study in this course in 2010 or later.

This double degree program targets the wide application of information technology in Business and Commerce in Accounting. It provides students with a strong technical background in IT and Business and Commerce in Accounting. It allows students to develop skills in application development, program design, systems analysis & design, networks, web-design, and the implementation of technology.

This degree combines information technology with knowledge required by professional Accountants.

Study Mode

Four years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Parramatta Campus	Full Time	Internal

Accreditation

The Bachelor of Information and Communications Technology is currently accredited with the Australian Computer Society at Professional level. The Bachelor of Business and Commerce has accreditation with CPA Australia and The Institute of Chartered Accountants in Australia..

Admission

Eligibility for admission to the Bachelor of Information and Communications Technology/Bachelor of Business and Commerce (Accounting) is based on the following requirements:

Assumed knowledge required: HSC Mathematics and two units of HSC 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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Qualification for this award requires the successful completion of 320 credit points as per the structure below.

Students are eligible to graduate with a Bachelor of Information and Communications Technology, on completion of all the 24 units listed in the first three years of the relevant sequence below.

The conceptual design of this Bachelor of Information and Communications Technology/Bachelor of Business and Commerce (Accounting) double degree is as follows.

- 1) Years 1 to 3 students complete their Bachelor of Information and Communications Technology (16 units);
- 2) Also, in Years 1 to 3 students complete two common core units of the Bachelor of Business and Commerce and six of the Bachelor of Business and Commerce Accounting key program units. Students may also elect to take two alternate Bachelor of Business and Commerce units (as suggested in the course document) in Year 1 which will be deemed equivalent to two Bachelor of Information and Communications Technology units. In Year 4 they complete three Bachelor of Business and Commerce common core units and five Bachelor of Business and Commerce Accounting key program units.

Year 1

Autumn session

- 300580.1** Programming Fundamentals
300585.1 Systems Analysis and Design

Choose one of

- 100483.1** Principles of Professional Communication 1
200336.2 Business Academic Skills

Choose one of

- 300700.3** Statistical Decision Making
200032.3 Statistics for Business

Spring session

- 300565.1** Computer Networking
300144.2 Object Oriented Analysis
300104.2 Database Design and Development
200101.2 Accounting Information for Managers

Year 2

Autumn session

- 300582.1** Technologies for Web Applications
300581.1 Programming Techniques
300095.2 Computer Networks and Internets
200111.1 Financial Accounting Applications

Spring session

- 300583.1** Web Systems Development
300699.1 Discrete Structures and Complexity
200116.3 Management Accounting Fundamentals
200488.2 Corporate Financial Management

Year 3

Autumn session

- 300570.2** Human-Computer Interaction
300578.2 Professional Development
300698.1 Operating Systems Programming
200536.1 Intermediate Financial Accounting

Spring session

- 300579.2** Professional Experience
200534.2 Accounting Information Systems
200109.3 Corporate Accounting Systems
200571.1 Management Dynamics

Year 4

Autumn session

- 200535.1** Auditing and Assurance Services
200108.1 Contemporary Management Accounting
200183.3 Law of Business Organisations
200525.1 Principles of Economics

Spring session

- 200184.2** Introduction to Business Law
200083.1 Marketing Principles
200267.1 Advanced Accounting
200118.2 The Accountant as a Consultant

Bachelor of Information Technology (Honours)

3613.1

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 2004 or later.

The Honours program encourages independence in learning and research; further develops academic ability, provides the opportunity to pursue undergraduate studies to a more advanced level, deepen intellectual understanding in the major field of study and develop research skills. Honours is a recognised point of entry into postgraduate research studies at PhD and Masters levels. If a career in industry is sought, Honours enables study to a more advanced level with a higher qualification. The course has the opportunity for direct commercial and industrial involvement with a diverse range of organisations through the provision and joint supervision of research projects.

Study Mode

One year full-time or two years part-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal
Parramatta Campus	Full Time	Internal

Campus	Attendance	Mode
Parramatta Campus	Part Time	Internal
Penrith Campus	Full Time	Internal
Penrith Campus	Part Time	Internal

Accreditation

Professional accreditation by the Australian Computer Society may be available, depending on a student's undergraduate degree.

Course Structure

Qualification for this award requires the successful completion of 80 credit points including the units listed below.

The award is a year long program that will be divided into three main components: Computing Research Process and Practice (10 credit points), Computing Honours Seminar Program (10 credit points) and the Computing Honours Thesis (60 credit points).

Students must enrol in 300364 Computing Honours Seminar Program and 300363 Computing Honours Thesis in both Autumn and Spring sessions.

Full-time

Year 1

Autumn session

300365.1	Computing Research Process and Practice
300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Spring session

300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Part-time

Year 1

Autumn session

300365.1	Computing Research Process and Practice
300363.2	Computing Honours Thesis

Spring session

300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Year 2

Autumn session

300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Spring session

300363.2	Computing Honours Thesis
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Bachelor of Medical Research

4647.2

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 2010 or later.

This course gives students who are enrolled in the UWS Bachelor of Medicine / Bachelor of Surgery the opportunity to take leave of absence from the normal medical course for 12 months full-time or 24 months part-time, after successfully completing Years 1 and 2 of MBBS, in order to gain a more detailed experience in medical research than is provided in the normal medical course. Years 1 and 2 of the Bachelor of Medical Research are identical to Years 1 and 2 of MBBS. It is expected that students will return to the medical course on completion of the intercalated year, which will complete the requirements for the Bachelor of Medical Research, but the degree is also available as an exit point for those who do not wish to resume MBBS.

Study Mode

Two semesters.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal

Accreditation

The Australian Medical Council accredits the MBBS program, and the addition of an extra year of research, as proposed here, meets one of their standards concerning provision of opportunities for research during medical courses.

Admission

Must be currently enrolled in Bachelor of Medicine/Bachelor of Surgery (MB BS) at UWS, and have successfully completed at least two years of that course, normally with a credit average, before being admitted to year 3 of the intercalated Bachelor of Medical Research.

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

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

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 UWS.

Course Structure

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

For students entering Year 3 in 2010

Year 1

1H session (year long subjects)

- 400737.1** Scientific Basis of Medicine 1
400738.1 Health Practice 1

2H session

- 400737.1** Scientific Basis of Medicine 1
400738.1 Health Practice 1

Year 2

1H session (year long subjects)

- 400862.1** Foundations of Medicine 2

2H session

- 400862.1** Foundations of Medicine 2

Year 3

1H session

- 400813.1** Medical Research Project

Choose one of

- 300411.3** Research Methodology and Experimental Design
400148.2 Quantitative Research

Note: 300411 is a 20cp unit - if students elect to undertake this unit, they must enrol for both 1H and 2H sessions.

2H session

- 400813.1** Medical Research Project

Choose one of

- 300411.3** Research Methodology and Experimental Design
400137.1 Introduction to Research for Health Sciences

For students entering Year 3 in 2011

Year 1

1H session (year long subjects)

- 400861.1** Foundations of Medicine 1

2H session

- 400861.1** Foundations of Medicine 1

Year 2

1H session (year long subjects)

- 400862.1** Foundations of Medicine 2

2H session

- 400862.1** Foundations of Medicine 2

Year 3

1H session

- 400813.1** Medical Research Project

Choose one of

- 300411.3** Research Methodology and Experimental Design
400148.2 Quantitative Research

Note: 300411 is a 20cp unit - if students elect to undertake this unit, they must enrol for both 1H and 2H sessions.

2H session

- 400813.1** Medical Research Project

Choose one of

- 300411.3** Research Methodology and Experimental Design
400137.1 Introduction to Research for Health Sciences

Bachelor of Medical Science

3577.5

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 2011 or later.

This degree comprises three areas of major: biomedical science, medicinal chemistry and human bioscience. The biomedical science major focuses on microbiology, biochemistry and aspects of health. The medicinal chemistry major focuses on chemistry and biochemistry, while the human bioscience major focuses on anatomy, physiology and pharmacology. Graduates of this degree will find employment in areas such as medical research laboratories, hospital laboratories and in pathology laboratories and be well suited for positions in the pharmaceutical, medical sales and various research and quality control laboratories, as well as further study including research degrees and graduate medicine degrees.

Study Mode

Three years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Campus	Attendance	Mode
Campbelltown Campus	Part Time	Internal
Hawkesbury Campus	Full Time	Internal
Hawkesbury Campus	Part Time	Internal

Accreditation

The Bachelor of Medical Science (Medicinal Chemistry Major) is accredited by The Royal Australian Chemical Institute Incorporated.

Admission

Assumed knowledge required: At least two of biology, chemistry, mathematics and physics.

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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

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

Please note: At least 60 credit points must be at Level 3 or above.

Recommended Sequence

Year 1

- 300778.1** Introduction to Anatomy
300753.1 Introduction to Human Physiology

Plus one unit from each of the following combinations:

Choose one of

- 300543.1** Cell Biology
300793.1 Biology B - Cellular Processes

Choose one of

- 300554.1** Principles of Chemistry
300224.2 Chemistry 1

Choose one of

- 300539.1** Biodiversity
300792.1 Biology A - The Diversity of Life

Choose one of

- 300550.1** Medicinal Chemistry
300225.2 Chemistry 2

And two Alternate units (see Note 1)

Note 1 - Year 1 Alternate Units

Choose two of

- 300558.1** Physics 1
300134.1 Introduction to Information Technology

Mathematics/Statistics units

- 200263.2** Biometry
300672.1 Mathematics 1A
200191.3 Fundamentals of Mathematics
300700.3 Statistical Decision Making

Note: Only one of the above mathematics/statistics units may be selected as an Alternate unit. Students who wish to select more than one, may include them as elective units.

Year 2

- 300323.2** Pathological Basis of Disease

Choose one of

- 300555.1** Proteins and Genes
300219.3 Biochemistry 1

Choose one of

- 300548.1** Human Metabolism and Disease
300220.1 Biochemistry 2

And three units consistent with selected Major (below)
 And two electives

Year 3

And four units consistent with selected Major (below)
 And four electives

Biomedical Science Major

- M3039.1** Biomedical Science

Medicinal Chemistry Major

- M3040.1** Medicinal Chemistry

Human Bioscience Major

- M3041.1** Human Bioscience

Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form

Bachelor of Medical Science (Honours)

3610.2

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 was 2011 or later.

The Honours program encourages independent learning and research, further develops academic ability, provides the opportunity to pursue undergraduate studies to a more advanced level, deepens intellectual understanding in the major field of study and develops research skills. An Honours degree is a recognised point of entry for postgraduate research studies at PhD level and enhances a graduate's ability to perform at a high level in a commercial or public organisation. The Honours program consists of a rigorous program of supervised research on a medically related topic, culminating in the production of a thesis and presentation of a final seminar. Students enrol in a 60 credit point honours project and either a 20 credit point research methodology and experimental design unit or a 20 credit point advanced topics and research skills unit, allowing them to explore more advanced topics, including wider areas of research and their applications in science technology and medicine. Although the Honours course is available on several different campuses, some or all of the lectures, workshops and seminars may be held centrally at a single campus to ensure that students are exposed to as wide a range of research topics as possible. The course can provide opportunities for direct commercial and industrial involvement with a diverse range of organisations through the provision of, and joint supervision of, research projects.

Study Mode

One year full-time or two years part-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal
Hawkesbury Campus	Full Time	Internal
Hawkesbury Campus	Part Time	Internal
Parramatta Campus	Full Time	Internal
Parramatta Campus	Part Time	Internal
Penrith Campus	Full Time	Internal
Penrith Campus	Part Time	Internal

Course Structure

Qualification for this award requires the successful completion of 80 credit points as per the recommended sequence below.

Please note: Students must enrol in 300747 Advanced Topics and Research Skills and 300412 Science, Technology and Environment Honours Projects in both 1H and 2H sessions.

Recommended Sequence

Full-time

Year 1

1H

300747.1	Advanced Topics and Research Skills
300412.2	Science, Technology and Environment Honours Project

2H

300747.1	Advanced Topics and Research Skills
300412.2	Science, Technology and Environment Honours Project

Part-time

Year 1

1H

300747.1	Advanced Topics and Research Skills
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2H

300747.1	Advanced Topics and Research Skills
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Year 2

1H

300412.2	Science, Technology and Environment Honours Project
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2H

300412.2	Science, Technology and Environment Honours Project
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Bachelor of Medical Science/Bachelor of Information and Communications Technology

3657.2

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 2011 or later.

This degree targets the explosion of information in biomedical science. In addition to a strong grounding in medical science, graduates develop skills and a knowledge base in networking and IT applications and the ability to apply practical solutions across ICT. Students develop skills in application development, program design, systems analysis & design, networks, web-design, and the implementation of technology. This degree combines information technology with one of three majors in the medical science - biomedical science ; medicinal chemistry, or human bioscience.

Study Mode

Four years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Accreditation

The Bachelor of Information and Communications Technology is currently accredited with the Australian Computer Society at Professional level.

Admission

Assumed knowledge required: HSC Mathematics, any two units of HSC English and at least one of biology, chemistry, or physics.

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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Qualification for this award requires the successful completion of 320 credit points as specified in the structure below.

Requirements for the Bachelor of Medical Science include completion of one of three majors: Biomedical Science, Medicinal Chemistry or Human Bioscience. The structures for the combined degrees below show the sequence of units necessary for each of these three majors.

Students who complete this award will graduate with a Bachelor of Medical Science and a Bachelor of Information and Communications Technology.

Bachelor of Medical Science / Bachelor of Information and Communications Technology - Biomedical Science Major

Year 1

Autumn session

300539.1	Biodiversity
300554.1	Principles of Chemistry
300580.1	Programming Fundamentals
300778.1	Introduction to Anatomy

Spring session

300543.1	Cell Biology
300550.1	Medicinal Chemistry
300700.3	Statistical Decision Making
300753.1	Introduction to Human Physiology

Year 2

Autumn session

300555.1	Proteins and Genes
300300.1	Microbiology 1
300582.1	Technologies for Web Applications
300585.1	Systems Analysis and Design

Spring session

300548.1	Human Metabolism and Disease
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300321.1	Microbiology 2
300323.2	Pathological Basis of Disease
300144.2	Object Oriented Analysis

Year 3

Autumn session

300549.1	Human Molecular Biology
100483.1	Principles of Professional Communication 1
300581.1	Programming Techniques

And one unit from Schedule A

Spring session

300749.1	Medical Microbiology
300565.1	Computer Networking

And two units from Schedule A

Year 4

Autumn session

300570.2	Human-Computer Interaction
300095.2	Computer Networks and Internets
300698.1	Operating Systems Programming
300578.2	Professional Development

Spring session

300104.2	Database Design and Development
300583.1	Web Systems Development
300699.1	Discrete Structures and Complexity
300579.2	Professional Experience

Schedule A Units

300307.1	Analytical Microbiology
300407.1	Mammalian Molecular Medicine
300408.1	Mammalian Cell Biology and Biotechnology
300505.1	Pharmacology
300757.1	Molecular Biology of the Immune System
300556.1	Analytical Protein Science
300656.1	Laboratory Quality Management
300544.1	Cell Signalling

Choose one of

300756.1	Topics in Physiology
300622.1	Human Physiology 2

Choose one of

300547.1	Human Genetics
300623.2	Genetics

Bachelor of Medical Science / Bachelor of Information and Communications Technology - Medicinal Chemistry Major

Year 1

Autumn session

300539.1	Biodiversity
300554.1	Principles of Chemistry
300580.1	Programming Fundamentals
300778.1	Introduction to Anatomy

Spring session

300543.1	Cell Biology
300550.1	Medicinal Chemistry
300700.3	Statistical Decision Making
300753.1	Introduction to Human Physiology

Year 2**Autumn session**

300555.1	Proteins and Genes
300582.1	Technologies for Web Applications
300585.1	Systems Analysis and Design

Choose one of

300545.1	Coordination Chemistry
300540.1	Biomolecular Dynamics

Spring session

300548.1	Human Metabolism and Disease
300297.1	Analytical Chemistry 2
300553.1	Molecules of Life: Synthesis and Reactivity
300144.2	Object Oriented Analysis

Year 3**Autumn session**

300546.1	Drug Design and Synthesis
300537.1	Advanced Chemical Analysis
100483.1	Principles of Professional Communication 1
300581.1	Programming Techniques

Spring session

300324.1	Pharmacological Chemistry
300323.2	Pathological Basis of Disease
300565.1	Computer Networking

Choose one of

300538.1	Advanced Inorganic Chemistry
300475.1	Molecular Pharmacokinetics

Year 4**Autumn session**

300570.2	Human-Computer Interaction
300095.2	Computer Networks and Internets
300698.1	Operating Systems Programming
300578.2	Professional Development

Spring session

300104.2	Database Design and Development
300583.1	Web Systems Development
300699.1	Discrete Structures and Complexity
300579.2	Professional Experience

Bachelor of Medical Science / Bachelor of Information and Communications Technology - Human Bioscience Major**Year 1****Autumn session**

300539.1	Biodiversity
300554.1	Principles of Chemistry
300580.1	Programming Fundamentals
300778.1	Introduction to Anatomy

Spring session

300543.1	Cell Biology
300550.1	Medicinal Chemistry
300700.3	Statistical Decision Making
300753.1	Introduction to Human Physiology

Year 2**Autumn session**

300555.1	Proteins and Genes
300751.1	Anatomy of the Thorax and Abdomen
300582.1	Technologies for Web Applications
300585.1	Systems Analysis and Design

Spring session

300548.1	Human Metabolism and Disease
300755.1	The Appendicular Skeleton
300323.2	Pathological Basis of Disease
300144.2	Object Oriented Analysis

Year 3**Autumn session**

300754.1	Neuroanatomy
100483.1	Principles of Professional Communication 1
300581.1	Programming Techniques

And one unit from Schedule B

Spring session

300505.1	Pharmacology
300565.1	Computer Networking

And two units from Schedule B

Year 4**Autumn session**

300570.2	Human-Computer Interaction
300095.2	Computer Networks and Internets
300698.1	Operating Systems Programming
300578.2	Professional Development

Spring session

300104.2	Database Design and Development
300583.1	Web Systems Development
300699.1	Discrete Structures and Complexity
300579.2	Professional Experience

Schedule B Units

300307.1	Analytical Microbiology
300749.1	Medical Microbiology
300750.1	Anatomy of the Head and Neck
300321.1	Microbiology 2
300505.1	Pharmacology
300549.1	Human Molecular Biology
400267.2	Pathophysiology 2

Choose one of:

300756.1	Topics in Physiology
300622.1	Human Physiology 2

Bachelor of Medicine, Bachelor of Surgery

4641.4

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 2011 or later.

This course prepares graduates for eligibility for registration as a medical practitioner in Australia or New Zealand. It is an integrated program in which the basic sciences and areas of knowledge underpinning medical practice are learnt in a framework that emphasises active learning, based on clinical and other relevant scenarios. Teaching of clinical skills begins in the first year and continues throughout the program. In the last three years of the course, students undertake clinical placements in a wide range of settings across Greater Western Sydney and beyond. Students who undertake the embedded Honours program during the final two years of the course will also carry out a research project.

Study Mode

Five years full-time. In the first two years of the course, students will study at both the Campbelltown campus of the University and at the Liverpool TAFE precinct. In the later years, students may be required to spend a period of time in one or more clinical rotations outside the Sydney metropolitan area, and will also be rotated to a substantial number of different locations within Sydney.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Advanced Standing

The course is extensively integrated horizontally, and as a result it will not be possible to grant credit for units taken in other courses.

Accreditation

The MBBS program is fully accredited by the Australian Medical Council. Graduates will be eligible for registration as a medical practitioner by the Australian Health Practitioner Regulation Agency.

Admission

Potential students should apply through the Universities Admission Centre (UAC). Selection is on the basis of:

- Academic merit (UAI or its equivalent, for those without a completed degree; grade point average in their most recent degree, for graduate applicants)
- Results of the Undergraduate Medicine and Health Sciences Admission Test (UMAT); and
- Performance at an interview.

Evidence of connection to Greater Western Sydney may also be taken into account.

The requirements for International applicants to be considered for admission to the medical course are:

- Achieve a scholastic performance in the final year of secondary school equivalent to a New South Wales University Admission Index of 95 (International Baccalaureate 34) or higher
- for those who have completed a 3 year or longer Bachelors degree, the grade point average in the degree must be at least 5.5 on the 7 point for those who have completed a 3 year or longer Bachelors degree, the grade point average in the degree must be at least 5.5 on the 7 point scale
- Have completed IELTS or equivalent examination (Academic Module) and achieve a minimum score of 6.5 in each of the four components, and an overall score of at least 7.0

For more information on entry requirements and how to apply please see the School of Medicine web page.

For Honours Students:

Completion of Year 3 of UWS MBBS, with a grade-point average in the course to that time of 6.0 or better. Applications will be directly to the School, from currently enrolled students in Year 3 of MBBS.

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 the University of Western Sydney via UWS International.

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 UWS.

Special Requirements

To be enrolled in this course students must comply with the current occupational screening and vaccination policy of NSW Health at course commencement. Students must obtain Student Registration by the Medical Board of NSW, and must successfully complete a Work Cover Authority approved First Aid Certificate prior to the completion of the first semester of the course.

Course Structure

Qualification for the award requires the successful completion of 400 credit points including the units listed in the sequence below.

Please note that successfully passing the previous year's units is a prerequisite for attempting the units in the following year, therefore deviations from the sequence below will not be possible.

Full-time

Year 1

1H Session

400861.1 Foundations of Medicine 1

2H Session

400861.1 Foundations of Medicine 1

Year 2

1H Session

400862.1 Foundations of Medicine 2

2H Session

400862.1 Foundations of Medicine 2

Year 3

1H Session

400810.2 Integrated Clinical Rotations 1

2H Session

400810.2 Integrated Clinical Rotations 1

Year 4 (Non-Honours stream)

1H Session

400811.1 Integrated Clinical Rotations 2

2H Session

400811.1 Integrated Clinical Rotations 2

Year 4 (Honours stream)

Honours stream students will complete the following units:

400811.1 Integrated Clinical Rotations 2
400959.1 Honours Research Project 1

Year 5 (Non-Honours stream)

1H Session

400977.1 Integrated Clinical Rotations 3

2H session

400978.1 Integrated Clinical Rotations 4

Year 5 (Honours stream)

Honours stream students will complete the following units:

400977.1 Integrated Clinical Rotations 3
400978.1 Integrated Clinical Rotations 4
400960.1 Honours Research Project 2

Please Note: the curriculum for year 5 is subject to approval, and therefore may be altered.

Unsatisfactory Completion of Core Units

Students who are unable to satisfy the requirements of the core unit 400977 Integrated Clinical Rotations 3 will be expected to enrol and complete the unit 400979 - Integrated Clinical Rotations (General). Students should seek immediate academic advice regarding their planned progression and pattern of enrolment, which may have to be varied to meet unit and course requirements.

400979.1 Integrated Clinical Rotations (General)

Honours Stream

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

Bachelor of Medicine, Bachelor of Surgery/Bachelor of Arts

4671.1

Students should follow the course structure for the course version relevant to the year they commenced. This course version applies to students who commenced study in this course in 2010 or later.

This combined program is offered to a small number of students (quota of 3) who have demonstrated extremely high academic achievement during their Year 12 school studies, and who wish to broaden their medical studies by also completing the requirements for a Bachelor of Arts. In addition to completing all components of the medical course, they will also complete 160 credit points of studies for the BA, one year of which will be taken off from the MBBS program to study 80 cp of units for the BA full-time. Some students will choose to complete the program in 7 years rather than 6, in which case no overload would be needed. Students accepted into the combined program will need to consult with course advisors for both MBBS and BA to plan how to dovetail the commitments needed for each component course. Students should refer to the separate handbook entries for the component degrees.

Study Mode

Six years if 80 credit points of Bachelor of Arts units taken in overload. Seven years if no overload.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Accreditation

The Bachelor of Medicine, Bachelor of Surgery course is accredited by the Australian Medical Council until end 2013.

Admission

The admissions requirements and processes will be the same as for the MBBS (including the requirements to apply directly to the School of Medicine by the September closing date each year, to have a current UMAT score, and to have taken part in the School's Multi-mini Interview (MMI), but with the following differences:

- The UAI (or its equivalent) cutoff for consideration for entry to this combined degree is 99.90. (ATAR 99.85)
- There will be a quota of three places for the combined degree in the first instance (it is important to set a quota, since the NSW hospitals and IMET do their planning for Intern places based on a steady pipeline of graduates emerging from the NSW medical courses; the quota could be adjusted slowly in future years if the level of demand supports it).
- Up to ten places will be set aside for the MMI for applicants with the MBBS/BA UAC course code (i.e. the same ratio of interview places to actual course places as for the straight MBBS). If there are more than 10 eligible applicants, they will be ranked by their UMAT score.
- The final ranked selection list, for the UAC admissions process, will be based solely on the interview performance.

For more information on entry requirements and how to apply please see the School of Medicine web page.

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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Qualification for the award requires the successful completion of 400 credit points including the units listed in the sequence below.

Students will take a year off from the MBBS program (ideally between Years 2 and 3 or between Years 3 and 4) to study BA full-time. Some students will prefer to take a second full-time year off to complete the 160 credit points of Arts units required for the BA, while others will request and be approved to carry a small overload (average of 10 credit points per semester) in Years 1-4 of MBBS to complete 80 credit points of Arts units.

A typical structure is set out below, but the overload (or decision to NOT overload) and the particular year in which a student would intercalate from the MBBS program can be tailored to individual students' needs.

Recommended Sequence

Full-time

Year 1

1H session

400861.1 Foundations of Medicine 1

and one 10 credit point Bachelor of Arts unit

2H Session

400861.1 Foundations of Medicine 1

and one 10 credit point Bachelor of Arts unit

Year 2

1H Session

400862.1 Foundations of Medicine 2

and one 10 credit point Bachelor of Arts core unit

2H Session

400862.1 Foundations of Medicine 2

and one 10 credit point Bachelor of Arts core unit

Year 3

400810.2 Integrated Clinical Rotations 1

and 20 credit points of Bachelor of Arts core units - 10 credit points per semester

Year 4

80 credit points of full-time Bachelor of Arts units

Year 5

400811.1 Integrated Clinical Rotations 2

and 20 credit points of Bachelor of Arts units - 10 credit points per semester

Year 6

400812.1 Integrated Clinical Rotations 3

(Bachelor of Arts requirements complete)

Bachelor of Natural Science

3637.2

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 2011 or later.

The Bachelor of Natural Science is a broadly based, multi-disciplinary undergraduate degree offering flexibility and choice through a range of complementary key program areas related to human interaction with the environment, whether in terms of food production, harvest, sustainability of supply, safety and distribution; or societal and environmental effects on human health; or environmental

sustainability through landscape management and conservation; or adaptation to global and local climate change issues. The degree, based at the Hawkesbury campus, seeks to equip all students with a good understanding of fundamental academic and scientific skills complemented by a high level of discipline specific knowledge. Each specific discipline has a capstone unit in engaged learning, to ensure that graduates will be 'business ready' in terms of dealing with real world issues and problems. In addition to the key programs, students will be able, if they wish, to complete a sub-major related to another key program.

Study Mode

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

Location

Campus	Attendance	Mode
Hawkesbury Campus	Full Time	External
Hawkesbury Campus	Part Time	External
Hawkesbury Campus	Full Time	Internal
Hawkesbury Campus	Part Time	Internal

Accreditation

The Bachelor of Natural Science (Environment and Health) key program is accredited by Environmental Health Australia (EHA), formerly the Australian Institute of Environmental Health (AIEH).

Admission

Local students will normally be admitted through UAC. The following sets of Assumed Knowledge and Recommended Studies apply.

Agriculture: Recommended Studies: One or more of agriculture, business studies, geography, society and culture, and any two units of mathematics and any two units of science.

Animal Science: Assumed Knowledge: Any two units of English and any two units of Mathematics. Recommended Studies: One or more of Biology, Chemistry, Geography or Agriculture.

Environment and Health: NSW HSC Mathematics or equivalent and NSW HSC Science or equivalent.

Environmental Management and Climate Change: Any two units of Science (biology or chemistry recommended) and any two units of English.

Food Sustainability: Assumed Knowledge: Any two units of English and any two units of Mathematics. Recommended Studies: One or more of Biology, Chemistry, or Agriculture.

Food Systems: Assumed Knowledge: Any two units of English and any two units of Mathematics. Recommended Studies: One or more of Biology, Chemistry, or Agriculture.

Horticulture: Recommended Studies: Any two units of mathematics and any two units of science (biology or chemistry recommended).

Nature Conservation: Assumed Knowledge: Any two units of English and any two units of Mathematics.

Recommended Studies: One or more of Biology, Chemistry, Geography or Agriculture.

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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Qualifying for this award requires successful completion of 240 credit points within the following rules.

Completion of: (a) eight compulsory units (80 credit points) which are the common core.

Level 1

300497.1	Professional Skills for Science
300792.1	Biology A - The Diversity of Life
200263.2	Biometry
300663.1	Resource Sustainability

Level 2

300664.1	Science in Society
300662.1	Research Methods

Level 3

300659.1	Field Project 1
300660.1	Field Project 2

and; (b) between ten units (100 credit points) and 16 units (160 credit points) associated with a particular applied Science discipline together with the common core units making up the key program.

Depending upon their key program of study students will also need to complete between four (40 credit points) and six (60 credit points) electives. This structure allows students the opportunity to undertake their Key Program in addition to sub majors from across the university. In the case of the Key Program in Environment & Health where students wish to become accredited Environmental Health Officers, the Key Program consists of 240 credit points with no elective choices.

Students are required to complete

- No more than 120 credit points in total at Level 1
- at least 60 credit points in total at Level 3
- all specified units in their chosen key program discipline

Key Programs

All students must complete a Key Program.

KT3066.1	Agriculture
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Agriculture is an exciting, inter disciplinary area that is essential to feeding the growing world population.

KT3067.1 Animal Science

Interactions between people and animals are increasing as we become more dependent on animals for companionship and food production, and strive to understand the greater pressures being placed on our unique native wildlife.

KT3069.1 Environment and Health

The air we breathe, the water we drink, the food we eat, and the places we live, work and play all have major impacts on our health and well being.

KT3070.1 Environmental Management and Climate Change

Environmental managers are concerned with ensuring the ecological sustainability of human development. History has shown that if we don't effectively manage our environment, we will degrade it – possibly to the point where it can no longer sustain us.

KT3068.1 Food Sustainability

The new Food Sustainability key program will provide students with a deep understanding of current food systems, the challenges faced by society in achieving food security and food sustainability, and approaches for making the transition to a more secure and sustainable future for food.

KT3071.1 Food Systems

The Food Systems program covers the value chain management of the food industry, from farm to fork. The program fills a critical niche in our increasingly complex food provision systems, by addressing food supply chains and production processes.

KT3072.1 Horticulture

Horticulture is an exciting and diverse field encompassing science, technology, business, tourism and sociology. It impacts our lives through parks and gardens, organic farming, recreational landscape development, rural tourism and the use of plants in alternative therapies, and its practitioners play a key role in our country's economic future.

KT3073.1 Nature Conservation

Nature conservation is shaped by the interplay of diverse political, cultural, economic, scientific and technological forces across Australia and internationally. With the increasing exploitation of the world's non-renewable resources and the rapidly unfolding degradation of the planet's natural systems there is an urgent need to conserve those wild places we have left and begin to restore the damage man has done.

Landscape Design Major

M3034.1 Landscape Design

Sub-major elective spaces

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

majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form

Bachelor of Nursing

4642.2

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 was 2009 or later.

This course prepares graduates for eligibility to apply for registration throughout Australia as beginning professional generalist registered nurses. The focus of the course is on inquiry-based learning, critical thinking and reflective practice in relation to the theory and practice of nursing in health and health breakdown across the lifespan. Students study application of physical and behavioural sciences to nursing; inquiry and evidence-based practice principles and utilisation within nursing; nursing care of individuals, families and groups from diverse backgrounds across the lifespan. The acquisition of nursing knowledge and skills occurs initially in campus-based simulated clinical practice settings and consolidation occurs as students undertake clinical placements in a variety of health care settings. Prospective students should be aware that full disclosure of any issues of impairment or misconduct is a declaration requirement when applying for registration as a registered nurse.

Study Mode

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

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Hawkesbury Campus	Full Time	Internal
Parramatta Campus	Full Time	Internal

Advanced Standing

Prospective students holding the Enrolled Nurses Certificate Level IV or Advanced Certificate with Medication Administration Module will be granted automatic entry to the B Nursing. In recognition of their TAFE studies and professional experience, this group will be granted advanced standing in the following units:

- Elective (unspecified 10 credit points)
- Nursing for Health and Wellbeing
- Understanding Good Health
- Behavioural Foundations for Nursing Practice

Accreditation

The Bachelor of Nursing has accreditation and approval from the Nurses and Midwives Board NSW. From 1st July 2010 the approval, recognition and accreditation of courses has been transferred to the Australian Nursing and Midwifery Council. Course accreditation can be checked on

their website. <http://www.nursingmidwiferyboard.gov.au/Accreditation.aspx>

Admission

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 the University of Western Sydney via UWS International.

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 UWS.

Special Requirements

Students will need to have completed the NSW Health Special Requirements for clinical practicum attendance. At present these include: Prohibited Persons Employment Declaration (PPED) prior to 1 June 2010 OR a Working with Children Check Student Declaration after 1 June 2010; Criminal Record Check (CRC) prior to 1 June 2010 OR a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate; Adult Health Immunisation Schedule and Workcover accredited Senior First Aid Certificate.

Course Structure

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

Full-time

Year 1

Autumn session

400745.2	Nursing for Health and Wellbeing
400746.2	Understanding Good Health
400747.2	Behavioural Foundations of Nursing Practice
400748.2	Becoming a Nurse

Spring session

400749.2	Nursing and Health Breakdown
400750.2	Introduction to Health Breakdown
400751.2	Nursing and Healthy Communities
400752.2	Knowing Nursing

Year 2

Autumn session

400753.3	Medical-Surgical Nursing 1
400814.2	Alterations in Nutrition, Elimination and Sexuality
400755.2	Evidence-Based Nursing 1
400756.2	Family Health Care: Health Issues and Australian Indigenous People

Spring session

400757.3	Medical-Surgical Nursing 2
400815.2	Alterations in Breathing, Work/Leisure and Mobility
400759.3	Mental Health Nursing 1
400760.2	Family Health Care: Child and Adolescent Nursing

Year 3

Autumn session

400761.2	Family Health Care: High Acuity Nursing
400762.2	Mental Health Nursing 2
400763.2	Family Health Care: Chronicity and Palliative Care Nursing

And one elective

Spring session

400764.3	Transition to Graduate Practice
400765.2	Evidence-Based Nursing 2
400766.2	Leadership in Graduate Practice
400767.2	Family Health Care: Older Adult Nursing

Additional Core Unit for Students with an Exceptional Study Sequence

It is a professional accreditation requirements that students satisfactorily complete a minimum 4 week clinical practicum in the final session of any pre-registration Bachelor of Nursing program. Bachelor of Nursing students who vary their study sequence significantly from the normal progression may be required to study the additional unit listed below to ensure the currency of their clinical skills prior to graduate practice:

400768.2	Maintaining Clinical Currency
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Elective Units

Elective units in the Bachelor of Nursing may be chosen from across UWS, provided that unit pre-requisites are met and space is available.

The following are elective units in the Nursing discipline area which are not listed elsewhere in the Handbook. These electives are open to students from across UWS provided that pre-requisites are met and space is available:

400621.2	Bugs and Drugs
400961.1	Drugs on Line
400958.1	A Field Study: Comparative Studies of Health Care Delivery

Bachelor of Nursing - Graduate Entry

4643.3

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 was 2011 or later.

This course prepares graduates for eligibility to apply for registration throughout Australia as beginning professional

registered nurses. The focus of the course is on inquiry-based learning, critical thinking and reflective practice in relation to the theory and practice of nursing in health and health breakdown across the lifespan. Students study application of physical and behavioural sciences to nursing; inquiry and evidence-based practice principles; and utilisation within nursing; and the nursing care of individuals, families and groups from diverse backgrounds across the lifespan. The acquisition of nursing knowledge and skills will occur in campus-based simulated clinical practice settings and consolidation occurs as students undertake clinical placements in a variety of health care settings. Prospective students should be aware that full disclosure of any issues of impairment or misconduct is a requirement when applying for registration as a registered nurse.

Study Mode

Two years full-time.

Location

Campus	Attendance	Mode
Hawkesbury Campus	Full Time	Internal

Accreditation

The Bachelor of Nursing - Graduate Entry is accredited with the Nurses and Midwives Board of New South Wales. From 1st July 2010 the approval, recognition and accreditation of courses has been transferred to the Australian Nursing and Midwifery Council. Course accreditation can be checked on their website. <http://www.nursingmidwiferyboard.gov.au/Accreditation.aspx>

Admission

Applicants must have successfully completed an undergraduate degree in biological sciences: human biological sciences, anatomy and physiology, chemistry, physics, biology, natural science, microbiology, medicine, dentistry, pharmacy, human science, naturopathy, complementary medicine.

or

An undergraduate degree in arts/behavioural sciences: human behavioural and social sciences, psychology, sociology, human communications, human behaviour

or

An overseas 3 year post secondary qualification as a registered nurse

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 the University of Western Sydney via UWS International.

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 UWS.

Special Requirements

To be enrolled in this course students must comply with the current occupational screening and vaccination policy of NSW Health at course commencement. The Bachelor of Nursing (Graduate Entry) program incorporates the teaching of nursing practical techniques/ skills and clinical training through physical contact between supervising clinicians, lecturers, students and patients of both genders and all backgrounds. This contact is guided by protocols and codes of conduct and is a compulsory requirement of the course as currently accredited. Students entering the program must do so with an understanding that accommodations cannot be made in this area for any reason.

Course Structure

Qualification for this award requires the successful completion of 170 credit points including the units listed in the recommended sequence below.

Recommended Sequence

Full-time

Year 1

Quarter 1 session

400776.2 Introduction to Nursing Practice

Autumn session

400753.3 Medical-Surgical Nursing 1
400814.2 Alterations in Nutrition, Elimination and Sexuality
400755.2 Evidence-Based Nursing 1
400756.2 Family Health Care: Health Issues and Australian Indigenous People

Spring session

400757.3 Medical-Surgical Nursing 2
400815.2 Alterations in Breathing, Work/Leisure and Mobility
400759.3 Mental Health Nursing 1
400760.2 Family Health Care: Child and Adolescent Nursing

Year 2

Autumn session

400761.2 Family Health Care: High Acuity Nursing
400762.2 Mental Health Nursing 2
400763.2 Family Health Care: Chronicity and Palliative Care Nursing

Spring session

400764.3 Transition to Graduate Practice
400765.2 Evidence-Based Nursing 2
400766.2 Leadership in Graduate Practice
400767.2 Family Health Care: Older Adult Nursing

Bachelor of Nursing (Advanced)

4648.1

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 2009 or later.

This course prepares graduates for eligibility to apply for registration throughout Australia as beginning professional generalist registered nurses. The focus of the course is on inquiry-based learning, critical thinking and reflective practice in relation to the theory and practice of nursing in health and health breakdown across the lifespan. Students study application of physical and behavioural sciences to nursing; inquiry and evidence-based practice principles and utilisation within nursing; nursing care of individuals, families and groups from diverse backgrounds across the lifespan. The acquisition of nursing knowledge and skills occurs initially in campus-based simulated clinical practice settings and consolidation occurs as students undertake clinical placements in a variety of health care settings. Prospective students should be aware that full disclosure of any issues of impairment or misconduct is a declaration requirement when applying for registration as a registered nurse.

Students in the Bachelor of Nursing (Advanced) will follow the study program set out for the 4642 - Bachelor of Nursing. Each student will have an Academic Mentor and will participate in additional compulsory activities related to nursing research and professional practice. To maintain their enrolment in the Bachelor of Nursing (Advanced) students must maintain a Grade Point Average (GPA) of 5.5 or above, otherwise they will be transferred to the standard 4642 – Bachelor of Nursing course. At enrolment students will be required to sign a declaration acknowledging the requirement to maintain a GPA greater than or equal to 5.5.

Study Mode

Three years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Hawkesbury Campus	Full Time	Internal
Parramatta Campus	Full Time	Internal

Accreditation

The Bachelor of Nursing (4642) has accreditation and approval from the Nurses and Midwives Board NSW until 2013. From 1st July 2010 the approval, recognition and accreditation of courses has been transferred to the Australian Nursing and Midwifery Council. Course accreditation can be checked on their website. <http://www.nursingmidwiferyboard.gov.au/Accreditation.aspx> - The professional registration body will be notified of this proposal and accreditation for the Bachelor of Nursing (Advanced) course will be sought if required.

Admission

Students may apply for admission to the course through the Universities Admission Centre (UAC) or as a Year 1 Bachelor of Nursing student with GPA greater than 5.5.

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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

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

Recommended Sequence

Year 1

Autumn session

400745.2	Nursing for Health and Wellbeing
400746.2	Understanding Good Health
400747.2	Behavioural Foundations of Nursing Practice
400748.2	Becoming a Nurse

Spring session

400749.2	Nursing and Health Breakdown
400750.2	Introduction to Health Breakdown
400751.2	Nursing and Healthy Communities
400752.2	Knowing Nursing

Year 2

Autumn session

400753.3	Medical-Surgical Nursing 1
400814.2	Alterations in Nutrition, Elimination and Sexuality
400824.2	Evidence-Based Nursing 1 (Advanced)
400854.2	Family Health Care: Health Issues and Australian Indigenous People (Advanced)

Spring session

400825.2	Medical Surgical Nursing 2 (Advanced)
400815.2	Alterations in Breathing, Work/Leisure and Mobility
400759.3	Mental Health Nursing 1
400760.2	Family Health Care: Child and Adolescent Nursing

Year 3**Autumn session**

400761.2	Family Health Care: High Acuity Nursing
400762.2	Mental Health Nursing 2
400855.1	Family Health Care: Chronicity and Palliative Care Nursing (Advanced)

One elective

Spring session

400764.3	Transition to Graduate Practice
400827.2	Evidence-Based Nursing 2 (Advanced)
400767.2	Family Health Care: Older Adult Nursing
400849.1	Leadership in Graduate Practice (Advanced)

Bachelor of Nursing (Honours)**4529.2**

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 was 2008 or later.

This program is designed for graduates of the Bachelor of Nursing degree and other similar degrees. Successful completion of the program will provide students with a sound basis for subsequent research within their own work environments as well as enabling them to progress to higher researcher-related programs.

This program provides an opportunity for students, under guidance, to plan and implement a research project in the area of nursing practice. Knowledge and experience gained by students through completing this program will contribute to the knowledge base for nursing practice.

The program of study combines a research project with course work. The course work, undertaken during the first semester of enrolment, comprises two units of study. The remainder of the program is devoted to completion of a research project and the preparation of a thesis.

This program can be undertaken concurrently with any new graduate transitional program offered by various hospitals.

Study Mode

One year full-time or two years part-time.

Location

Campus	Attendance	Mode
Parramatta Campus	Full Time	External
Parramatta Campus	Full Time	Multi Modal
Parramatta Campus	Part Time	Multi Modal

Advanced Standing

Advanced Standing will be assessed in accordance with UWS policy.

Admission

The Bachelor of Nursing (Honours) degree is a second award as nursing students must satisfy the requirements for

State registration as a Registered Nurse with a Bachelor's pass before proceeding into an Honours program.

Applicants must have obtained a Grade Point Average (GPA) of 5 (Credit level) or better throughout their Bachelor of Nursing course or a GPA of 5.75 or better in the final year of their Bachelor of Nursing (pass) degree. This criterion ensures that candidates are capable of achieving the high standards required for Bachelor of Nursing (Honours) studies. In addition, applicants must have completed at least 20 credit points of research or equivalent at an undergraduate level.

International applicants should contact UWS International for details on admission. Contact information for the International Office is available via the UWS website.

Special Requirements

To be enrolled in this course you must comply with the Occupational Screening and Vaccination Policy of NSW Health at course commencement.

Course Structure

Qualification for this award requires the successful completion of 80 credit points including the units listed in the recommended sequence below.

Recommended Sequence**Full-time****Year 1****Autumn session**

400803.2	Research in Nursing Practice
400202.2	Nursing Honours Thesis A (Full-time)
400201.3	Readings and Methodology

Spring session

400203.2	Nursing Honours Thesis B (Full-time)
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Part-time**Year 1****Autumn session**

400803.2	Research in Nursing Practice
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Spring session

400201.3	Readings and Methodology
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2H session

400204.2	Nursing Honours Thesis (Part-time)
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Year 2**1H session**

400204.2	Nursing Honours Thesis (Part-time)
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2H session

400204.2	Nursing Honours Thesis (Part-time)
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Bachelor of Science

3640.3

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 2011 or later.

A Bachelor of Science prepares students for a professional career in science. Fundamental to this degree are the skills necessary for quantification and analysis, the capacity for critical analysis, problem solving, and independent thinking. Students must choose either a discipline-specific Key Program, or the No Key Program otherwise. Units from a range of scientific and other disciplines may be combined to suit a student's interests and educational aims. Students complete a core of basic science units, to which other science units and, if desired, non-science electives can be added.

Study Mode

Three years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Hawkesbury Campus	Full Time	Internal
Parramatta Campus	Full Time	Internal

Accreditation

The Bachelor of Science (Chemistry) is accredited by The Royal Australian Chemical Institute Incorporated.

Admission

Local students will normally be admitted through UAC. The following sets of Assumed Knowledge and Recommended Studies apply.

Agricultural Science - Assumed knowledge: Any two units of English and any two units of science. Recommended studies: One or more of Biology, Chemistry or Agriculture.

Animal Science - Assumed knowledge: Any two units of English and any two units of science. Recommended studies: One or more of Biology, Chemistry or Agriculture.

Biological Science - Recommended studies: Mathematics and Chemistry.

Chemistry - Recommended studies: Chemistry.

Climate Change - Recommended studies: Mathematics, any two units of science and any two units of English.

Environmental Science - Assumed knowledge: Any two units of English and any two units of science (Biology or Chemistry recommended). Recommended studies: Geography.

Food Science - Recommended studies: Biology, Chemistry and Mathematics.

Geochemistry - Recommended studies: Chemistry and Mathematics.

Mathematical Science - Recommended studies: Mathematics.

Medical Nanotechnology - Recommended studies: Mathematics and Chemistry.

Nutrition and Food - Assumed knowledge: Mathematics and Biology. Recommended studies: Chemistry and Food Technology.

Science (No Key Program) - Assumed knowledge: At least two of Biology, Chemistry, Mathematics, Physics.

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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Qualifying for this award requires successful completion of 240 credit points within the following rules:

Level 1

- a maximum of 100 credit points at Level 1 units (including electives)
- at least 60 credit points must be core units from your Key Program
- the core units must span three of the following discipline areas: Mathematics/Statistics, Biology, Chemistry, Computer Science, Geoscience, Physics or Integrated Science
- at least one must be in Mathematics or Statistics

Level 2

- completion of the core Units from your Key Program

Level 3

- at least 60 credit points must be at Level 3 or above
- 40 credit points must be from core units in your Key Program
- one must be a capstone unit which draws the program together.

Students who do not select a discipline-specific Key Program must choose the No Key Program and must select Units within the No Key Program to complete one of the Majors listed in the Handbook entry for the Bachelor of Science.

Key Program in Agricultural Science

KT3054.1 Agricultural Science

This key program equips graduates with specialised knowledge and understanding of agronomy, animal science and soil science underpinned by a sound background in biology, chemistry and biometry. Graduates will understand how agriculture impacts on the structure and function of production ecosystems in the context of nutrient, water and energy flows, carbon sequestration and use of introduced and genetically modified organisms.

Key Program in Animal Science**KT3055.1** Animal Science

This key program recognises the increased demand for knowledge of how to best care for and protect our animals, including scientific knowledge of companion animals, production animals and their products, as well as knowledge related to our native animals.

Key Program in Biological Science**KT3056.1** Biological Science

This key program focuses on the areas of biology that are most relevant to industry and research: biochemistry, microbiology and molecular biology. Other areas of study include anatomy and physiology, environmental science, biotechnology, human biology and plant biology.

Key Program in Chemistry**KT3057.1** Chemistry

This key program consists of core studies in analytical, inorganic, organic and physical chemistry. A major in geochemistry will prepare you for a career in the minerals and mining industries. A sub-major in biochemistry or microbiology will prepare you for a career in the pharmaceutical, health or food industries.

Key Program in Climate Change**KT3058.1** Climate Change

This program equips people to work in the emerging and challenging area of climate change. A solid grounding in the underlying science is essential for people intending to work in this field, who will need to integrate across a range of disciplines, to devise solutions spanning the scientific and social issues involved.

Key Program in Environmental Science**KT3060.1** Environmental Science

This key program provides a strong background in key analytical techniques that have contemporary applications such as the handling and interpretation of data and the modelling of real world problems such as global warming.

Key Program in Food Science**KT3061.1** Food Science

This key program recognises that the manufacture of food is vital to Australia in terms of investment, export income and jobs growth. Within this framework there is a strong demand for practical food scientists who have skills in chemistry and microbiology and who can apply this

knowledge to food processing, ensuring a safe, nutritious and appetising food supply.

Key Program in Geochemistry**KT3059.1** Geochemistry

This program recognises the relevance of geochemistry in our rapidly expanding mining and minerals industries, and its importance in the understanding of related environmental issues.

Key Program in Mathematical Science**KT3062.1** Mathematical Science

The key program in Mathematical Sciences will prepare you to meet the growing demands from industry and business for highly-skilled problem-solvers. This program offers you a thorough grounding in the main areas of Mathematics and its applications, where you can specialise in mathematics, statistics or a combination of both.

Key Program in Medical Nanotechnology**KT3031.1** Medical Nanotechnology

This Key Program prepares students for professional careers in the multidisciplinary field of nanotechnology, covering biological, chemical and physical processes at the nanoscale. Students will develop fundamental skills in the technology of advanced imaging and characterisation techniques for seeing and manipulating of atoms/ molecules, creating chemical and biological nanomachines, smart materials, biomaterials and biodevices, molecular mimics and fabrication of nanostructured devices through the specialised units in this program.

Key Program in Nutrition and Food**KT3064.1** Nutrition and Food

Healthy eating is a vital part of good health. Nutrition and Food covers a range of subjects from the nutritional benefits of particular foods to food safety and medical conditions affected by diet, such as diabetes and heart disease.

Science (no Key Program)**KP3005.1** Science (No Key Program)

Intended for students who do not wish to specialise in a single key area of study, but who want a versatile and flexible course of study in science, this program includes a core of basic science units including biology, chemistry, mathematics and physics. You can then add units from a range of scientific and other disciplines to suit your interests and career aspirations.

Majors

M3016.1	Animal Science
M3038.1	Biochemistry and Molecular Biology
M3019.1	Chemistry
M3023.1	Computational Decision Making
M3035.1	Conservation Biology
M3033.1	Forensic Science Major
M3036.1	General Biology
M3020.1	Geochemistry

M3024.1	Knowledge Discovery and Data Mining
M3021.1	Mathematics
M3037.1	Microbiology
M3042.1	Nutrition and Physiology
M3022.1	Statistics

Sub-majors

SM3020.1	Animal Science
SM3016.1	Biochemistry and Molecular Biology
SM3027.1	Computational Decision Making
SM3030.1	Conservation Biology
SM3011.1	Entertainment Computing
SM3024.1	Forensic Chemistry
SM3022.1	Geochemistry
SM3010.1	Health Information Applications
SM3009.1	Health Information Management
SM3028.1	Knowledge Discovery and Data Mining
SM3025.1	Mathematics
SM3037.1	Microbiology
SM3008.1	Networking
SM3026.1	Statistics
SM3007.1	Web Application Development (for Non-Computing Students)

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form

Bachelor of Science - Pathway to Teaching (Secondary)

3638.3

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 2011 or later.

The Bachelor of Science - Pathway to Teaching (Secondary) will allow you to focus on a general science program of your choice and to structure your units of study to gain the necessary learning areas to satisfy the NSW Institute of Teachers discipline knowledge requirements for entry into teaching. It also gives the advantage of early access to Education Studies units through mandatory completion of an Education Studies sub major.

Graduates of this degree who complete the requisite units to meet the requirements of the Institute will receive guaranteed entry to Master of Teaching.

Study Mode

Three years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Hawkesbury Campus	Full Time	Internal
Parramatta Campus	Full Time	Internal

Accreditation

The Bachelor of Science (Chemistry) is accredited by The Royal Australian Chemical Institute Incorporated. Bachelor of Science (Mathematical Science) - Membership of the Australian Mathematical Society and the Statistical Society of Australia depending on the units studied. Bachelor of Science (Food Technology) - Graduates would be qualified to become professional members of the Australian Institute of Food Science. Bachelor of Science (Biological Science) - Depending on the units chosen within the course, graduates can satisfy the requirements for membership of professional bodies such as the Australian Society for Microbiology and the Australian Institute of Biology.

Admission

At least two of Biology, Chemistry, Mathematics (excluding General Mathematics) and Physics at HSc level.

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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Qualifying for this award requires successful completion of 240 credit points within the following rules:

Level 1

- a maximum of 100 credit points at Level 1 units (including electives)
 - at least 60 credit points must be core units from your Key Program
 - the core units must span three of the following discipline areas: Mathematics/Statistics, Biology, Chemistry, Computer Science, Geoscience, Physics or Integrated Science
 - at least one must be in Mathematics or Statistics.
 - complete 300497 Professional Skills for Science or equivalent academic skilling unit if deemed necessary by Head of Program

Level 2

- completion of the core Units from your Key Program

Level 3

- at least 60 credit points must be at Level 3 or above
- 40 credit points must be from core units in your Key Program
- one must be a capstone unit which draws the program together.

Students who do not select a discipline-specific Key Program must choose the No Key Program and must select Units within the No Key Program to complete one of the Majors listed in the Handbook entry for the Bachelor of Science.

Students must complete a mandatory Education Studies sub-major within their electives comprising any 40 credit points from the units within the Education studies sub-major.

SM1031.1 Education Studies

Key Program in Biological Science

KT3056.1 Biological Science

Key Program in Chemistry

KT3057.1 Chemistry

Key Program in Food Technology

KT3074.1 Food Technology

Key Program in Mathematical Science

KT3062.1 Mathematical Science

No Key Program

KP3005.1 Science (No Key Program)

Majors

Additional majors are also available from course 3640 Bachelor of Science.

M3019.1 Chemistry
M3036.1 General Biology
M3021.1 Mathematics

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form

Bachelor of Science (Advanced Science)**3562.5**

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 2011 or later.

This degree equips students with both specialised knowledge and understanding in any one of agricultural science, animal science, biomedical science, chemistry, environmental science, food science, forensic science, general biology, human bioscience, human molecular biology, mathematics, medicinal chemistry, microbiology, nutrition and food, pharmaceutical chemistry, biochemistry and molecular biology, medical nanotechnology, climate change, geochemistry and statistics AND the skills to apply this in the research context.

Students in the Bachelor of Science (Advanced Science) may follow any of the study programs - including key programs and majors - set out for the following four courses: 3640 Bachelor of Science, 3589 Bachelor of Science (Forensic Science), 3577 Bachelor of Medical Science, and 3632 Bachelor of Biomolecular Science. For details, please refer to:

The degree is specially designed to provide the initial training for a range of scientific careers involving research and to facilitate the transition to an Honours year, on top of the employment areas available to graduates from the standard science programs in these areas.

Study Mode

Three years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Hawkesbury Campus	Full Time	Internal
Parramatta Campus	Full Time	Internal

Admission

Assumed knowledge required: Minimum ATAR of 90.80 with assumed knowledge of HSC mathematics and at least two of biology, chemistry and/or physics. Students must maintain a Grade Point Average (GPA) of 5.0 or above to continue their enrolment in the course. As part of the admission/enrolment process students will be required to sign a statement acknowledging that they understand that a minimum 5.0 GPA is required to remain in the program and that if this GPA is not maintained that they will be automatically transferred into the standard program. Students in other UWS science courses who achieve a GPA of 5.0 or greater at the end of their first year of study may be admitted into the Advanced Science program if sufficient places are available.

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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Students enrolled in the Bachelor of Science (Advanced Science) must complete the units appropriate for their Key program and the three project units listed below. These replace three elective units in Semesters 3, 4 and 5.

300591.1	Advanced Science Research Project A
300592.1	Advanced Science Research Project B
300593.1	Advanced Science Research Project C

In addition, students complete the appropriate timetabled project in their discipline in their final semester.

Bachelor of Science (Forensic Science)

3589.3

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 was 2011 or later.

This is a three year program that produces scientists who have a good background in the biological and chemical sciences, coupled with specialised expertise in forensic science, including methods of forensic analysis, crime scene investigation, forensic photography, finger printing, forensic materials/drug investigations, crime and criminal justice and complex case studies on terrorism, corporate crime, computer crime, money laundering and people smuggling. Students may specialise in forensic biology, chemistry or microbiology or combine the core units with additional forensic electives or studies in a related or unrelated discipline. Career opportunities include forensic scientists, crime scene investigators, private investigators and consultants, quality controllers, drug analysts, researchers and academics, document and fingerprint investigators. The main employers of forensic scientists are State and Federal police services, State and Commonwealth Government Health Departments and analytical chemical laboratories. Graduates will be versatile with a wide skills base with (depending on their choice of electives) potential for employment in analytical chemistry and microbiology, quality control and assurance, biochemistry and molecular biology, scientific research, education and the chemical industry.

Study Mode

Three years full-time.

Location

Campus	Attendance	Mode
Hawkesbury Campus	Full Time	Internal

Admission

There is no specific prerequisite for entry into the course. Preferably, students should have successfully completed the HSC at the 2U level or better in at least two of the following units: Biology, Chemistry or Mathematics.

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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

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

Students need to obtain an aggregate of at least 240 credit points, with no more than 100 credit points at Level 1. In addition, 60 credit points must be at Level 3 or above.

Recommended Sequence

Full-time

Year 1

Autumn session

300792.1	Biology A - The Diversity of Life
300224.2	Chemistry 1
300375.1	Digital Forensic Photography 1

And one elective

Spring session

300793.1	Biology B - Cellular Processes
300225.2	Chemistry 2
300654.1	Forensic Science
200263.2	Biometry

Year 2

Autumn session

300219.3	Biochemistry 1
300493.1	Forensic and Environmental Analysis

Choose one of

101559.2	Introduction to Criminology
101560.2	Introduction to Crime and Criminal Justice

And one elective

Spring session

300374.2	Crime Scene Investigation
300377.1	Forensic Analysis of Physical Evidence

Choose one of

- 300376.2** Digital Forensic Photography 2
300535.1 Soils

And one elective

Year 3

Autumn session

- 300234.2** Molecular Biology
300494.1 Forensic Chemistry

Choose one of

- 300378.1** Forensic Archaeology
300334.1 Invertebrate Biology

And one elective

Spring session

- 300373.1** Complex Forensic Case Studies
300627.1 Toxicology

And two electives

Note: Where an alternate unit option is available in the recommended course sequence, but a unit is not on offer in the same session, please contact the Course Advisor or Head of Program for advice.

Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form

Bachelor of Science (Honours)

3611.2

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 was 2011 or later.

The Honours program encourages independent learning and research, further develops academic ability, provides the opportunity to pursue undergraduate studies to a more advanced level, deepens intellectual understanding in the major field of study and develops research skills. An Honours degree is a recognised point of entry for postgraduate research studies at PhD level and enhances a graduate's ability to perform at a high level in a commercial or public organisation. The Honours program consists of a rigorous program of supervised research on a scientific topic, culminating in the production of a thesis and presentation of a final seminar. Students enrol in a 60 credit point honours project and either a 20 credit point research methodology and experimental design unit, or a 20 credit point advanced topics and research skills unit, allowing them to explore more advanced topics, including wider areas of research and their applications in science, technology, medicine and the environment. Although the

Honours course is available on several different campuses, some or all of the lectures, workshops and seminars may be held centrally at a single campus to ensure that students are exposed to as wide a range of research topics as possible. The course can provide opportunities for direct commercial and industrial involvement with a diverse range of organisations through the provision of, and joint supervision of, research projects.

Study Mode

One year full-time or two years part-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal
Hawkesbury Campus	Full Time	Internal
Hawkesbury Campus	Part Time	Internal
Parramatta Campus	Full Time	Internal
Parramatta Campus	Part Time	Internal
Penrith Campus	Full Time	Internal
Penrith Campus	Part Time	Internal

Course Structure

Qualification for this award requires the successful completion of 80 credit points as per the recommended sequence below.

Please note: Students must enrol in 300747 Advanced Topics and Research Skills and 300412 Science, Technology and Environment Honours Projects in both 1H and 2H sessions.

Recommended Sequence

Full-time

Year 1

1H

- 300412.2** Science, Technology and Environment Honours Project
300747.1 Advanced Topics and Research Skills

2H

- 300412.2** Science, Technology and Environment Honours Project
300747.1 Advanced Topics and Research Skills

Part-time

Year 1

1H

- 300747.1** Advanced Topics and Research Skills

2H

- 300747.1** Advanced Topics and Research Skills

Year 2**1H**

300412.2 Science, Technology and Environment Honours Project

2H

300412.2 Science, Technology and Environment Honours Project

Bachelor of Science (Honours) Mathematics

2711.1

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 2004 or later.

The honours program encourages independence in learning and research, further develops academic ability, provides the opportunity to pursue undergraduate studies to a more advanced level, deepen intellectual understanding in the major field of study and develop research skills. An Honours degree is a recognised point of entry into postgraduate research studies at PhD level. If a career in industry is sought, Honours enables study to a more advanced level with a higher qualification. The course has the opportunity for direct commercial and industrial involvement with a diverse range of organisations through the provision of and joint supervision of research projects.

Study Mode

One year full-time or two years part-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal
Parramatta Campus	Full Time	Internal
Parramatta Campus	Part Time	Internal

Admission

Admission requirements follow the recommendations and guidelines in the UWS Honours Policy. The basic requirement is completion of a bachelors pass degree in which the advanced level units in a relevant field of study were completed at a grade point average of 5.0 or better.

Course Structure

Qualification for this award requires the successful completion of 80 credit points which includes three core units made up of an advanced topic unit in mathematics, a research proposal and seminar plus a thesis in mathematics.

Core Units

200411.1 Advanced Topics in Mathematics

200412.4 Research Proposal and Seminar
200413.2 Mathematics Honours Thesis

Bachelor of Science/Bachelor of Arts

3658.2

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 2011 or later.

This double degree program is designed for students whose interests span the Arts and Sciences. It will produce versatile graduates who can work across a range of academic and professional disciplines, including the opportunity to develop global perspectives and communication skills in an Asian language. Graduates will have a solid grounding in a core science discipline such as Biological Science, Chemistry or Mathematics; alternatively, students can design their own academic program within the Bachelor of Science course structure, including a science Major. This qualification in science can be combined with a Global Studies key program from the Bachelor of Arts, or a Humanities key program. The Humanities Key Program may have one of the following majors: Asian Studies and International Relations; Religion, Anthropology and Philosophy. Sub-majors are also available in Asian Studies and International Relations; Religion, Anthropology and Philosophy; Japanese; Chinese.

Study Mode

Four years full-time.

Location

Campus	Attendance	Mode
Parramatta Campus	Full Time	Internal

Admission

Local students will normally be admitted through UAC. The following sets of Assumed Knowledge and Recommended Studies apply.

Bachelor of Science (Biological Science) - Recommended studies: Mathematics (excluding General Mathematics) and Chemistry at HSC level.

Bachelor of Science (Chemistry) - Recommended studies: Chemistry at HSC level.

Bachelor of Science (Mathematical Science) - Recommended studies: Mathematics at HSC level (excluding General Mathematics).

Bachelor of Science (with no Key Program) - Assumed knowledge: At least two of Biology, Chemistry, Mathematics (excluding General Mathematics), Physics at HSC level.

Bachelor of Arts - Assumed knowledge: Two units of HSC English at Band 4. Recommended studies: HSC English Standard, or equivalent

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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Qualification for this award requires the successful completion of 320 credit points as prescribed in the structure below. Students who complete this award will graduate with a Bachelor of Science and a Bachelor of Arts, with the key programs from both degree courses noted on their testamur.

Students who wish to exit this double degree after their third year and graduate with a Bachelor of Science must have completed 240 credit points and completed the units as listed below in Years 1, 2 and 3 for the key program chosen or the no key program option.

Students within this course will only be permitted to undertake the following key programs within 3640 Bachelor of Science.

- Biological Science
- Chemistry
- Mathematical Science
- Bachelor of Science (no Key Program)

The conceptual design of this Bachelor of Science/Bachelor of Arts double degree is as follows.

Years 1 to 3

Students will complete 160 credit points of Bachelor of Science units as listed in the course structure below.

In Years 1 to 4 they will complete the four Bachelor of Arts core units and 12 Bachelor of Arts key program units from the following key programs in the Bachelor of Arts as offered on Parramatta campus only.

- Global Studies key program
- Humanities key program with the following majors only:
 - Asian Studies and International Relations major or
 - Religion, Anthropology and Philosophy major

Sub-majors are available in these Bachelor of Arts key programs as follows:

- Asian Studies and International Relations
- Religion, Anthropology and Philosophy
- Global Studies
- Japanese
- Chinese

Arts Units

For details of the relevant Arts units, refer to the current listing of Bachelor of Arts, course code 1604. Continuing students should refer to the earlier versions of 1604.

Bachelor of Science - Biological Science/ Bachelor of Arts

Recommended Sequence

Full-Time

Year 1

Autumn session

Core Arts unit

Core Arts unit

- 300224.2** Chemistry 1
- 300792.1** Biology A - The Diversity of Life

Spring session

Core Arts unit

Core Arts unit

- 300225.2** Chemistry 2
- 300793.1** Biology B - Cellular Processes

Year 2

Autumn session

One Bachelor of Arts unit

- 300300.1** Microbiology 1
- 300219.3** Biochemistry 1
- 300609.1** Plant Physiology

Spring session

One Bachelor of Arts unit

- 300321.1** Microbiology 2
- 300220.1** Biochemistry 2
- 200263.1** Biometry

Year 3

Autumn session

One Bachelor of Arts unit

Choose two of

- 300234.2** Molecular Biology
- 300229.2** Immunology
- 300617.2** Conservation Biology

One Level 3 elective

Spring session

One Bachelor of Arts unit

Choose two of

- 300645.1** Science Research Project 2
- 300233.1** Medical Microbiology
- 300647.1** Environmental Biotechnology

Choose one of

- 300608.1** Animal Physiology
- 300301.1** Organic Chemistry 2

Year 4**Autumn session**

Four Bachelor of Arts units

Spring session

Four Bachelor of Arts units

Bachelor of Science - Chemistry/Bachelor of Arts**Recommended Sequence****Full-Time****Year 1****Autumn session**

Core Arts unit

Core Arts unit

300224.2 Chemistry 1

Choose one of

200191.3 Fundamentals of Mathematics**300672.1** Mathematics 1A**Spring session**

Core Arts unit

Core Arts unit

300225.2 Chemistry 2

Choose one of

300661.1 Integrated Science 1**300134.1** Introduction to Information Technology**300580.1** Programming Fundamentals**300613.1** Introductory Geochemistry: Earth, Resources and Environments**300559.1** Physics 2**300793.1** Biology B - Cellular Processes**200263.2** Biometry**300672.1** Mathematics 1A**300673.1** Mathematics 1B**Year 2****Autumn session**

One Bachelor of Arts unit

300297.1 Analytical Chemistry 2**300301.1** Organic Chemistry 2

Choose one of

300219.3 Biochemistry 1**300611.2** Chemical Mineralogy**300300.1** Microbiology 1**300609.1** Plant Physiology**200033.3** Applied Statistics**200042.2** Introduction to Operations Research**Spring session**

One Bachelor of Arts unit

300230.1 Inorganic Chemistry 2**300236.1** Physical Chemistry 2

Choose one of

300220.1 Biochemistry 2**300612.1** Geochemical Systems**300321.1** Microbiology 2**300608.1** Animal Physiology**200028.2** Advanced Calculus**200030.1** Differential Equations**200027.1** Linear Algebra**Year 3****Autumn session**

One Bachelor of Arts unit

300298.1 Analytical Chemistry 3**300235.1** Organic Chemistry 3**300558.1** Physics 1**Spring session**

One Bachelor of Arts unit

300231.1 Inorganic Chemistry 3**300303.1** Physical Chemistry 3**300645.1** Science Research Project 2**Year 4****Autumn session**

Four Bachelor of Arts units

Spring session

Four Bachelor of Arts units

**Bachelor of Science - Mathematical Science/
Bachelor of Arts****Recommended Sequence****Full-Time****Year 1****Autumn session**

Core Arts unit

Core Arts unit

Bachelor of Science Maths Science unit (see below for options)

Bachelor of Science Maths Science unit (see below for options)

Spring session

Core Arts unit

Core Arts unit

Bachelor of Science Maths Science unit (see below for options)

Bachelor of Science Maths Science unit (see below for options)

**Year 1 Bachelor of Science Mathematical Science units
(Note: check session of offer)**

Students must complete the following

300672.1	Mathematics 1A
300673.1	Mathematics 1B
200025.1	Discrete Mathematics

And choose one of

300700.3	Statistical Decision Making
200263.2	Biometry

Year 2**Autumn session**

Bachelor of Arts unit

Bachelor of Science Maths Science unit (see below for options)

Bachelor of Science Maths Science unit (see below for options)

Bachelor of Science Maths Science unit (see below for options)

Spring session

Bachelor of Arts unit

Bachelor of Science Maths Science unit (see below for options)

Bachelor of Science Maths Science unit (see below for options)

Bachelor of Science Maths Science unit (see below for options)

**Year 2 Bachelor of Science Mathematical Science units
(Note: check session of offer)**

Students must complete the following

300580.1	Programming Fundamentals
200028.2	Advanced Calculus
200027.1	Linear Algebra

Choose one of

300224.2	Chemistry 1
300558.1	Physics 1
300232.1	Introduction to Earth Sciences
300792.1	Biology A - The Diversity of Life
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300559.1	Physics 2
300793.1	Biology B - Cellular Processes

Choose one of

200042.2	Introduction to Operations Research
300606.1	Foundations of Statistical Modelling and Decision Making

Choose one of

200033.3	Applied Statistics
200030.1	Differential Equations
300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200029.1	Numerical Analysis

Year 3**Autumn session**

Bachelor of Arts unit

Bachelor of Science Maths Science unit (see below for options)

Bachelor of Science Maths Science unit (see below for options)

Bachelor of Science Maths Science unit (see below for options)

Spring session

Bachelor of Arts unit

Bachelor of Science Maths Science unit (see below for options)

Bachelor of Science Maths Science unit (see below for options)

Bachelor of Science Maths Science unit (see below for options)

**Year 3 Bachelor of Science Mathematical Science units
(Note: check session of offer)**

Students must complete

200045.2	Quantitative Project
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Choose two of

200033.3	Applied Statistics
200030.1	Differential Equations
300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200029.1	Numerical Analysis

Choose three of

200193.1	Abstract Algebra
200023.2	Analysis
200036.2	Data Mining and Visualisation
200024.1	Mathematical Finance
200022.2	Mathematical Modelling
300670.1	Optimisation Techniques
300671.1	Principles and Practice of Decision Making
200040.1	Probability & Stochastic Processes
200037.2	Regression Analysis & Experimental Design
200044.1	Simulation Techniques
200039.1	Surveys and Multivariate Analysis
200038.2	Time Series and Forecasting

Year 4**Autumn session**

Four Bachelor of Arts units

Spring session

Four Bachelor of Arts units

**Bachelor of Science - No Key Program/
Bachelor of Arts**

Students who do not select a discipline-specific Key Program must choose the No Key Program and must select Units within the No Key Program to complete one of the Majors listed. The majors available on the Parramatta

campus are: General Biology, Biochemistry and Molecular Biology, Chemistry, Geochemistry and Mathematics.

The degree must include

- core units that span three of the following discipline areas: Mathematics/Statistics, Biology, Chemistry, Computer Science, Geoscience, Physics or Integrated Science
- at least unit one must be in Mathematics or Statistics

Year 1

Autumn session

Two Core Arts units

Choose at least one of

200192.1	Statistics for Science
300672.1	Mathematics 1A
200263.2	Biometry
300672.1	Mathematics 1A
200025.1	Discrete Mathematics

Choose one of

300792.1	Biology A - The Diversity of Life
300224.2	Chemistry 1
300232.1	Introduction to Earth Sciences
300580.1	Programming Fundamentals
300558.1	Physics 1
300661.1	Integrated Science 1

Spring session

Two Core Arts units

Choose two of

300793.1	Biology B - Cellular Processes
300225.2	Chemistry 2
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300580.1	Programming Fundamentals
300672.1	Mathematics 1A
300673.1	Mathematics 1B
300559.1	Physics 2

Year 2

Autumn session

One Bachelor of Arts unit

Choose three units from

300219.3	Biochemistry 1
300300.1	Microbiology 1
300297.1	Analytical Chemistry 2
300611.2	Chemical Mineralogy
300609.1	Plant Physiology
200033.3	Applied Statistics
200042.2	Introduction to Operations Research

Spring session

One Bachelor of Arts unit

Choose three units from

300220.1	Biochemistry 2
300321.1	Microbiology 2
300230.1	Inorganic Chemistry 2
300236.1	Physical Chemistry 2
300612.1	Geochemical Systems
300608.1	Animal Physiology
200028.2	Advanced Calculus
200030.1	Differential Equations
200027.1	Linear Algebra

Year 3

Autumn session

One Bachelor of Arts unit

Choose three units from

300298.1	Analytical Chemistry 3
300235.1	Organic Chemistry 3
300218.1	Applied Aspects of Inorganic Chemistry
300614.1	Environmental Geochemistry
300234.2	Molecular Biology
300229.2	Immunology
300617.2	Conservation Biology
200193.1	Abstract Algebra
200023.2	Analysis

Spring session

One Bachelor of Arts unit

Choose three units from

300231.1	Inorganic Chemistry 3
300303.1	Physical Chemistry 3
300645.1	Science Research Project 2
300749.1	Medical Microbiology
200024.1	Mathematical Finance
200022.2	Mathematical Modelling
200045.2	Quantitative Project
200038.2	Time Series and Forecasting
200036.2	Data Mining and Visualisation
300647.1	Environmental Biotechnology

Year 4

Autumn session

Four Bachelor of Arts units

Spring session

Four Bachelor of Arts units

The majors available on the Parramatta campus are

M3036.1	General Biology
M3038.1	Biochemistry and Molecular Biology
M3019.1	Chemistry
M3020.1	Geochemistry
M3021.1	Mathematics

Bachelor of Science/Bachelor of Business and Commerce

3659.2

Students should follow the course structure for the course version relevant to the year they commenced. This course version applies to students who commenced study in this course in 2011 or later.

The Bachelor of Science/Bachelor of Business and Commerce double degree program allows graduates to span both the commercial and scientific worlds in a way that single degree graduates cannot. It provides students with the capacity for critical analysis and independent thinking. The double degrees permit students to undertake multi-skilling, and offer diverse career paths providing high marketability in multiple areas of expertise. This double degree program equips its graduates with a qualification in science, combined with a good understanding of basic business issues, complemented by a high level of knowledge relevant to a specific business discipline as applied in a global environment. Graduates will have a solid grounding in a core science discipline such as Biological Science, Chemistry or Mathematics; alternatively, students can design their own academic program within the Bachelor of Science course structure, including a science Major. This qualification in science is combined with one of the following key programs from the Bachelor of Business and Commerce: Applied Finance; Global Operations and Supply Chain Management; Hospitality Management; Human Resource Development and Organisational Development; Human Resource Management and Industrial Relations; International Business; Management; Marketing; Sport Management. Graduates will be equipped to work as scientists, with a good understanding of business principles and practices. Alternatively, as Business and Commerce graduates they will be well-prepared to work in science-based industries and institutions.

Study Mode

Four years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Parramatta Campus	Full Time	Internal

Admission

Eligibility for admission to the Bachelor Science/Bachelor of Business and Commerce is based on the following requirements:

The following sets of Assumed Knowledge and Recommended Studies apply:

Bachelor of Science:

- Biological Science - Recommended studies: Mathematics and Chemistry,
- Chemistry - Recommended studies: Chemistry,
- Mathematical Science - Recommended studies: Mathematics,

- Science (No Key Program) - Assumed knowledge: At least two of Biology, Chemistry, Mathematics, Physics.

Bachelor of Business and Commerce

- HSC Mathematics and any two units of HSC 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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Qualification for this award requires the successful completion of 320 credit points as prescribed in the structure below.

Students who complete this award will graduate with a Bachelor of Science and a Bachelor of Business and Commerce, with the key programs from both degree courses noted on their testamur. Students within this course will only be permitted to undertake the following key programs within 3640 Bachelor of Science

- Biological Science
- Chemistry
- Mathematical Science
- No key program

Students may complete a Bachelor of Science without a key program, following the schedule of units that is listed below, and completing one of the Majors listed in the UWS Handbook entry for 3640 Bachelor of Science, provided this can be completed within the 16 Bachelor of Science units.

Students who wish to exit this double degree after their third year and graduate with a Bachelor of Science must have completed 240 credit points and completed the units as listed below in Years 1, 2 and 3.

The conceptual design of this Bachelor of Science/Bachelor of Business and Commerce double degree is as follows:

- 1) Years 1 to 3 students complete their Bachelor of Science (16 units). This includes 15 specific units and one elective unit, in most key programs;
- 2) also, in Years 1 to 3 they complete the Bachelor of Business and Commerce seven common core units and also one Bachelor of Business and Commerce key program unit. In Year 4 they complete eight Bachelor of Business and Commerce key program units.
- 3) students within this course will only be permitted to undertake the following key programs within 2739 Bachelor Business and Commerce

Please note that not all key programs are offered on both Parramatta and Campbelltown campus.

- Applied Finance
- Global Operations and Supply Chain Management
- Hospitality Management
- Human Resource Development and Organisational Development
- Human Resource Management and Industrial Relations
- International Business
- Management
- Marketing
- Sport Management

Note: It is expected that professional accreditation will be forthcoming from the Australian Human Resources Institute as regards the Human Resources Development and Organisation Development, and Human Resource Management and Industrial Relations key programs.

KP3006.1	Bachelor of Science (Biological Science)/Bachelor of Business and Commerce
KP3007.1	Bachelor of Science (Chemistry)/Bachelor of Business and Commerce
KP3008.1	Bachelor of Science (Mathematical Science)/Bachelor of Business and Commerce
KP3009.1	Bachelor of Science (No Key Program)/Bachelor of Business and Commerce

Bachelor of Science/Bachelor of International Studies

3660.2

Students should follow the course structure for the course version relevant to the year they commenced. This course version applies to students who commenced study in this course in 2011 or later.

This double degree program is designed for students who want to combine their interest and expertise in science with a sophisticated understanding of international issues and systems. This will equip them to work in globalised science-based professions and industries. Graduates will have a solid grounding in a core science discipline such as Biological Science, Chemistry or Mathematics; alternatively, students can design their own academic program within the Bachelor of Science course structure, including a science Major. This will be combined with a degree in International Studies that examines the relationships of societies, cultures, languages and systems of government within the international system. It develops students' capacity to analyse the historical development of relations among

nation states and contemporary political, social and cultural issues, such as globalisation, transnationalism and migration. Students complete a major in Asian Studies and International Relations, and sub-majors are available in Japanese or Chinese.

Study Mode

Four years full-time.

Location

Campus	Attendance	Mode
Parramatta Campus	Full Time	Internal

Admission

Local students will normally be admitted through UAC. The following sets of Assumed Knowledge and Recommended Studies apply.

Bachelor of Science (Biological Science) - Recommended studies: HSC Mathematics (excluding General Mathematics) and HSC Chemistry.

Bachelor of Science (Chemistry) - Recommended studies: HSC Chemistry.

Bachelor of Science (Mathematical Science) - Recommended studies: HSC Mathematics (excluding General Mathematics).

Bachelor of Science (with no Key Program) - Assumed knowledge: At least two of HSC Biology, HSC Chemistry, HSC Mathematics (excluding General Mathematics), HSC Physics.

Bachelor of Arts - Assumed knowledge: Two units of HSC English at Band 4. Recommended studies: HSC English Standard, or equivalent

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 the University of Western Sydney via UWS International.

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 UWS.

Course Structure

Qualification for this award requires the successful completion of 320 credit points as prescribed in the structure below. Students who complete this award will graduate with a Bachelor of Science and a Bachelor of International Studies, with the key programs from both degree courses noted on their testamur.

Students are eligible to graduate with a Bachelor of Science with a relevant key program on completion of all 24 units listed in the first three years of the relevant sequence below.

Students within this course will only be permitted to undertake the following key programs within 3640 Bachelor of Science.

Biological Science

Chemistry

Mathematical Science

Science (No Key Program)

The conceptual design of this BSc/BIS double degree is as follows:

Years 1 to 3

Students will complete 160 credit points of BSc units as listed in the course structure below.

In Years 1 to 4 they will complete the four BSc/BIS core units and 12 BIS units as offered on Parramatta campus only:

• Asian Studies and International Relations major and Sub-majors are available in the BIS course as follows:

- Japanese
- Chinese

Bachelor of International Studies Units

For details of the relevant International Studies units, refer to the current listing of Bachelor of International Studies, course code 1658. Continuing students should refer to the earlier versions of 1658.

Bachelor of Science - Biological Science/ Bachelor of International Studies

Recommended Sequence

Full-Time

Year 1

Autumn session

Core Arts unit

Core Arts unit

- | | |
|-----------------|-----------------------------------|
| 300224.2 | Chemistry 1 |
| 300792.1 | Biology A - The Diversity of Life |

Spring session

Core Arts unit

Core Arts unit

- | | |
|-----------------|-----------------------------------|
| 300225.2 | Chemistry 2 |
| 300792.1 | Biology A - The Diversity of Life |

Year 2

Autumn session

BIS unit

- | | |
|-----------------|------------------|
| 300300.1 | Microbiology 1 |
| 300219.3 | Biochemistry 1 |
| 300609.1 | Plant Physiology |

Spring session

BIS unit

- | | |
|-----------------|----------------|
| 300321.1 | Microbiology 2 |
| 300220.1 | Biochemistry 2 |
| 200263.2 | Biometry |

Year 3

Autumn session

One BIS unit

Choose two of

- | | |
|-----------------|----------------------|
| 300234.2 | Molecular Biology |
| 300229.2 | Immunology |
| 300617.2 | Conservation Biology |

One Level 3 elective

Spring session

One BIS unit

Choose two of

- | | |
|-----------------|-----------------------------|
| 300645.1 | Science Research Project 2 |
| 300233.1 | Medical Microbiology |
| 300647.1 | Environmental Biotechnology |

Choose one of

- | | |
|-----------------|---------------------|
| 300608.1 | Animal Physiology |
| 300301.1 | Organic Chemistry 2 |

Year 4

Autumn session

Four BIS units

Spring session

Four BIS units

Bachelor of Science - Chemistry/Bachelor of International Studies

Recommended Sequence

Full-Time

Year 1

Autumn session

Two Core Arts units

- | | |
|-----------------|-------------|
| 300224.2 | Chemistry 1 |
|-----------------|-------------|

Choose one of

- | | |
|-----------------|-----------------------------|
| 200191.3 | Fundamentals of Mathematics |
| 300672.1 | Mathematics 1A |

Spring session

Two Core Arts units

- | | |
|-----------------|-------------|
| 300225.2 | Chemistry 2 |
|-----------------|-------------|

Choose one of

- | | |
|-----------------|--|
| 300661.1 | Integrated Science 1 |
| 300134.1 | Introduction to Information Technology |
| 300580.1 | Programming Fundamentals |
| 300613.1 | Introductory Geochemistry: Earth, Resources and Environments |
| 300559.1 | Physics 2 |
| 300792.1 | Biology A - The Diversity of Life |
| 300672.1 | Mathematics 1A |

300673.1 Mathematics 1B

Year 2

Autumn session

One BIS unit

300297.1 Analytical Chemistry 2
300301.1 Organic Chemistry 2

Choose one of

300219.3 Biochemistry 1
300611.2 Chemical Mineralogy
300300.1 Microbiology 1
300609.1 Plant Physiology
200033.3 Applied Statistics
200042.2 Introduction to Operations Research

Spring session

One BIS unit

300230.1 Inorganic Chemistry 2
300236.1 Physical Chemistry 2

Choose one of

300220.1 Biochemistry 2
300612.1 Geochemical Systems
300321.1 Microbiology 2
300608.1 Animal Physiology
200028.2 Advanced Calculus
200030.1 Differential Equations
200027.1 Linear Algebra

Year 3

Autumn session

One BIS unit

300298.1 Analytical Chemistry 3
300235.1 Organic Chemistry 3
300558.1 Physics 1

Spring session

One BIS unit

300231.1 Inorganic Chemistry 3
300303.1 Physical Chemistry 3
300645.1 Science Research Project 2

Year 4

Autumn session

Four BIS units

Spring session

Four BIS units

Bachelor of Science - Mathematical Science/ Bachelor of International Studies

Recommended Sequence

Full-Time

Year 1

Autumn session

Two Core Arts units

Two BSc Maths Science units (see below for options)

Spring session

Two Core Arts units

Two BSc Maths Science units (see below for options)

Year 1 BSc Mathematical Science units (Note: check session of offer)

Students must complete the following

300672.1 Mathematics 1A
300673.1 Mathematics 1B
200025.1 Discrete Mathematics

And choose one of

300700.3 Statistical Decision Making
200263.2 Biometry

Year 2

Autumn session

BIS unit

Three BSc Maths Science units (see below for options)

Spring session

BIS unit

Three BSc Maths Science units (see below for options)

Year 2 BSc Mathematical Science units (Note: check session of offer)

Students must complete the following

300580.1 Programming Fundamentals
200028.2 Advanced Calculus
200027.1 Linear Algebra

Choose one of

300224.2 Chemistry 1
300558.1 Physics 1
300232.1 Introduction to Earth Sciences
300792.1 Biology A - The Diversity of Life
300613.1 Introductory Geochemistry: Earth, Resources and Environments
300559.1 Physics 2
300793.1 Biology B - Cellular Processes

Choose one of

200042.2 Introduction to Operations Research
300606.1 Foundations of Statistical Modelling and Decision Making

Choose one unit of

200033.3	Applied Statistics
200030.1	Differential Equations
300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200029.1	Numerical Analysis

Year 3**Autumn session**

One BIS unit

Three BSc Maths Science units (see below for options)

Spring session

One BIS unit

Three BSc Maths Science units (see below for options)

Year 3 BSc Mathematical Science units (Note: check session of offer)

Students must complete

200045.2	Quantitative Project
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Choose two of

200033.3	Applied Statistics
200030.1	Differential Equations
300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200029.1	Numerical Analysis

Choose three of

200193.1	Abstract Algebra
200023.2	Analysis
200036.2	Data Mining and Visualisation
200024.1	Mathematical Finance
200022.2	Mathematical Modelling
300670.1	Optimisation Techniques
300671.1	Principles and Practice of Decision Making
200040.1	Probability & Stochastic Processes
200037.2	Regression Analysis & Experimental Design
200044.1	Simulation Techniques
200039.1	Surveys and Multivariate Analysis
200038.2	Time Series and Forecasting

Year 4**Autumn session**

Four BIS units

Spring session

Four BIS units

**Bachelor of Science - No Key Program/
Bachelor of International Studies**

Students who do not select a discipline-specific Key Program must choose the No Key Program and must select Units within the No Key Program to complete one of the Majors listed. The majors available on the Parramatta campus are: General Biology, Biochemistry and Molecular Biology, Chemistry, Geochemistry and Mathematics.

This degree must include

- core units that span three of the following discipline areas: Mathematics/Statistics, Biology, Chemistry, Computer Science, Geoscience, Physics or Integrated Science
- at least one unit must be in Mathematics or Statistics

Year 1**Autumn session**

Two Core Arts units

Choose at least one of

200192.1	Statistics for Science
300672.1	Mathematics 1A
200263.1	Biometry
300672.1	Mathematics 1A
200025.1	Discrete Mathematics

Choose one of

300792.1	Biology A - The Diversity of Life
300224.2	Chemistry 1
300232.1	Introduction to Earth Sciences
300580.1	Programming Fundamentals

Spring session

Two Core Arts units

Choose two of

300793.1	Biology B - Cellular Processes
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300580.1	Programming Fundamentals
300672.1	Mathematics 1A

Year 2**Autumn session**

One BIS unit

Choose three units from

300219.3	Biochemistry 1
300300.1	Microbiology 1
300297.1	Analytical Chemistry 2
300611.2	Chemical Mineralogy
300609.1	Plant Physiology
200033.3	Applied Statistics
200042.2	Introduction to Operations Research

Spring session

One BIS unit

Choose three units from

300220.1	Biochemistry 2
300321.1	Microbiology 2
300230.1	Inorganic Chemistry 2
300236.1	Physical Chemistry 2
300612.1	Geochemical Systems
300608.1	Animal Physiology
200028.2	Advanced Calculus
200030.1	Differential Equations
200027.1	Linear Algebra

Year 3

Autumn session

One BIS unit

Choose three units from

300298.1	Analytical Chemistry 3
300235.1	Organic Chemistry 3
300218.1	Applied Aspects of Inorganic Chemistry
300614.1	Environmental Geochemistry
300234.2	Molecular Biology
300229.2	Immunology
300617.2	Conservation Biology
200193.1	Abstract Algebra
200023.2	Analysis

Spring session

One BIS unit

Choose three units from

300231.1	Inorganic Chemistry 3
300303.1	Physical Chemistry 3
300645.1	Science Research Project 2
300749.1	Medical Microbiology
200024.1	Mathematical Finance
200022.2	Mathematical Modelling
200045.2	Quantitative Project
200038.2	Time Series and Forecasting
200036.2	Data Mining and Visualisation
300647.1	Environmental Biotechnology

Year 4

Autumn session

Four BIS units

Spring session

Four BIS units

The majors available on the Parramatta campus are:

M3036.1	General Biology
M3038.1	Biochemistry and Molecular Biology
M3019.1	Chemistry
M3020.1	Geochemistry
M3021.1	Mathematics

Diploma in Construction Management

7015.2

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 2011 or later.

This course is delivered by UWSCollege as an agent of the University of Western Sydney.

The Diploma in Construction Management is designed to provide students with the first year units included in the Bachelor of Construction Management course. The Diploma presents students with a range of subjects covering the science, building and management aspects of construction management. Transition to Tertiary study is

assisted by the inclusion of Foundation level Mathematics and Physics. The Diploma aims to produce students who are fully prepared for study beyond the first year of the Bachelor of Construction Management degree. The Diploma in Construction Management, 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 UWSCollege, please refer to the UWSCollege web site.

Study Mode

One year full-time (three semesters)

Location

Campus	Attendance	Mode
UWSC - Nirimba Education Precinct	Full Time	Internal

Admission

The aim of the course is to prepare students for tertiary study in Construction Management. The Diploma will be accredited by the University, as principal, to enable its agent, UWSCollege, to produce students who are fully prepared for study beyond the first year of a tertiary award. International students entering this Diploma are required to have met the following.

- English Entry Requirements
 - IELTS 6.0 with a minimum of 5.5 in all areas, or
 - Completion of UWS College EAPIII course with a 50% pass, or
 - A pass in the Foundation Academic English course, or
 - A pass in the UWSCollege English test at IELTS 6.0 with a minimum of 5.5 in all areas.

2. 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 to have passed the UWSCollege Foundation Certificate, offered by UWSCollege, with a Grade Point Average of 5.5 or higher.

Students are also assumed to have completed a Mathematics subject, equivalent to the Mathematics subject in the NSW Higher School Certificate or to have passed Foundation Level Mathematics.

Local students entering this Diploma are required to have met the following.

- Completed an English subject in the NSW Higher School Certificate; or to have competency in English at IELTS 6.0 with a minimum of 5.5 in all areas (unless a native speaker); or have completed the UWS College English test at IELTS 6.0 equivalent with a minimum of 5.5 in all areas; or to have passed the UWSCollege Foundation English unit.
- Other entry requirements such as an ATAR identified prior to the offer of a place, or to have completed the UWSCollege Foundation Studies course, offered by UWSCollege, with a GPA of 5.5 or better.
- Assumed knowledge of Mathematics at the NSW Higher School Certificate level or a pass in Foundation Mathematics.

Special Requirements

All students must complete Tertiary Study Skills with UWSCollege prior to completion of the Diploma.

Course Structure

Qualification for this award requires the successful completion of the units listed below.

Students are required to successfully complete the following units

700020.1	Physics and Materials (UWSC)
700021.1	Engineering and Design Concepts (UWSC)
700038.2	Engineering Design and Construction Practice (UWSC)
700070.1	Building 1 (UWSC)
700071.1	Building 2 (UWSC)
700003.2	Management Dynamics (UWSC)
700004.1	Introduction to Business Law (UWSC)
700005.1	Accounting Information for Managers (UWSC)

Students are required to achieve a Satisfactory grade for the following units

700026.1	Physics (UWSCFS)
700069.1	Mathematics B (UWSCFS)

Students also complete a special requirement unit, Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Construction Management Fast Track

7016.1

This course is delivered by UWSCollege as an agent of the University of Western Sydney.

The Diploma in Construction Management (Fast Track) is designed to provide students with the first year units included in the Bachelor of Construction Management course. The Diploma presents students with a range of subjects covering the science, building and management aspects of construction management. The Diploma aims to produce students who are fully prepared for study beyond the first year of the Bachelor of Construction Management degree. The Diploma in Construction Management, 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 UWSCollege, please refer to the UWSCollege web site.

Study Mode

Eight months (two semesters)

Location

Campus	Attendance Mode
UWSC - Nirimba Education Precinct	Full Time Internal

Admission

1. English Entry Requirements International students must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum of 5.0 in all areas, or
- Completion of UWS College EAPIII course with a 50% pass OR
- A pass in the Foundation Academic English course OR
- A pass in the UWSCollege English Entrance test at IELTS 6.0 equivalent.

2. 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 to have passed the UWS College Foundation Certificate, offered by UWS College, with a Grade Point Average of 6.0 or higher.

Local students entering this Diploma are:

1. Required to have completed an English course in the NSW Higher School Certificate; or to have competency in English at IELTS 6.0 with a minimum of 5.0 in all areas (unless a native speaker); or have completed the UWS College English test at IELTS 6.0 equivalent with a minimum of 5.0 in all areas; or to have passed the UWSCollege Foundation English Course.

2. Required to have met other entry requirements such as an ATAR identified prior to the offer of a place, or to have completed the UWS College Foundation Studies course, offered by UWS College, with a GPA of 6.0 or better.

3. Assumed to have background in Mathematics at Senior High School level or a pass grade in Foundation level Mathematics at UWSCollege and assumed background Science knowledge preferably in Physics.

The aim of the course is to prepare students for tertiary study in Construction Management. The Diploma will be accredited by the University, as principal, to enable its agent, UWS College, to produce students who are fully prepared for study beyond the first year of a tertiary award.

Special Requirements

All students must complete Tertiary Study Skills with UWSCollege prior to completion of the Diploma.

Course Structure

To be awarded the Diploma in Construction Management, student must pass the following units

700020.1	Physics and Materials (UWSC)
700021.1	Engineering and Design Concepts (UWSC)
700038.2	Engineering Design and Construction Practice (UWSC)
700070.1	Building 1 (UWSC)
700071.1	Building 2 (UWSC)
700003.2	Management Dynamics (UWSC)
700004.1	Introduction to Business Law (UWSC)
700005.1	Accounting Information for Managers (UWSC)

Students also complete a special requirement unit, Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Construction Management Fast Track

7016.2

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 Term N 2011.

This course is delivered by UWSCollege as an agent of the University of Western Sydney.

The Diploma in Construction Management (Fast Track) is designed to provide students with the first year units included in the Bachelor of Construction Management course. The Diploma presents students with a range of subjects covering the science, building and management aspects of construction management. The Diploma aims to produce students who are fully prepared for study beyond the first year of the Bachelor of Construction Management degree. The Diploma in Construction Management, 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 UWSCollege, please refer to the UWSCollege web site.

Study Mode

Eight months (two semesters)

Location

Campus	Attendance	Mode
UWSC - Nirimba Education Precinct	Full Time	Internal

Admission

The aim of the course is to prepare students for tertiary study in Construction Management. The Diploma will be accredited by the University, as principal, to enable its agent, UWSCollege, to produce students who are fully prepared for study beyond the first year of a tertiary award.

International students entering this Diploma are required to have met the following:

- English Entry Requirements
 - IELTS 6.0 with a minimum of 5.5 in all areas, or
 - Completion of UWS College EAPIII course with a 50% pass, or
 - A pass in the Foundation Academic English course, or
 - A pass in the UWSCollege English Entrance test at IELTS 6.0 with a minimum of 5.5 in all areas.

2. 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 to have passed the UWSCollege Foundation Certificate, offered by UWSCollege, with a Grade Point Average of 5.5 or higher.

Students are also assumed to have background in Mathematics at senior high school level and assumed background in Science knowledge, preferably in Physics.

Local students entering this Diploma are required to have met the following:

- Completed an English subject in the NSW Higher School Certificate; or to have competency in English at IELTS 6.0 with a minimum of 5.5 in all areas (unless a native speaker); or have completed the UWSCollege English test at IELTS 6.0 equivalent with a minimum of 5.5 in all areas; or to have passed the UWSCollege Foundation English Course.
- Required to have met other entry requirements such as an ATAR identified prior to the offer of a place, or to have completed the UWS College Foundation Studies course, offered by UWS College, with a GPA of 6.0 or better.
- Assumed to have background in Mathematics at Senior High School level or a pass grade in Foundation level Mathematics at UWSCollege and assumed background Science knowledge preferably in Physics.

The aim of the course is to prepare students for tertiary study in Construction Management. The Diploma will be accredited by the University, as principal, to enable its agent, UWS College, to produce students who are fully prepared for study beyond the first year of a tertiary award.

Special Requirements

All students must complete Tertiary Study Skills with UWS College prior to completion of the Diploma.

Course Structure

To be awarded the Diploma in Construction Management, student must pass the following units

700020.1	Physics and Materials (UWSC)
700021.1	Engineering and Design Concepts (UWSC)
700038.2	Engineering Design and Construction Practice (UWSC)
700070.1	Building 1 (UWSC)
700071.1	Building 2 (UWSC)
700003.2	Management Dynamics (UWSC)
700004.1	Introduction to Business Law (UWSC)
700005.1	Accounting Information for Managers (UWSC)

Students also complete a special requirement unit, Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Engineering

7006.2

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 2011 or later.

This course is delivered by UWSCollege as an agent of the University of Western Sydney.

The Diploma in Engineering is designed to prepare students for tertiary study in Engineering and in doing so address any perceived deficiencies in the students' mathematical and physics knowledge and skills. The Diploma presents students with subjects from the first year of subjects in the Bachelor of Engineering Degree. The Diploma aims to produce students who are fully prepared

for study beyond the first year of the Bachelor of Engineering degree. The Diploma in Engineering, 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 UWSCollege, please refer to the UWSCollege web site.

Location

Campus	Attendance	Mode
UWSC - Nirimba Education Precinct	Full Time	Internal

Admission

The aim of the Diploma is to prepare students for tertiary study in Engineering. The Diploma is accredited by the University, as principal, to enable its agent, UWSCollege, to offer to its students who are fully prepared for study beyond the first year of a tertiary award.

International students entering this Diploma are required to have met the following.

1. English Entry Requirements

- IELTS 6.0 with a minimum of 5.5 in all areas, or
- Completion of UWS College EAPIII course with a 50% pass, or
- A pass in the Foundation Academic English course, or
- A pass in the UWS College English Entrance test at IELTS 6.0 with a minimum of 5.5 in all areas.

2. 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 to have passed the UWSCollege Foundation Certificate, offered by UWSCollege, with a Grade Point Average of 5.5 or higher.

Local students entering this Diploma are required to have met the following.

1. Completed an English subject in the NSW Higher School Certificate, or to have competency in English at IELTS 6.0 with a minimum of 5.5 in all areas (unless a native speaker) or have completed the UWSCollege English test at IELTS 6.0 equivalent with a minimum of 5.5 in all areas; or to have passed the UWSCollege Foundation English unit.

2. Other entry requirements such as an ATAR identified prior to the offer of a place, or to have completed the UWSCollege Foundation Studies course, with a Grade Point Average of 5.5 or better, and a pass in Foundation level Mathematics Extension.

3. Assumed to have background in mathematics at Senior High School level and assumed background Science knowledge, preferably in Physics.

Special Requirements

All students must complete Tertiary Study Skills with UWSCollege prior to completion of the diploma.

Course Structure

Qualification for this award requires the successful completion of the units listed in the recommended sequence below.

Students who have completed an HSC equivalent qualification with study in the relevant areas will be eligible for advanced standing for Mathematics C and Physics and therefore need to complete the remaining 8 units.

Students are required to achieve a Satisfactory grade for the following units

700025.1	Mathematics C (UWSCFS)
700026.1	Physics (UWSCFS)

Students are required to successfully complete the following units

700038.2	Engineering Design and Construction Practice (UWSC)
700019.2	Mathematics for Engineers 1 (UWSC)
700020.1	Physics and Materials (UWSC)
700018.1	Engineering Computing (UWSC)
700022.1	Mathematics for Engineers 2 (UWSC)
700023.1	Fundamentals of Mechanics (UWSC)
700024.1	Electrical Fundamentals (UWSC)
700021.1	Engineering and Design Concepts (UWSC)

Students also complete a mandatory special requirement unit, Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Engineering Fast Track

7010.2

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 Term N 2010.

This course is delivered by UWSCollege as an agent of the University of Western Sydney.

The Diploma in Engineering is designed to prepare students for tertiary study in Engineering. The Diploma presents students with subjects from the first year of subjects in the Bachelor of Engineering Degree. The Diploma aims to produce students who are fully prepared for study beyond the first year of the Bachelor of Engineering degree. The Diploma in Engineering, 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 UWSCollege, please refer to the UWSCollege web site.

Location

Campus	Attendance	Mode
UWSC - Nirimba Education Precinct	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, UWSCollege, to prepare students for study beyond the first year of a tertiary award.

International students entering this Diploma are required to have met the following.

1. English Entry Requirements

- IELTS 6.0 with a minimum of 5.5 in all areas, or
- Completion of UWS College EAPIII course with a 50% pass, or
- A pass in the Foundation Academic English course, or
- A pass in the UWS College English Entrance test at IELTS 6.0 with a minimum of 5.5 in all areas.

2. 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 to have passed the UWS College Foundation Certificate, offered by UWS College, with a Grade Point Average of 6.0 or higher.

Students are also assumed to have background in Mathematics at senior high school level and assumed background Science knowledge, preferably in Physics.

Local students entering this Diploma are required to have met the following.

1. Completed an English subject in the NSW Higher School Certificate; or to have competency in English at IELTS 6.0 with a minimum of 5.5 in all areas (unless a native speaker); or have completed the UWS College English test at IELTS 6.0 equivalent with a minimum of 5.5 in all areas; or to have passed the UWS College Foundation English unit.
2. Other entry requirements such as an ATAR identified prior to the offer of a place, or to have completed the UWS College Foundation Studies course, with a GPA of 6.0 or better and a pass in Foundation level Mathematics Extension.
3. Assumed to have background in Mathematics at senior high school level and assumed background Science knowledge, preferably in Physics.

Special Requirements

All students must complete Tertiary Study Skills with UWS College prior to completion of the Diploma.

Course Structure

Qualification for this award requires the successful completion of the units listed below.

700018.1	Engineering Computing (UWSC)
700019.2	Mathematics for Engineers 1 (UWSC)
700020.1	Physics and Materials (UWSC)
700021.1	Engineering and Design Concepts (UWSC)
700022.1	Mathematics for Engineers 2 (UWSC)
700023.1	Fundamentals of Mechanics (UWSC)
700024.1	Electrical Fundamentals (UWSC)
700038.2	Engineering Design and Construction Practice (UWSC)

Students also complete a mandatory special requirement unit, Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Health Science Fast Track

7014.1

This course is delivered by UWS College as an agent of the University of Western Sydney.

The Diploma in Health Science (Fast Track) is designed to provide students with the first year units included in the Bachelor of Health Science course. The Diploma presents students with a range of subjects covering introductory Science, Communication and Health aspects of the Bachelor of Health Science course. The Diploma aims to produce students who are fully prepared for study beyond the first year of the Bachelor of Health Science degree. The Diploma in Health Science, 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 UWS College, please refer to the UWS College web site.

Study Mode

Eight months (two semesters)

Location

Campus

UWSC - Nirimba Education Precinct

Attendance Mode

Full Time Internal

Admission

The aim of the course is to prepare students for tertiary study in the Health Science areas of Health Promotion, Therapeutic Recreation, Health Services Management or PDHPE. The Diploma will be accredited by the University, as principal, to enable its agent, UWS College, to produce students who are fully prepared for study beyond the first year of a tertiary award.

1. English Entry Requirements International students must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum of 5.0 in all areas OR
- Completion of UWS College EAPIII course with a 50% pass OR
- A "B" grade in the Foundation Academic English course OR
- A pass in the UWS College English Entrance test at IELTS 6.0 equivalent.

2. 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 to have passed the UWS College Foundation Certificate, offered by UWS College, with a Grade Point Average of 6.0 or higher.

Local students entering this Diploma are:

1. Required to have completed an English course in the NSW Higher School Certificate; or to have competency in English at IELTS 6.0 with a minimum of 5.0 in all areas (unless a native speaker); or have completed the UWS College English test at IELTS 6.0 equivalent with a minimum of 5.0 in all areas; or to have passed the UWS College Foundation English Course.

2. Required to have met other entry requirements such as an ATAR identified prior to the offer of a place, or to have completed the UWS College Foundation Studies course, offered by UWS College, with a GPA of 6.0 or better.

Course Structure

PDHPE Stream

Successful completion of the PDHPE Stream will allow students to enter the second year of the Bachelor of Health Science (PDHPE) course at UWS with 80cp advanced standing.

Qualification for this award requires the successful completion of the units listed below.

700060.1	Psychology and Health (UWSC)
700061.1	Introduction to Human Biology (UWSC)
700062.2	Communication in Health (UWSC)
700064.1	Foundations of Research and Evidence-Based Practice (UWSC)
700066.1	Population Health and Society (UWSC)
700067.1	Professional Health Competencies (UWSC)
700072.1	Culture, Diversity and Health (UWSC)
700073.1	Fundamentals of Exercise Science (UWSC)

Students also complete a special requirement unit, Tertiary Study Skills, although this does not count for credit towards the Diploma.

Health Promotion, Therapeutic Recreation, Health Services Management Stream

Successful completion of the Health Promotion, Therapeutic Recreation, Health Services Management Stream will allow students to enter the second year of one of the following courses at UWS with 80cp advanced standing.

- Bachelor of Health Science (Health Promotion), OR
- Bachelor of Health Science (Health Services Management), OR
- Bachelor of Health Sciences (Therapeutic Recreation)

Qualification for this award requires the successful completion of the units listed below.

700060.1	Psychology and Health (UWSC)
700061.1	Introduction to Human Biology (UWSC)
700062.2	Communication in Health (UWSC)
700064.1	Foundations of Research and Evidence-Based Practice (UWSC)
700065.1	Approaches to Health Promotion (UWSC)
700066.1	Population Health and Society (UWSC)
700067.1	Professional Health Competencies (UWSC)
700072.1	Culture, Diversity and Health (UWSC)

Students also complete a special requirement unit, Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Health Science (Health Promotion, Health Services Mgmt & Therapeutic Recreation Pathway)

7018.1

This course, along with 7017 Diploma in Health Science (PDHPE Pathway), replaces 7013 Diploma in Health Science from 2011.

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 2011 or later.

This course is delivered by UWS College as an agent of the University of Western Sydney.

The Diploma in Health Science (Health Promotion, Health Services Management and Therapeutic Recreation Pathway) is designed to provide students with the first year units included in the Bachelor of Health Science course. The Diploma presents students with subjects covering introductory Science, Communication and Health aspects of the Bachelor of Health Science course. Transition to tertiary study is assisted by the inclusion of Foundation level Academic English and Science. The Diploma aims to produce students who are fully prepared for study beyond the first year of the Bachelor of Health Science degree in the specified key programs of Health Promotion, Health Services Management and Therapeutic Recreation. This course, 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 UWS College, please refer to the UWS College web site.

Study Mode

One year full-time (three semesters).

Location

Campus

UWSC - Nirimba Education Precinct

Attendance Mode

Full Time Internal

Admission

The aim of the course is to prepare students for tertiary study in Health Science areas of Health Promotion, Health Services Management and Therapeutic Recreation. The Diploma will be accredited by the University, as principal, to enable its agent, UWS College, to produce students who are fully prepared for study beyond the first year of a tertiary award.

1. English Entry Requirements. International students must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum of 5.5 in all areas, or
- Completion of UWS College EAP III course with a 50% pass, or
- A "B" grade in the Foundation Academic English unit, or
- A pass in the UWS College English Entrance test at IELTS 6.0 equivalent.

2. 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 to have passed the UWS College Foundation Certificate, offered by UWS College, with a Grade Point Average of 5.5 or higher.

Local students entering this Diploma are:

1. Required to have completed an English subject in the NSW Higher School Certificate; or to have competency in English at IELTS 6.0 with a minimum of 5.5 in all areas (unless a native speaker); or have completed the UWS College English test at IELTS 6.0 equivalent with a minimum of 5.5 in all areas; or to have gained a "B" grade in the UWS College Foundation English unit.
2. Required to have met other entry requirements such as an ATAR identified prior to the offer of a place, or to have completed the UWS College Foundation Studies course, offered by UWS College, with a GPA of 5.5 or better

Course Structure

Successful completion of the following units will allow students to enter the second year of the Bachelor of Health Science (with key programs in Health Promotion, Health Services Management, or Therapeutic Recreation) at UWS with 80cp advanced standing.

Qualification for this award requires the successful completion of the units listed below.

700067.1	Professional Health Competencies (UWSC)
700066.1	Population Health and Society (UWSC)
700062.2	Communication in Health (UWSC)
700060.1	Psychology and Health (UWSC)
700061.1	Introduction to Human Biology (UWSC)
700064.1	Foundations of Research and Evidence-Based Practice (UWSC)
700063.1	Outdoor Recreation (UWSC)
700075.1	Professional Pathways in Health Science (UWSC)

Students must pass, with a satisfactory grade, the following units

700056.1	Academic English (UWSCFS)
700059.2	Science for Health Science (UWSCFS)

Students also complete a mandatory unit Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Health Science (Health Promo, Health Services Mgt & Therapeutic Rec'n Pathway) Fast Track

7019.1

This course replaces 7014 Diploma in Health Science Fast Track from Term 2, 2011.

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 2011 or later.

The Diploma in Health Science (Health Promotion, Health Services Management and Therapeutic Recreation Pathway) Fast Track is designed to provide students with the first year units included in the Bachelor of Health Science course. The Diploma presents students with subjects covering introductory Science, Communication and Health aspects of the Bachelor of Health Science course. The Diploma aims to produce students who are fully prepared for study beyond the first year of the Bachelor of Health Science degree in the specified key programs of Health Promotion, Health Services Management and Therapeutic Recreation. This course, 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 UWS College, please refer to the UWS College web site.

Study Mode

Eight months (two semesters)

Location

Campus	Attendance Mode
UWSC - Nirimba Education Precinct	Full Time Internal

Admission

The aim of the course is to prepare students for tertiary study in Health Science areas of Health Promotion, Health Services Management and Therapeutic Recreation. The Diploma will be accredited by the University, as principal, to enable its agent, UWS College, to produce students who are fully prepared for study beyond the first year of a tertiary award.

1. English Entry Requirements. International students must satisfy one of the following language requirements:
 - IELTS 6.0 with a minimum of 5.5 in all areas, or
 - Completion of UWS College EAPIII course with a 50% pass, or
 - A "B" grade in the Foundation Academic English unit, or
 - A pass in the UWS College English Entrance test at IELTS 6.0 equivalent.
2. 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 to have passed the UWS College Foundation Certificate, offered by UWS College, with a Grade Point Average of 6.0 or higher.

Local students entering this Diploma are:

1. Required to have completed an English subject in the NSW Higher School Certificate; or to have competency in English at IELTS 6.0 with a minimum of 5.5 in all areas (unless a native speaker); or have completed the UWS College English test at IELTS 6.0 equivalent with a minimum of 5.5 in all areas; or to have gained a "B" grade in the UWS College Foundation English unit.
2. Required to have met other entry requirements such as an ATAR identified prior to the offer of a place, or to have

completed the UWS College Foundation Studies course, offered by UWS College, with a GPA of 6.0 or better.

Course Structure

Successful completion of the above units will allow students to enter the second year of the Bachelor of Health Science (with key programs in Health Promotion, Health Services Management, or Therapeutic Recreation) at UWS with 80cp advanced standing.

Qualification for this award requires the successful completion of the units listed below.

700067.1	Professional Health Competencies (UWSC)
700066.1	Population Health and Society (UWSC)
700062.2	Communication in Health (UWSC)
700060.1	Psychology and Health (UWSC)
700061.1	Introduction to Human Biology (UWSC)
700064.1	Foundations of Research and Evidence-Based Practice (UWSC)
700063.1	Outdoor Recreation (UWSC)
700075.1	Professional Pathways in Health Science (UWSC)

Students also complete a special requirement unit, Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Health Science (Personal Development, Health and Physical Education Pathway)

7017.1

This course, along with 7018 Diploma in Health Science (Health Promotion, Health Services Management and Therapeutic Recreation Pathway), replaces 7013 Diploma in Health Science from 2011.

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 2011 or later.

This course is delivered by UWS College as an agent of the University of Western Sydney.

The Diploma in Health Science (PDHPE Pathway) is designed to provide students with the first year units included in the Bachelor of Health Science (PDHPE) course. The Diploma presents students with subjects covering introductory Science, Communication and Health aspects of the Bachelor of Health Science course. Transition to tertiary study is assisted by the inclusion of Foundation level Academic English and Science. The Diploma aims to produce students who are fully prepared for study beyond the first year of the Bachelor of Health Science degree in the specified key programs of PDHPE. This course, 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 UWS College, please refer to the UWS College web site.

Study Mode

One year full-time (three semesters)

Location

Campus	Attendance	Mode
UWSC - Nirimba Education Precinct	Full Time	Internal

Admission

The aim of the course is to prepare students for tertiary study in Health Science areas of PDHPE. The Diploma will be accredited by the University, as principal, to enable its agent, UWS College, to produce students who are fully prepared for study beyond the first year of a tertiary award.

1. English Entry Requirements. International students must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum of 5.5 in all areas, or
- Completion of UWS College EAP III course with a 50% pass, or
- A "B" grade in the Foundation Academic English unit, or
- A pass in the UWS College English Entrance test at IELTS 6.0 equivalent.

2. 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 to have passed the UWS College Foundation Certificate, offered by UWS College, with a Grade Point Average of 5.5 or higher.

Local students entering this Diploma are:

- required to have completed an English subject in the NSW Higher School Certificate; or to have competency in English at IELTS 6.0 with a minimum of 5.5 in all areas (unless a native speaker); or have completed the UWS College English test at IELTS 6.0 equivalent with a minimum of 5.5 in all areas; or to have gained a "B" grade in the UWS College Foundation English unit.
- required to have met other entry requirements such as an ATAR identified prior to the offer of a place, or to have completed the UWS College Foundation Studies course, offered by UWS College, with a GPA of 5.5 or better.

Course Structure

Successful completion of the following units will allow students to enter the second year of the Bachelor of Health Science (PDHPE) course at UWS with 80cp advanced standing.

Qualification for this award requires the successful completion of the units listed below.

700067.1	Professional Health Competencies (UWSC)
700066.1	Population Health and Society (UWSC)
700062.2	Communication in Health (UWSC)
700060.1	Psychology and Health (UWSC)
700061.1	Introduction to Human Biology (UWSC)
700064.1	Foundations of Research and Evidence-Based Practice (UWSC)
700063.1	Outdoor Recreation (UWSC)
700073.1	Fundamentals of Exercise Science (UWSC)

Students must pass, with a satisfactory grade, the following units

700056.1	Academic English (UWSCFS)
700059.2	Science for Health Science (UWSCFS)

Students also complete a special requirement unit, Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Information and Communications Technology

7005.2

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 2011 or later.

This course is delivered by UWSCollege as an agent of the University of Western Sydney.

The Diploma in Information and Communications Technology is designed to provide a generalist tertiary level foundation for further study in undergraduate Information and Communications Technology program. It has been constructed to provide students with a sample of ICT units and university experiences to allow for well informed choices to be made in selecting their professional focus.

The Diploma aims to produce students who are fully prepared for study beyond the first year of an undergraduate degree. The Diploma in Information and Communications Technology, completed in a smaller, more supportive learning environment than usually found in first year undergraduate programs, is designed to develop students who are more aware of their roles and responsibilities within a university, 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 UWSCollege, please refer to the UWSCollege web site.

Location

Campus	Attendance	Mode
UWSC - Nirimba Education Precinct	Full Time	Internal

Admission

The aim of the Diploma is to prepare students for tertiary study in Information and Communications Technology. The Diploma is accredited by the University, as principal, to enable its agent, UWSCollege, to offer to its students who are fully prepared for study beyond the first year of a tertiary award.

International students entering this Diploma are required to have met the following.

1. English Entry Requirements

- IELTS 6.0 with a minimum of 5.5 in all areas, or
- Completion of UWSCollege EAPIII course with a 50% pass level, or
- Pass in the Foundation Studies English, or
- A pass in the UWSCollege English test at IELTS 6.0 with a minimum of 5.5 in all areas.

2. 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 to have passed the UWSCollege Foundation Certificate, offered by UWSCollege, with a Grade Point Average of 5.5 or higher.

Students are also assumed to have completed a Mathematics subject, equivalent to the Mathematics subject in the NSW Higher School Certificate or to have passed Foundation Level Mathematics.

Local students entering this Diploma are required to have met the following.

1. Completed an English subject in the NSW Higher School Certificate, or to have competency in English at IELTS 6.0 with a minimum of 5.5 in all areas (unless a native speaker) or have completed the UWSCollege English test at IELTS 6.0 equivalent with a minimum of 5.5 in all areas or to have passed the UWSCollege Foundation English unit.
2. Other entry requirements such as an ATAR identified prior to the offer of a place, or to have completed the UWSCollege Foundation Studies course, offered by UWSCollege, with a Grade Point Average of 5.5 or better.
3. Assumed knowledge of Mathematics at the NSW Higher School Certificate or a pass in Foundation Mathematics.

Special Requirements

Students must complete Tertiary Study Skills with UWSCollege prior to completion of the diploma.

Course Structure

To be awarded a Diploma in Information and Communications Technology students will successfully complete with at least a pass (50% or more) the eight units listed below.

Students who wish to enter the Bachelor of Computing on completion of this Diploma course will, subject to student numbers, study 700007 Statistics for Business (UWSC). Students intending to enter the Bachelor of Information and Communications Technology will study 700041 Statistical Decision Making (UWSC).

All other units are compulsory core units of the course.

Choose one of

700007.2	Statistics for Business (UWSC)
700041.2	Statistical Decision Making (UWSC)

Students must successfully complete the following units

700040.1	Principles of Professional Communication 1 (UWSC)
700008.1	Programming Fundamentals (UWSC)
700000.2	Information Systems in Context (UWSC)
700011.1	Database Design and Development (UWSC)
700012.1	Computer Networking (UWSC)
700013.1	System Analysis and Design (UWSC)
700039.1	Object Oriented Analysis (UWSC)

Students are also required to achieve a Satisfactory grade for the following two units for which no advanced standing is granted in the degree program.

700045.1	Statistics for Academic Purposes (UWSCFS)
700047.1	Programming Design (UWSCFS)

Students also complete a mandatory unit Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Information and Communications Technology Fast Track

7004.2

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 Term N 2010.

This course is delivered by UWSCollege as an agent of the University of Western Sydney.

The Diploma in Information and Communications Technology is designed to provide a generalist tertiary level foundation for further study in undergraduate Information and Communications Technology and Computing programs. It has been constructed to provide students with a sample of computing units and university experiences to allow for well informed choices to be made in selecting their professional focus.

The Diploma aims to produce students who are fully prepared for study beyond the first year of an undergraduate degree. The Diploma in Information and Communications Technology, completed in a smaller, more supportive learning environment than usually found in first year undergraduate programs, is designed to develop students who are more aware of their roles and responsibilities within a university, 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 UWSCollege, please refer to the UWSCollege web site.

Location

Campus	Attendance	Mode
UWSC - Nirimba Education Precinct	Full Time	Internal

Admission

The aim of the Diploma is to prepare students for tertiary study in Information and Communications Technology or Computing. The Diploma is accredited by the University, as principal, to enable its agent, UWSCollege, to offer to its students who are fully prepared for study beyond the first year of a tertiary award.

International students entering this Diploma are required to have met the following.

- English Entry Requirements
 - IELTS 6.0 with a minimum of 5.5 in all areas, or
 - Completion of UWSCollege EAPIII course with a 50% pass level, or
 - Pass in the Foundation Studies English course, or
 - A pass in the UWSCollege English test at IELTS 6.0 with a minimum of 5.5 in all areas

2. 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 to have passed the Foundation

Certificate, offered by UWSCollege, with a Grade Point Average (GPA) of 6.0 or higher.

Students are also assumed to have completed a Mathematics subject, equivalent to the Mathematics course in the NSW Higher School Certificate or to have passed Foundation Level Mathematics.

Local students entering this Diploma are required to have met the following.

- Completed an English subject in the NSW Higher School Certificate; or to have competency in English at IELTS 6.0 with a minimum of 5.5 in all areas (unless a native speaker); or have completed the UWS College English test at IELTS 6.0 equivalent with a minimum of 5.5 in all areas; or to have passed the UWSCollege Foundation English unit.
- Other entry requirements such as an ATAR identified prior to the offer of a place, or to have completed the UWSCollege Foundation Studies course, offered by UWSCollege, with a GPA of 6.0 or better.
- Assumed knowledge of Mathematics at the NSW Higher School Certificate or a pass in Foundation Mathematics.

Special Requirements

Students must complete Tertiary Study Skills with UWSCollege prior to completion of the diploma.

Course Structure

To be awarded a Diploma in Information and Communications Technology Fast Track, students will successfully complete with at least a pass (50% or more) eight units as listed below.

Students who wish to enter the B Computing on completion of this Diploma course will, subject to student numbers, study 700007 Statistics for Business (UWSC). Students intending to enter the Bachelor of Information and Communications Technology will, subject to student numbers, study 700041 Statistical Decision Making (UWSC).

All other units are compulsory core units of the course. Choose one of

- 700007.2** Statistics for Business (UWSC)
- 700041.2** Statistical Decision Making (UWSC)

Students must also complete the following seven units:

- 700040.1** Principles of Professional Communication 1 (UWSC)
- 700008.1** Programming Fundamentals (UWSC)
- 700000.2** Information Systems in Context (UWSC)
- 700011.1** Database Design and Development (UWSC)
- 700012.1** Computer Networking (UWSC)
- 700013.1** System Analysis and Design (UWSC)
- 700039.1** Object Oriented Analysis (UWSC)

Students also complete a mandatory unit Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Science

7003.3

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 2011 or later.

This course is delivered by UWSCollege as an agent of the University of Western Sydney.

The Diploma in Science is designed to prepare students for tertiary study in Science and in doing so address any perceived deficiencies in the students' mathematical and chemistry knowledge and skills. It presents students with first year level Bachelor of Science subjects. The Diploma aims to produce students who are fully prepared for study beyond the first year of the Bachelor of Science degree. The Diploma in Science, 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 UWSCollege, please refer to the UWSCollege web site.

Location

Campus	Attendance	Mode
UWSC - Nirimba Education Precinct	Full Time	Internal

Admission

The aim of the course is to prepare students for tertiary study in Science. The Diploma will be accredited by the University, as principal, to enable its agent, UWSCollege, to produce students who should be fully prepared for study beyond the first year of a tertiary award.

International students entering this Diploma are required to have met the following.

1. English Entry Requirements

- IELTS 6.0 with a minimum of 5.5 in all areas, or
- Completion of UWSCollege EAPIII course with a 50% pass, or
- A pass in the Foundation Academic English, or
- A pass in the UWSCollege English test at IELTS 6.0 with a minimum of 5.5 in all areas.

2. 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 to have passed the UWSCollege Foundation Certificate, offered by UWSCollege, with a Grade Point Average of 5.5 or higher.

Students are also assumed to have completed some study in Mathematics and Science at senior high school level or its equivalent.

Local students entering this Diploma are required to have met the following.

1. Completed an English subject in the NSW Higher School Certificate, or to have competency in English at IELTS 6.0 with a minimum of 5.5 in all areas (unless a native speaker) or have completed the UWSCollege English test at IELTS 6.0 equivalent with a minimum of 5.5 in all areas or to have passed the UWSCollege Foundation English unit.

2. Other entry requirements such as an ATAR identified prior to the offer of a place, or to have completed the UWSCollege Foundation Studies course, with a Grade Point Average of 5.5 or better.

3. Assumed to have completed some study in Mathematics and Science at senior high school level or its equivalent.

Special Requirements

All students must complete Tertiary Study Skills with UWSCollege prior to completion of the Diploma.

Course Structure

Students must successfully complete the following units:

70000.2	Information Systems in Context (UWSC)
70032.1	Biodiversity (UWSC)
70033.2	Biometry (UWSC)
70034.1	Cell Biology (UWSC)
70035.2	Physics 1 (UWSC)
70036.1	Chemistry 1 (UWSC)
70037.1	Chemistry 2 (UWSC)
70042.1	Professional Skills for Science (UWSC)

Students are required to achieve a Satisfactory grade in the following units

70043.1	Chemistry (UWSCFS)
70044.1	Mathematics (UWSCFS)

Students also complete a special requirement unit, Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Science Fast Track

7009.2

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 Term N 2010.

This course is delivered by UWSCollege as an agent of the University of Western Sydney.

The Diploma in Science is designed to prepare students for tertiary study in Science. It presents students with first year level Bachelor of Science subjects. The Diploma aims to produce students who are fully prepared for study beyond the first year of the Bachelor of Science degree. The Diploma in Science, 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 UWSCollege, please refer to the UWSCollege web site.

Location

Campus	Attendance	Mode
UWSC - Nirimba Education Precinct	Full Time	Internal

Admission

The aim of the course is to prepare students for tertiary study in Science. The Diploma will be accredited by the University, as principal, to enable its agent, UWSCollege, to produce students who should be fully prepared for study beyond the first year of a tertiary award.

International Students entering this Diploma are required to have met the following.

1. English Entry Requirements

- IELTS 6.0 with a minimum of 5.5 in all areas, or
- Completion of UWSCollege EAP III course with a 50% pass, or
- A pass in the Foundation Academic English course, or
- A pass in the UWSCollege English Entrance test at IELTS 6.0 with a minimum of 5.5 in all areas.

2. 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 to have passed the UWSCollege Foundation Certificate, offered by UWSCollege, with a Grade Point Average of 6.0 or higher.

Students are also assumed to have completed some study in Mathematics and Science at senior high school level or its equivalent.

Local students entering this Diploma are required to have met the following.

1. Completed an English subject in the NSW Higher School Certificate; or to have competency in English at IELTS 6.0 with a minimum of 5.5 in all areas (unless a native speaker); or have completed the UWSCollege English test at IELTS 6.0 equivalent with a minimum of 5.5 in all areas; or to have passed the UWSCollege Foundation English unit.
2. Other entry requirements such as an ATAR identified prior to the offer of a place, or to have completed the UWSCollege Foundation Studies course, offered by UWSCollege, with a GPA of 6.0 or better.
3. Assumed to have completed some study in Mathematics and Science at senior high school level or its equivalent.

Special Requirements

All students must complete Tertiary Study Skills with UWSCollege prior to completion of the Diploma.

Course Structure

This course consists of eight units of 10 credit points each (equivalent to the first year of study in the Bachelor of Science). The unit Tertiary Study Skills must be completed prior to completion of the diploma.

Students must complete the following units

700000.2	Information Systems in Context (UWSC)
700032.1	Biodiversity (UWSC)
700033.2	Biometry (UWSC)
700034.1	Cell Biology (UWSC)
700035.2	Physics 1 (UWSC)
700036.1	Chemistry 1 (UWSC)
700037.1	Chemistry 2 (UWSC)
700042.1	Professional Skills for Science (UWSC)

Unit Sets

Key Program - Science (No Key Program)

KP3005.1

Intended for students who do not wish to specialise in a single key area of study, but who want a versatile and flexible course of study in science, this program includes a core of basic science units including biology, chemistry, mathematics and physics. You can then add units from a range of scientific and other disciplines to suit your interests and career aspirations.

Offer

Campus	Mode
Campbelltown Campus	Internal
Hawkesbury Campus	Internal
Parramatta Campus	Internal

Unit Set Structure

Hawkesbury Campus

Note 1: Students must choose one of the following majors: Forensic Science, Microbiology, General Biology, Conservation Biology, Biochemistry and Molecular Biology.

Note 2: In any one year, a maximum of four units must be chosen in each session.

Note 3: Students commencing mid-year should seek academic advice about completing their chosen major; more than three years may be required for completing in some cases due to the Semester some units are offered in and the sequence in which they must be completed.

Year 1

Choose at least one of

200191.3	Fundamentals of Mathematics
200263.2	Biometry

Choose five units from List A below

And two electives

List A

Autumn session

300792.1	Biology A - The Diversity of Life
300558.1	Physics 1
300497.1	Professional Skills for Science
300661.1	Integrated Science 1

Choose one of

300469.2	Introductory Chemistry
300224.2	Chemistry 1

Spring session

300793.1	Biology B - Cellular Processes
300225.2	Chemistry 2
300134.1	Introduction to Information Technology
300753.1	Introduction to Human Physiology

Year 2

Choose six units from List B below

And two electives

List B

Autumn session

300219.3	Biochemistry 1
300300.1	Microbiology 1
300609.1	Plant Physiology
300634.1	Ecology
300493.1	Forensic and Environmental Analysis
300301.1	Organic Chemistry 2

Spring session

300321.1	Microbiology 2
300220.1	Biochemistry 2
300623.2	Genetics
300328.1	Botany

Year 3

Choose four units from List C below

And two Level 3 electives

And two electives

List C

Autumn session

300307.1	Analytical Microbiology
300234.2	Molecular Biology
300617.2	Conservation Biology
300787.1	Plant Microbiology and Protection
300781.1	Atmospheric Science

Spring session

300645.1	Science Research Project 2
300470.2	Vertebrate Biodiversity
300465.1	Aquatic Ecology
300647.1	Environmental Biotechnology
300407.1	Mammalian Molecular Medicine
300408.1	Mammalian Cell Biology and Biotechnology
300656.1	Laboratory Quality Management
300749.1	Medical Microbiology
300334.1	Invertebrate Biology
300235.1	Organic Chemistry 3

Parramatta Campus

Note 1: Students must choose one of the following majors: General Biology, Biochemistry and Molecular Biology, Chemistry, Geochemistry or Mathematics.

Note 2: In any one year, a maximum of four units must be chosen in each session.

Year 1

Choose at least one of

200191.3	Fundamentals of Mathematics
300672.1	Mathematics 1A
200263.2	Biometry
300672.1	Mathematics 1A
200025.1	Discrete Mathematics

Choose five units from List A below
And two electives

List A**Autumn session**

300792.1	Biology A - The Diversity of Life
300224.2	Chemistry 1
300232.1	Introduction to Earth Sciences
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300558.1	Physics 1
300497.1	Professional Skills for Science
300661.1	Integrated Science 1

Spring session

300793.1	Biology B - Cellular Processes
300225.2	Chemistry 2
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300672.1	Mathematics 1A
300673.1	Mathematics 1B
200263.2	Biometry
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300559.1	Physics 2

Year 2

Choose six units from List B below
And two electives

List B**Autumn session**

300219.3	Biochemistry 1
300300.1	Microbiology 1
300297.1	Analytical Chemistry 2
300301.1	Organic Chemistry 2
300611.2	Chemical Mineralogy
300609.1	Plant Physiology
200033.3	Applied Statistics
200042.2	Introduction to Operations Research

Spring session

300220.1	Biochemistry 2
300321.1	Microbiology 2
300230.1	Inorganic Chemistry 2
300236.1	Physical Chemistry 2
300612.1	Geochemical Systems
300608.1	Animal Physiology
200028.2	Advanced Calculus
200030.1	Differential Equations
200027.1	Linear Algebra

Year 3

Choose four units from List C below

And two Level 3 electives

And two electives

List C**Autumn session**

300298.1	Analytical Chemistry 3
300235.1	Organic Chemistry 3
300218.1	Applied Aspects of Inorganic Chemistry
300614.1	Environmental Geochemistry
300234.2	Molecular Biology
300229.2	Immunology
300617.2	Conservation Biology
200193.1	Abstract Algebra
200023.2	Analysis

Spring session

300231.1	Inorganic Chemistry 3
300303.1	Physical Chemistry 3
300645.1	Science Research Project 2
300749.1	Medical Microbiology
200024.1	Mathematical Finance
200022.2	Mathematical Modelling
200045.2	Quantitative Project
200038.2	Time Series and Forecasting
200036.2	Data Mining and Visualisation
300647.1	Environmental Biotechnology

Campbelltown Campus

Note 1: Students must choose one of the following majors: Microbiology, General Biology, Biochemistry and Molecular Biology, Chemistry or Mathematics.

Note 2: In any one year, a maximum of four units must be chosen in each session.

Year 1

Choose at least one of

200191.3	Fundamentals of Mathematics
300672.1	Mathematics 1A
300700.3	Statistical Decision Making

Choose five units from List A below

And two electives

List A**Autumn session**

300539.1	Biodiversity
300554.1	Principles of Chemistry
200191.3	Fundamentals of Mathematics
300672.1	Mathematics 1A
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300558.1	Physics 1
300661.1	Integrated Science 1

Spring Session

300543.1	Cell Biology
300550.1	Medicinal Chemistry
300673.1	Mathematics 1B
300700.3	Statistical Decision Making

300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300559.1	Physics 2
200025.1	Discrete Mathematics
300753.1	Introduction to Human Physiology

Year 2

Choose six units from List B below
And two electives

List B**Autumn session**

300555.1	Proteins and Genes
300300.1	Microbiology 1
300547.1	Human Genetics
300545.1	Coordination Chemistry
300540.1	Biomolecular Dynamics
300413.1	Applied Instrumentation in Nanotechnology
200028.2	Advanced Calculus
200030.1	Differential Equations
200027.1	Linear Algebra

Spring session

300548.1	Human Metabolism and Disease
300321.1	Microbiology 2
300590.1	Nanochemistry
300606.1	Foundations of Statistical Modelling and Decision Making
200033.3	Applied Statistics
300297.1	Analytical Chemistry 2
300553.1	Molecules of Life: Synthesis and Reactivity

Year 3

Choose four units from List C below
And two Level 3 electives
And two electives

List C**Autumn session**

300537.1	Advanced Chemical Analysis
300546.1	Drug Design and Synthesis
300549.1	Human Molecular Biology
300556.1	Analytical Protein Science
300557.1	Molecular Spectroscopy
200036.2	Data Mining and Visualisation
300544.1	Cell Signalling

Spring Session

300538.1	Advanced Inorganic Chemistry
300475.1	Molecular Pharmacokinetics
300324.1	Pharmacological Chemistry
300542.1	Biomolecular Science Project
300749.1	Medical Microbiology
300757.1	Molecular Biology of the Immune System
200037.2	Regression Analysis & Experimental Design
200022.2	Mathematical Modelling
200045.2	Quantitative Project

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Bachelor of Science (Biological Science)/Bachelor of Business and Commerce**KP3006.1**

This double degree program equips its graduates with a qualification in science, combined with a good understanding of basic business issues, complemented by a high level of knowledge relevant to a specific business discipline as applied in a global environment. Graduates will have a solid grounding in a core science discipline such as Biological Science, Chemistry or Mathematics; alternatively, students can design their own academic program within the Bachelor of Science course structure, including a science Major. This qualification in science is combined with one of the following key programs from the Bachelor of Business and Commerce: Applied Finance; Global Operations and Supply Chain Management; Hospitality Management; Human Resource Development and Organisational Development; Human Resource Management and Industrial Relations; International Business; Management; Marketing; Sport Management. Graduates will be equipped to work as scientists, with a good understanding of business principles and practices. Alternatively, as Business and Commerce graduates they will be well-prepared to work in science-based industries and institutions.

Offer

Campus	Mode
Campbelltown Campus	Internal
Parramatta Campus	Internal

Unit Set Structure**Bachelor of Science (Biological Science)/Bachelor of Business and Commerce (Applied Finance)****Parramatta and Campbelltown campus****Year 1****Autumn session**

200336.2	Business Academic Skills
200525.1	Principles of Economics

Biological Science Units - Parramatta Campus

300224.2	Chemistry 1
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300792.1 Biology A - The Diversity of Life

Biological Science Units - Campbelltown Campus

300554.1 Principles of Chemistry
300539.1 Biodiversity

Spring session

200083.1 Marketing Principles
200101.2 Accounting Information for Managers

Biological Science Units - Parramatta Campus

300225.2 Chemistry 2
300793.1 Biology B - Cellular Processes

Biological Science Units - Campbelltown Campus

300550.1 Medicinal Chemistry
300543.1 Cell Biology

Year 2

Autumn session

200571.1 Management Dynamics

Biological Science Units - Parramatta Campus

300300.1 Microbiology 1
300219.3 Biochemistry 1
300609.1 Plant Physiology

Biological Science Units - Campbelltown Campus

300300.1 Microbiology 1
300555.1 Proteins and Genes
300547.1 Human Genetics

Spring session

200184.2 Introduction to Business Law

Biological Science Units - Parramatta Campus

300321.1 Microbiology 2
300220.1 Biochemistry 2
200263.2 Biometry

Biological Science Units - Campbelltown Campus

300321.1 Microbiology 2
300548.1 Human Metabolism and Disease
300700.3 Statistical Decision Making

Year 3

Autumn session

One Level 3 elective

And one elective

Biological Science Units - Parramatta Campus

Choose two of

300234.2 Molecular Biology

300229.2 Immunology
300617.2 Conservation Biology

Biological Science Units - Campbelltown Campus

Choose two of

300556.1 Analytical Protein Science
300544.1 Cell Signalling
300549.1 Human Molecular Biology

Spring session

200488.2 Corporate Financial Management

Biological Science Units - Parramatta Campus

Choose two of

300645.1 Science Research Project 2
300233.1 Medical Microbiology
300647.1 Environmental Biotechnology

Choose one of

300608.1 Animal Physiology
300301.1 Organic Chemistry 2

Biological Science Units - Campbelltown Campus

Choose two of

300757.1 Molecular Biology of the Immune System
300749.1 Medical Microbiology
300542.1 Biomolecular Science Project

Choose one of

300553.1 Molecules of Life: Synthesis and Reactivity
300505.1 Pharmacology

Year 4

Autumn session

200549.1 The Australian Macroeconomy
200048.1 Financial Institutions and Markets
200537.2 Economics and Finance Engagement Project

And one alternate unit

Spring session

200053.2 Economic Modelling
200057.2 Investment Management

And two alternate units

Alternate units

200078.1 Portfolio Management
200055.3 International Finance
200077.1 The Superannuation Industry
200079.1 Derivatives
200518.1 Behavioural Finance
200059.1 Financial Economics

Bachelor of Science (Biological Science)/ Bachelor of Business and Commerce (Global Operations and Supply Chain Management)

Parramatta campus only

Year 1

Autumn session

200336.2	Business Academic Skills
200525.1	Principles of Economics
300224.2	Chemistry 1
300792.1	Biology A - The Diversity of Life

Spring session

200083.1	Marketing Principles
200101.2	Accounting Information for Managers
300225.2	Chemistry 2
300793.1	Biology B - Cellular Processes

Year 2

Autumn session

200571.1	Management Dynamics
300300.1	Microbiology 1
300219.3	Biochemistry 1
300609.1	Plant Physiology

Spring session

200184.2	Introduction to Business Law
300321.1	Microbiology 2
300220.1	Biochemistry 2
200263.2	Biometry

Year 3

Autumn session

Choose two of

300234.2	Molecular Biology
300229.2	Immunology
300617.2	Conservation Biology

One Level 3 elective

And one elective

Spring session

200677.2	Global Supply Chain Management
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Choose two of

300645.1	Science Research Project 2
300233.1	Medical Microbiology
300647.1	Environmental Biotechnology

Choose one of

300608.1	Animal Physiology
300301.1	Organic Chemistry 2

Year 4

Autumn session

200528.1	Management of Projects
200588.1	Global Operations and Logistics Management
200667.1	Global Enterprise Resource Planning
200668.1	Technology Management for Competitiveness

Spring session

200167.1	Quality Management
200585.1	Organisational Behaviour
200565.2	Operations and Logistics in Practice
200162.1	Business Report

Bachelor of Science (Biological Science)/ Bachelor of Business and Commerce (Hospitality Management)

Parramatta campus only

Year 1

Autumn session

200336.2	Business Academic Skills
200525.1	Principles of Economics
300224.2	Chemistry 1
300792.1	Biology A - The Diversity of Life

Spring session

200083.1	Marketing Principles
200101.2	Accounting Information for Managers
300225.2	Chemistry 2
300793.1	Biology B - Cellular Processes

Year 2

Autumn session

200571.1	Management Dynamics
300300.1	Microbiology 1
300219.3	Biochemistry 1
300609.1	Plant Physiology

Spring session

200184.2	Introduction to Business Law
300321.1	Microbiology 2
300220.1	Biochemistry 2
200263.2	Biometry

Year 3

Autumn session

200273.3	Managing Service and Experience
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Choose two of

300234.2	Molecular Biology
300229.2	Immunology
300617.2	Conservation Biology

One Level 3 elective

Spring session

Choose two of

- 300645.1** Science Research Project 2
- 300233.1** Medical Microbiology
- 300647.1** Environmental Biotechnology

Choose one of

- 300608.1** Animal Physiology
- 300301.1** Organic Chemistry 2

And one elective

Year 4

Autumn session

- 200709.1** Managing the Accommodation Experience
- 200710.1** Managing the Food and Beverage Experience
- 200708.1** Hospitality Industry
- 200707.1** Service Industry Studies

Spring session

- 200584.2** Hospitality Management Operations
- 200742.1** Sport and Hospitality Event Management
- 200148.1** Planning and Design of Hospitality Facilities
- 200561.2** Hospitality Management Applied Project

Bachelor of Science (Biological Science)/ Bachelor of Business and Commerce (Human Resource Development and Organisational Development)

Parramatta campus only

Year 1

Autumn session

- 200336.2** Business Academic Skills
- 200525.1** Principles of Economics
- 300224.2** Chemistry 1
- 300792.1** Biology A - The Diversity of Life

Spring session

- 200083.1** Marketing Principles
- 200101.2** Accounting Information for Managers
- 300225.2** Chemistry 2
- 300793.1** Biology B - Cellular Processes

Year 2

Autumn session

- 200571.1** Management Dynamics
- 300300.1** Microbiology 1
- 300219.3** Biochemistry 1
- 300609.1** Plant Physiology

Spring session

- 200184.2** Introduction to Business Law

- 300321.1** Microbiology 2
- 300220.1** Biochemistry 2
- 200263.2** Biometry

Year 3

Autumn session

Choose two of

- 300234.2** Molecular Biology
- 300229.2** Immunology
- 300617.2** Conservation Biology

One Level 3 elective

And one elective

Spring session

- 200300.1** Managing People at Work

Choose two of

- 300645.1** Science Research Project 2
- 300233.1** Medical Microbiology
- 300647.1** Environmental Biotechnology

Choose one of

- 300608.1** Animal Physiology
- 300301.1** Organic Chemistry 2

Year 4

Autumn session

- 200610.1** Employee Training and Development
- 200243.2** Work Employment and the Labour Market
- 200570.2** Management of Change
- 200175.4** Managing Human Resources and Industrial Relations

Spring session

- 200376.1** Managing and Developing Careers
- 200157.2** Organisational Learning and Development
- 200159.2** Organisation Analysis and Design
- 200381.3** Human Resources Development Seminar

Bachelor of Science (Biological Science)/ Bachelor of Business and Commerce (Human Resource Management and Industrial Relations)

Parramatta and Campelltown campus

Year 1

Autumn session

- 200336.2** Business Academic Skills
- 200525.1** Principles of Economics

Biological Science Units - Parramatta Campus

- 300224.2** Chemistry 1
- 300792.1** Biology A - The Diversity of Life

Biological Science Units - Campbelltown Campus

300554.1 Principles of Chemistry
300539.1 Biodiversity

Spring session

200083.1 Marketing Principles
200101.2 Accounting Information for Managers

Biological Science Units - Parramatta Campus

300225.2 Chemistry 2
300793.1 Biology B - Cellular Processes

Biological Science Units - Campbelltown Campus

300550.1 Medicinal Chemistry
300543.1 Cell Biology

Year 2**Autumn session**

200571.1 Management Dynamics

Biological Science Units - Parramatta Campus

300300.1 Microbiology 1
300219.3 Biochemistry 1
300609.1 Plant Physiology

Biological Science Units - Campbelltown Campus

300300.1 Microbiology 1
300555.1 Proteins and Genes
300547.1 Human Genetics

Spring session

200184.2 Introduction to Business Law

Biological Science Units - Parramatta Campus

300321.1 Microbiology 2
300220.1 Biochemistry 2
200263.2 Biometry

Biological Science Units - Campbelltown Campus

300321.1 Microbiology 2
300548.1 Human Metabolism and Disease
300700.3 Statistical Decision Making

Year 3**Autumn session**

One Level 3 elective
 And one elective

Biological Science Units - Parramatta Campus

Choose two of

300234.2 Molecular Biology
300229.2 Immunology
300617.2 Conservation Biology

Biological Science Units - Campbelltown Campus

Choose two of

300556.1 Analytical Protein Science
300544.1 Cell Signalling
300549.1 Human Molecular Biology

Spring session

200300.1 Managing People at Work

Biological Science Units - Parramatta Campus

Choose two of

300645.1 Science Research Project 2
300233.1 Medical Microbiology
300647.1 Environmental Biotechnology

Choose one of

300608.1 Animal Physiology
300301.1 Organic Chemistry 2

Biological Science Units - Campbelltown Campus

Choose two of

300757.1 Molecular Biology of the Immune System
300749.1 Medical Microbiology
300542.1 Biomolecular Science Project

Choose one of

300553.1 Molecules of Life: Synthesis and Reactivity
300505.1 Pharmacology

Year 4**Autumn session**

200614.1 Enterprise Industrial Relations
200621.2 International Human Resource Management
200616.2 Workplace Behaviour
200613.1 Negotiation, Bargaining and Advocacy

Spring session

200739.1 Reward and Performance Management
200740.1 Human Resource and Industrial Relations Strategy
200575.2 Processes and Evaluation in Employment Relations

Choose one of

200610.1 Employee Training and Development
200150.1 Managing Diversity
200753.1 Occupational Health and Safety

Bachelor of Science (Biological Science)/ Bachelor of Business and Commerce (International Business)

Parramatta campus only

Year 1

Autumn session

200336.2	Business Academic Skills
200525.1	Principles of Economics
300224.2	Chemistry 1
300792.1	Biology A - The Diversity of Life

Spring session

200083.1	Marketing Principles
200101.2	Accounting Information for Managers
300225.2	Chemistry 2
300793.1	Biology B - Cellular Processes

Year 2

Autumn session

200571.1	Management Dynamics
300300.1	Microbiology 1
300219.3	Biochemistry 1
300609.1	Plant Physiology

Spring session

200184.2	Introduction to Business Law
300321.1	Microbiology 2
300220.1	Biochemistry 2
200263.2	Biometry

Year 3

Autumn session

Choose two of

300234.2	Molecular Biology
300229.2	Immunology
300617.2	Conservation Biology

One Level 3 elective

And one elective

Spring session

200591.1	Introduction to International Business
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Choose two of

300645.1	Science Research Project 2
300233.1	Medical Microbiology
300647.1	Environmental Biotechnology

Choose one of

300608.1	Animal Physiology
300301.1	Organic Chemistry 2

Year 4

Autumn session

200541.1	Globalisation and Trade
200094.1	International Marketing
200626.1	International Business Strategy
200595.2	International Business Finance

Spring session

200590.1	International Business Project
200374.2	International Marketing Research
200589.1	Export Strategy and Applications

Choose one of

200098.1	The Markets of Asia
200099.2	The Markets of Europe

Bachelor of Science (Biological Science)/ Bachelor of Business and Commerce (Management)

Parramatta and Campbelltown campus

Year 1

Autumn session

200336.2	Business Academic Skills
200525.1	Principles of Economics

Biological Science Units - Parramatta Campus

300224.2	Chemistry 1
300792.1	Biology A - The Diversity of Life

Biological Science Units - Campbelltown Campus

300554.1	Principles of Chemistry
300539.1	Biodiversity

Spring session

200083.1	Marketing Principles
200101.2	Accounting Information for Managers

Biological Science Units - Parramatta Campus

300225.2	Chemistry 2
300793.1	Biology B - Cellular Processes

Biological Science Units - Campbelltown Campus

300550.1	Medicinal Chemistry
300543.1	Cell Biology

Year 2

Autumn session

200571.1	Management Dynamics
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Biological Science Units - Parramatta Campus

300300.1	Microbiology 1
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300219.3 Biochemistry 1
300609.1 Plant Physiology

Biological Science Units - Campbelltown Campus

300300.1 Microbiology 1
300555.1 Proteins and Genes
300547.1 Human Genetics

Spring session

200184.2 Introduction to Business Law

Biological Science Units - Parramatta Campus

300321.1 Microbiology 2
300220.1 Biochemistry 2
200263.2 Biometry

Biological Science Units - Campbelltown Campus

300321.1 Microbiology 2
300548.1 Human Metabolism and Disease
300700.3 Statistical Decision Making

Year 3

Autumn session

One Level 3 elective
 And one elective

Biological Science Units - Parramatta Campus

Choose two of

300234.2 Molecular Biology
300229.2 Immunology
300617.2 Conservation Biology

Biological Science Units - Campbelltown Campus

Choose two of

300556.1 Analytical Protein Science
300544.1 Cell Signalling
300549.1 Human Molecular Biology

Spring session

200585.1 Organisational Behaviour

Biological Science Units - Parramatta Campus

Choose two of

300645.1 Science Research Project 2
300233.1 Medical Microbiology
300647.1 Environmental Biotechnology

Choose one of

300608.1 Animal Physiology
300301.1 Organic Chemistry 2

Biological Science Units - Campbelltown Campus

Choose two of

300757.1 Molecular Biology of the Immune System
300749.1 Medical Microbiology

300542.1 Biomolecular Science Project

Choose one of

300553.1 Molecules of Life: Synthesis and Reactivity
300505.1 Pharmacology

Year 4

Autumn session

200158.2 Business, Society and Policy
200586.1 Cross Cultural Management
200570.2 Management of Change
200752.1 Power, Politics and Knowledge

Spring session

200588.1 Global Operations and Logistics Management
200159.2 Organisation Analysis and Design
200568.2 Contemporary Management Issues
200587.1 Strategic Management

Bachelor of Science (Biological Science)/ Bachelor of Business and Commerce (Marketing)

Parramatta and Campbelltown campus

Year 1

Autumn session

200336.2 Business Academic Skills
200525.1 Principles of Economics

Biological Science Units - Parramatta Campus

300224.2 Chemistry 1
300792.1 Biology A - The Diversity of Life

Biological Science Units - Campbelltown Campus

300554.1 Principles of Chemistry
300539.1 Biodiversity

Spring session

200083.1 Marketing Principles
200101.2 Accounting Information for Managers

Biological Science Units - Parramatta Campus

300225.2 Chemistry 2

Biological Science Units - Campbelltown Campus

300550.1 Medicinal Chemistry
300543.1 Cell Biology

Year 2

Autumn session

200571.1 Management Dynamics

Biological Science Units - Parramatta Campus

300300.1	Microbiology 1
300219.3	Biochemistry 1
300609.1	Plant Physiology

Biological Science Units - Campbelltown Campus

300300.1	Microbiology 1
300555.1	Proteins and Genes
300547.1	Human Genetics

Spring session

200184.2	Introduction to Business Law
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Biological Science Units - Parramatta Campus

300321.1	Microbiology 2
300220.1	Biochemistry 2
200263.2	Biometry

Biological Science Units - Campbelltown Campus

300321.1	Microbiology 2
300548.1	Human Metabolism and Disease
300700.3	Statistical Decision Making

Year 3**Autumn session**

One Level 3 elective
And one elective

Biological Science Units - Parramatta Campus

Choose two of

300234.2	Molecular Biology
300229.2	Immunology
300617.2	Conservation Biology

Biological Science Units - Campbelltown Campus

Choose two of

300556.1	Analytical Protein Science
300544.1	Cell Signalling
300549.1	Human Molecular Biology

Spring session

200084.1	Consumer Behaviour
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Biological Science Units - Parramatta Campus

Choose two of

300645.1	Science Research Project 2
300233.1	Medical Microbiology
300647.1	Environmental Biotechnology

Choose one of

300608.1	Animal Physiology
300301.1	Organic Chemistry 2

Biological Science Units - Campbelltown Campus

Choose two of

300757.1	Molecular Biology of the Immune System
300749.1	Medical Microbiology
300542.1	Biomolecular Science Project

Choose one of

300553.1	Molecules of Life: Synthesis and Reactivity
300505.1	Pharmacology

Year 4**Autumn session**

200086.2	Marketing Communications
200592.1	Marketing Research
200087.2	Strategic Marketing Management
200094.1	International Marketing

Spring session

200090.2	Marketing of Services
200088.1	Brand and Product Management
200091.2	Business to Business Marketing
200096.2	Marketing Planning Project

**Bachelor of Science (Biological Science)/
Bachelor of Business and Commerce (Sport
Management)****Campelltown campus only****Year 1****Autumn session**

200336.2	Business Academic Skills
200525.1	Principles of Economics
300554.1	Principles of Chemistry
300539.1	Biodiversity

Spring session

200083.1	Marketing Principles
200101.2	Accounting Information for Managers
300550.1	Medicinal Chemistry
300543.1	Cell Biology

Year 2**Autumn session**

200571.1	Management Dynamics
300300.1	Microbiology 1
300555.1	Proteins and Genes
300547.1	Human Genetics

Spring session

200184.2	Introduction to Business Law
300321.1	Microbiology 2
300548.1	Human Metabolism and Disease
300700.3	Statistical Decision Making

Year 3**Autumn session****200705.1** The World of Sport Management

One Level 3 elective

Choose two of

300556.1 Analytical Protein Science**300544.1** Cell Signalling**300549.1** Human Molecular Biology**Spring session**

Choose two of

300757.1 Molecular Biology of the Immune System**300749.1** Medical Microbiology**300542.1** Biomolecular Science Project

Choose one of

300553.1 Molecules of Life: Synthesis and Reactivity**300505.1** Pharmacology

One Level 3 elective

Year 4**Autumn session****200665.1** Strategic Communication in Sport**200273.3** Managing Service and Experience**200754.1** Sports Management - Planning and Development**200707.1** Service Industry Studies**Spring session****200664.1** Sport Management Internship**200742.1** Sport and Hospitality Event Management**200751.1** Sport Management Applied Project**400335.2** Contemporary Issues in Sport Management**Key Program - Bachelor of Science (Chemistry)/Bachelor of Business and Commerce****KP3007.1**

This double degree program equips its graduates with a qualification in science, combined with a good understanding of basic business issues, complemented by a high level of knowledge relevant to a specific business discipline as applied in a global environment. Graduates will have a solid grounding in a core science discipline such as Biological Science, Chemistry or Mathematics; alternatively, students can design their own academic program within the Bachelor of Science course structure, including a science Major. This qualification in science is combined with one of the following key programs from the Bachelor of Business and Commerce: Applied Finance; Global Operations and Supply Chain Management; Hospitality Management; Human Resource Development and Organisational Development; Human Resource Management and

Industrial Relations; International Business; Management; Marketing; Sport Management. Graduates will be equipped to work as scientists, with a good understanding of business principles and practices. Alternatively, as Business and Commerce graduates they will be well-prepared to work in science-based industries and institutions.

Offer

Campus	Mode
Campbelltown Campus	Internal
Parramatta Campus	Internal

Unit Set Structure**Bachelor of Science (Chemistry)/ Bachelor of Business and Commerce (Applied Finance)****Parramatta and Campbelltown campus****Year 1****Autumn session****200336.2** Business Academic Skills**200525.1** Principles of Economics

Choose one of

200191.3 Fundamentals of Mathematics**300672.1** Mathematics 1A**Chemistry unit - Parramatta campus****300224.2** Chemistry 1**Chemistry unit - Campbelltown campus****300554.1** Principles of Chemistry**Spring session****200083.1** Marketing Principles**200101.2** Accounting Information for Managers**Chemistry units - Parramatta campus****300225.2** Chemistry 2**200263.2** Biometry**Chemistry units - Campbelltown campus****300550.1** Medicinal Chemistry**300700.3** Statistical Decision Making**Year 2****Autumn session****200571.1** Management Dynamics**Chemistry units - Parramatta campus****300297.1** Analytical Chemistry 2**300301.1** Organic Chemistry 2

Choose one of

- 300219.3 Biochemistry 1
- 300611.2 Chemical Mineralogy
- 300300.1 Microbiology 1
- 300609.1 Plant Physiology
- 200033.3 Applied Statistics
- 200042.2 Introduction to Operations Research

Chemistry units - Campbelltown campus

- 300540.1 Biomolecular Dynamics
- 300545.1 Coordination Chemistry

Choose one of

- 300555.1 Proteins and Genes
- 300300.1 Microbiology 1
- 300547.1 Human Genetics
- 300413.1 Applied Instrumentation in Nanotechnology
- 200028.2 Advanced Calculus
- 200030.1 Differential Equations
- 200027.1 Linear Algebra

Spring session

- 200184.2 Introduction to Business Law

Chemistry units - Parramatta campus

- 300230.1 Inorganic Chemistry 2
- 300236.1 Physical Chemistry 2

Choose one of

- 300220.1 Biochemistry 2
- 300612.1 Geochemical Systems
- 300321.1 Microbiology 2
- 300608.1 Animal Physiology
- 200028.2 Advanced Calculus
- 200030.1 Differential Equations
- 200027.1 Linear Algebra

Chemistry units - Campbelltown campus

- 300297.1 Analytical Chemistry 2
- 300553.1 Molecules of Life: Synthesis and Reactivity

Choose one of

- 300548.1 Human Metabolism and Disease
- 300321.1 Microbiology 2
- 300590.1 Nanochemistry
- 200033.3 Applied Statistics
- 300606.1 Foundations of Statistical Modelling and Decision Making

Year 3

Autumn session

One Level 3 elective

Chemistry units - Parramatta campus

- 300298.1 Analytical Chemistry 3
- 300235.1 Organic Chemistry 3
- 300558.1 Physics 1

Chemistry units - Campbelltown campus

- 300537.1 Advanced Chemical Analysis
- 300546.1 Drug Design and Synthesis
- 300558.1 Physics 1

Spring session

- 200488.2 Corporate Financial Management

Chemistry units - Parramatta campus

- 300231.1 Inorganic Chemistry 3
- 300303.1 Physical Chemistry 3
- 300645.1 Science Research Project 2

Chemistry units - Campbelltown campus

- 300538.1 Advanced Inorganic Chemistry
- 300475.1 Molecular Pharmacokinetics
- 300542.1 Biomolecular Science Project

Year 4

Autumn session

- 200549.1 The Australian Macroeconomy
- 200048.1 Financial Institutions and Markets
- 200537.2 Economics and Finance Engagement Project

And one alternate unit

Spring session

- 200053.2 Economic Modelling
- 200057.2 Investment Management

And two alternate units

Alternate units:

- 200078.1 Portfolio Management
- 200055.3 International Finance
- 200077.1 The Superannuation Industry
- 200079.1 Derivatives
- 200518.1 Behavioural Finance
- 200059.1 Financial Economics

Bachelor of Science (Chemistry)/ Bachelor of Business and Commerce (Global Operations and Supply Chain Management)

Parramatta campus only

Year 1

Autumn session

- 200336.2 Business Academic Skills
- 200525.1 Principles of Economics
- 300224.2 Chemistry 1

Choose one of

- 200191.3 Fundamentals of Mathematics
- 300672.1 Mathematics 1A

Spring session

200083.1	Marketing Principles
200101.2	Accounting Information for Managers
300225.2	Chemistry 2
200263.2	Biometry

Year 2**Autumn session**

200571.1	Management Dynamics
300558.1	Physics 1
300297.1	Analytical Chemistry 2
300301.1	Organic Chemistry 2

Spring session

200184.2	Introduction to Business Law
300230.1	Inorganic Chemistry 2
300236.1	Physical Chemistry 2

Choose one of

300661.1	Integrated Science 1
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300559.1	Physics 2
300793.1	Biology B - Cellular Processes
300672.1	Mathematics 1A
300673.1	Mathematics 1B

Year 3**Autumn session**

300298.1	Analytical Chemistry 3
300235.1	Organic Chemistry 3

Choose one of

300219.3	Biochemistry 1
300611.2	Chemical Mineralogy
300300.1	Microbiology 1
300609.1	Plant Physiology
200033.3	Applied Statistics
200030.1	Differential Equations
200027.1	Linear Algebra

And one elective

Spring session

200677.2	Global Supply Chain Management
300231.1	Inorganic Chemistry 3
300303.1	Physical Chemistry 3
300645.1	Science Research Project 2

Year 4**Autumn session**

200528.1	Management of Projects
200588.1	Global Operations and Logistics Management
200667.1	Global Enterprise Resource Planning

200668.1	Technology Management for Competitiveness
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Spring session

200167.1	Quality Management
200585.1	Organisational Behaviour
200565.2	Operations and Logistics in Practice
200162.1	Business Report

Bachelor of Science (Chemistry)/ Bachelor of Business and Commerce (Hospitality Management)**Parramatta campus only****Year 1****Autumn session**

200336.2	Business Academic Skills
200525.1	Principles of Economics
300224.2	Chemistry 1

Choose one of

200191.3	Fundamentals of Mathematics
300672.1	Mathematics 1A

Spring session

200083.1	Marketing Principles
200101.2	Accounting Information for Managers
300225.2	Chemistry 2
200263.2	Biometry

Year 2**Autumn session**

200571.1	Management Dynamics
300558.1	Physics 1
300297.1	Analytical Chemistry 2
300301.1	Organic Chemistry 2

Spring session

200184.2	Introduction to Business Law
300230.1	Inorganic Chemistry 2
300236.1	Physical Chemistry 2

Choose one of

300661.1	Integrated Science 1
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300559.1	Physics 2
300793.1	Biology B - Cellular Processes
300672.1	Mathematics 1A
300673.1	Mathematics 1B

Year 3**Autumn session**

300298.1	Analytical Chemistry 3
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300235.1 Organic Chemistry 3
200273.3 Managing Service and Experience

Choose one of

300219.3 Biochemistry 1
300611.2 Chemical Mineralogy
300300.1 Microbiology 1
300609.1 Plant Physiology
200033.3 Applied Statistics
200030.1 Differential Equations
200027.1 Linear Algebra

Spring session

300231.1 Inorganic Chemistry 3
300303.1 Physical Chemistry 3
300645.1 Science Research Project 2

And one elective

Year 4

Autumn session

200709.1 Managing the Accommodation Experience
200710.1 Managing the Food and Beverage Experience
200708.1 Hospitality Industry
200707.1 Service Industry Studies

Spring session

200584.2 Hospitality Management Operations
200742.1 Sport and Hospitality Event Management
200148.1 Planning and Design of Hospitality Facilities
200561.2 Hospitality Management Applied Project

Bachelor of Science (Chemistry)/ Bachelor of Business and Commerce (Human Resource Development and Organisational Development)

Parramatta campus only

Year 1

Autumn session

200336.2 Business Academic Skills
200525.1 Principles of Economics
300224.2 Chemistry 1

Choose one of

200191.3 Fundamentals of Mathematics
300672.1 Mathematics 1A

Spring session

200083.1 Marketing Principles
200101.2 Accounting Information for Managers
300225.2 Chemistry 2
200263.2 Biometry

Year 2

Autumn session

200571.1 Management Dynamics
300558.1 Physics 1
300297.1 Analytical Chemistry 2
300301.1 Organic Chemistry 2

Spring session

200184.2 Introduction to Business Law
300230.1 Inorganic Chemistry 2
300236.1 Physical Chemistry 2

Choose one of

300661.1 Integrated Science 1
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals
300613.1 Introductory Geochemistry: Earth, Resources and Environments
300559.1 Physics 2
300793.1 Biology B - Cellular Processes
300672.1 Mathematics 1A
300673.1 Mathematics 1B

Year 3

Autumn session

300298.1 Analytical Chemistry 3
300235.1 Organic Chemistry 3

One Level 3 elective

Choose one of

300219.3 Biochemistry 1
300611.2 Chemical Mineralogy
300300.1 Microbiology 1
300609.1 Plant Physiology
200033.3 Applied Statistics
200030.1 Differential Equations
200027.1 Linear Algebra

Spring session

200300.1 Managing People at Work
300231.1 Inorganic Chemistry 3
300303.1 Physical Chemistry 3
300645.1 Science Research Project 2

Year 4

Autumn session

200610.1 Employee Training and Development
200243.2 Work Employment and the Labour Market
200570.2 Management of Change
200175.4 Managing Human Resources and Industrial Relations

Spring session

200376.1 Managing and Developing Careers
200157.2 Organisational Learning and Development
200159.2 Organisation Analysis and Design
200381.3 Human Resources Development Seminar

Bachelor of Science (Chemistry)/ Bachelor of Business and Commerce (Human Resource Management and Industrial Relations)

Parramatta and Campbelltown campus

Year 1**Autumn session**

- 200336.2** Business Academic Skills
200525.1 Principles of Economics

Choose one of

- 200191.3** Fundamentals of Mathematics
300672.1 Mathematics 1A

Chemistry unit - Parramatta campus

- 300224.2** Chemistry 1

Chemistry unit - Campbelltown campus

- 300554.1** Principles of Chemistry

Spring session

- 200083.1** Marketing Principles
200101.2 Accounting Information for Managers

Chemistry units - Parramatta campus

- 300225.2** Chemistry 2
200263.2 Biometry

Chemistry units - Campbelltown campus

- 300550.1** Medicinal Chemistry
300700.3 Statistical Decision Making

Year 2**Autumn session**

- 200571.1** Management Dynamics

Chemistry unit - Parramatta campus

- 300297.1** Analytical Chemistry 2
300301.1 Organic Chemistry 2

Choose one of

- 300219.3** Biochemistry 1
300611.2 Chemical Mineralogy
300300.1 Microbiology 1
300609.1 Plant Physiology
200033.3 Applied Statistics
200042.2 Introduction to Operations Research

Chemistry unit - Campbelltown campus

- 300540.1** Biomolecular Dynamics
300545.1 Coordination Chemistry

Choose one of

- 300555.1** Proteins and Genes
300300.1 Microbiology 1
300547.1 Human Genetics
300413.1 Applied Instrumentation in Nanotechnology
200028.2 Advanced Calculus
200030.1 Differential Equations
200027.1 Linear Algebra

Spring session

- 200184.2** Introduction to Business Law

Chemistry units - Parramatta campus

- 300230.1** Inorganic Chemistry 2
300236.1 Physical Chemistry 2

Choose one of

- 300220.1** Biochemistry 2
300612.1 Geochemical Systems
300321.1 Microbiology 2
300608.1 Animal Physiology
200028.2 Advanced Calculus
200030.1 Differential Equations
200027.1 Linear Algebra

Chemistry units - Campbelltown campus

- 300297.1** Analytical Chemistry 2
300553.1 Molecules of Life: Synthesis and Reactivity

Choose one of

- 300548.1** Human Metabolism and Disease
300321.1 Microbiology 2
300590.1 Nanochemistry
200033.3 Applied Statistics
300606.1 Foundations of Statistical Modelling and Decision Making

Year 3**Autumn session**

One Level 3 elective

Chemistry units - Parramatta campus

- 300298.1** Analytical Chemistry 3
300235.1 Organic Chemistry 3
300558.1 Physics 1

Chemistry units - Campbelltown campus

- 300537.1** Advanced Chemical Analysis
300546.1 Drug Design and Synthesis
300558.1 Physics 1

Spring session

- 200300.1** Managing People at Work

Chemistry units - Parramatta campus

- 300231.1** Inorganic Chemistry 3
300303.1 Physical Chemistry 3
300645.1 Science Research Project 2

Chemistry units - Campbelltown campus

300538.1	Advanced Inorganic Chemistry
300475.1	Molecular Pharmacokinetics
300542.1	Biomolecular Science Project

Year 4**Autumn session**

200614.1	Enterprise Industrial Relations
200621.2	International Human Resource Management
200616.2	Workplace Behaviour
200613.1	Negotiation, Bargaining and Advocacy

Spring session

200739.1	Reward and Performance Management
200740.1	Human Resource and Industrial Relations Strategy
200575.2	Processes and Evaluation in Employment Relations

Choose one of

200610.1	Employee Training and Development
200150.1	Managing Diversity
200753.1	Occupational Health and Safety

Bachelor of Science (Chemistry)/ Bachelor of Business and Commerce (International Business)**Parramatta campus only****Year 1****Autumn session**

200336.2	Business Academic Skills
200525.1	Principles of Economics
300224.2	Chemistry 1

Choose one of

200191.3	Fundamentals of Mathematics
300672.1	Mathematics 1A

Spring session

200083.1	Marketing Principles
200101.2	Accounting Information for Managers
300225.2	Chemistry 2
200263.2	Biometry

Year 2**Autumn session**

200571.1	Management Dynamics
300558.1	Physics 1
300297.1	Analytical Chemistry 2
300301.1	Organic Chemistry 2

Spring session

200184.2	Introduction to Business Law
300230.1	Inorganic Chemistry 2

300236.1 Physical Chemistry 2

Choose one of

300661.1	Integrated Science 1
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300559.1	Physics 2
300793.1	Biology B - Cellular Processes
300672.1	Mathematics 1A
300673.1	Mathematics 1B

Year 3**Autumn session**

300298.1	Analytical Chemistry 3
300235.1	Organic Chemistry 3

Choose one of

300219.3	Biochemistry 1
300611.2	Chemical Mineralogy
300300.1	Microbiology 1
300609.1	Plant Physiology
200033.3	Applied Statistics
200030.1	Differential Equations
200027.1	Linear Algebra

And one elective

Spring session

200677.2	Global Supply Chain Management
300231.1	Inorganic Chemistry 3
300303.1	Physical Chemistry 3
300645.1	Science Research Project 2

Year 4**Autumn session**

200541.1	Globalisation and Trade
200094.1	International Marketing
200626.1	International Business Strategy
200595.2	International Business Finance

Spring session

200590.1	International Business Project
200374.2	International Marketing Research
200589.1	Export Strategy and Applications

Choose one of

200098.1	The Markets of Asia
200099.2	The Markets of Europe

Bachelor of Science (Chemistry)/ Bachelor of Business and Commerce (Management)**Parramatta and Campbelltown campus****Year 1****Autumn session**

200336.2	Business Academic Skills
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200525.1 Principles of Economics

Choose one of

200191.3 Fundamentals of Mathematics
300672.1 Mathematics 1A

Chemistry unit - Parramatta campus

300224.2 Chemistry 1

Chemistry unit - Campbelltown campus

300554.1 Principles of Chemistry

Spring session

200083.1 Marketing Principles
200101.2 Accounting Information for Managers

Chemistry units - Parramatta campus

300225.2 Chemistry 2
200263.2 Biometry

Chemistry units - Campbelltown campus

300550.1 Medicinal Chemistry
300700.3 Statistical Decision Making

Year 2

Autumn session

200571.1 Management Dynamics

Chemistry unit - Parramatta campus

300297.1 Analytical Chemistry 2
300301.1 Organic Chemistry 2

Choose one of

300219.3 Biochemistry 1
300611.2 Chemical Mineralogy
300300.1 Microbiology 1
300609.1 Plant Physiology
200033.3 Applied Statistics
200042.2 Introduction to Operations Research

Chemistry unit - Campbelltown campus

300540.1 Biomolecular Dynamics
300545.1 Coordination Chemistry

Choose one of

300555.1 Proteins and Genes
300300.1 Microbiology 1
300547.1 Human Genetics
300413.1 Applied Instrumentation in Nanotechnology
200028.2 Advanced Calculus
200030.1 Differential Equations
200027.1 Linear Algebra

Spring session

200184.2 Introduction to Business Law

Chemistry units - Parramatta campus

300230.1 Inorganic Chemistry 2
300236.1 Physical Chemistry 2

Choose one of

300220.1 Biochemistry 2
300612.1 Geochemical Systems
300321.1 Microbiology 2
300608.1 Animal Physiology
200028.2 Advanced Calculus
200030.1 Differential Equations
200027.1 Linear Algebra

Chemistry units - Campbelltown campus

300297.1 Analytical Chemistry 2
300553.1 Molecules of Life: Synthesis and Reactivity

Choose one of

300548.1 Human Metabolism and Disease
300321.1 Microbiology 2
300590.1 Nanochemistry
200033.3 Applied Statistics
300606.1 Foundations of Statistical Modelling and Decision Making

Year 3

Autumn session

One Level 3 elective

Chemistry units - Parramatta campus

300298.1 Analytical Chemistry 3
300235.1 Organic Chemistry 3
300558.1 Physics 1

Chemistry units - Campbelltown campus

300537.1 Advanced Chemical Analysis
300546.1 Drug Design and Synthesis
300558.1 Physics 1

Spring session

200585.1 Organisational Behaviour

Chemistry units - Parramatta campus

300231.1 Inorganic Chemistry 3
300303.1 Physical Chemistry 3
300645.1 Science Research Project 2

Chemistry units - Campbelltown campus

300538.1 Advanced Inorganic Chemistry
300475.1 Molecular Pharmacokinetics
300542.1 Biomolecular Science Project

Year 4

Autumn session

200158.2 Business, Society and Policy
200586.1 Cross Cultural Management

200570.2 Management of Change
200752.1 Power, Politics and Knowledge

Spring session

200588.1 Global Operations and Logistics Management
200159.2 Organisation Analysis and Design
200568.2 Contemporary Management Issues
200587.1 Strategic Management

Bachelor of Science (Chemistry)/ Bachelor of Business and Commerce (Marketing)**Parramatta and Campbelltown campus****Year 1****Autumn session**

200336.2 Business Academic Skills
200525.1 Principles of Economics

Choose one of

200191.3 Fundamentals of Mathematics
300672.1 Mathematics 1A

Chemistry unit - Parramatta campus

300224.2 Chemistry 1

Chemistry unit - Campbelltown campus

300554.1 Principles of Chemistry

Spring session

200083.1 Marketing Principles
200101.2 Accounting Information for Managers

Chemistry units - Parramatta campus

300225.2 Chemistry 2
200263.2 Biometry

Chemistry units - Campbelltown campus

300550.1 Medicinal Chemistry
300700.3 Statistical Decision Making

Year 2**Autumn session**

200571.1 Management Dynamics

Chemistry unit - Parramatta campus

300297.1 Analytical Chemistry 2
300301.1 Organic Chemistry 2

Choose one of

300219.3 Biochemistry 1
300611.2 Chemical Mineralogy
300300.1 Microbiology 1
300609.1 Plant Physiology

200033.3 Applied Statistics
200042.2 Introduction to Operations Research

Chemistry unit - Campbelltown campus

300540.1 Biomolecular Dynamics
300545.1 Coordination Chemistry

Choose one of

300555.1 Proteins and Genes
300300.1 Microbiology 1
300547.1 Human Genetics
300413.1 Applied Instrumentation in Nanotechnology
200028.2 Advanced Calculus
200030.1 Differential Equations
200027.1 Linear Algebra

Spring session

200184.2 Introduction to Business Law

Chemistry units - Parramatta campus

300230.1 Inorganic Chemistry 2
300236.1 Physical Chemistry 2

Choose one of

300220.1 Biochemistry 2
300612.1 Geochemical Systems
300321.1 Microbiology 2
300608.1 Animal Physiology
200028.2 Advanced Calculus
200030.1 Differential Equations
200027.1 Linear Algebra

Chemistry units - Campbelltown campus

300297.1 Analytical Chemistry 2
300553.1 Molecules of Life: Synthesis and Reactivity

Choose one of

300548.1 Human Metabolism and Disease
300321.1 Microbiology 2
300590.1 Nanochemistry
200033.3 Applied Statistics
300606.1 Foundations of Statistical Modelling and Decision Making

Year 3**Autumn session**

One Level 3 elective

Chemistry units - Parramatta campus

300298.1 Analytical Chemistry 3
300235.1 Organic Chemistry 3
300558.1 Physics 1

Chemistry units - Campbelltown campus

300537.1 Advanced Chemical Analysis
300546.1 Drug Design and Synthesis
300558.1 Physics 1

Spring session

200084.1 Consumer Behaviour

Chemistry units - Parramatta campus

300231.1 Inorganic Chemistry 3
300303.1 Physical Chemistry 3
300645.1 Science Research Project 2

Chemistry units - Campbelltown campus

300538.1 Advanced Inorganic Chemistry
300475.1 Molecular Pharmacokinetics
300542.1 Biomolecular Science Project

Year 4**Autumn session**

200086.2 Marketing Communications
200592.1 Marketing Research
200087.2 Strategic Marketing Management
200094.1 International Marketing

Spring session

200090.2 Marketing of Services
200088.1 Brand and Product Management
200091.2 Business to Business Marketing
200096.2 Marketing Planning Project

Bachelor of Science (Chemistry)/ Bachelor of Business and Commerce (Sport Management)**Campelltown campus only****Year 1****Autumn session**

200336.2 Business Academic Skills
200525.1 Principles of Economics
300554.1 Principles of Chemistry

Choose one of:

200191.3 Fundamentals of Mathematics
300672.1 Mathematics 1A

Spring session

200083.1 Marketing Principles
200101.2 Accounting Information for Managers
300550.1 Medicinal Chemistry
300700.3 Statistical Decision Making

Year 2**Autumn session**

200571.1 Management Dynamics
300540.1 Biomolecular Dynamics
300545.1 Coordination Chemistry

Choose one of

300555.1 Proteins and Genes

300300.1 Microbiology 1
300547.1 Human Genetics
300413.1 Applied Instrumentation in Nanotechnology
200028.2 Advanced Calculus
200030.1 Differential Equations
200027.1 Linear Algebra

Spring session

200184.2 Introduction to Business Law
300297.1 Analytical Chemistry 2
300553.1 Molecules of Life: Synthesis and Reactivity

Choose one of

300548.1 Human Metabolism and Disease
300321.1 Microbiology 2
300590.1 Nanochemistry
200033.3 Applied Statistics
300606.1 Foundations of Statistical Modelling and Decision Making

Year 3**Autumn session**

200705.1 The World of Sport Management
300537.1 Advanced Chemical Analysis
300546.1 Drug Design and Synthesis

One Level 3 elective

Spring session

300538.1 Advanced Inorganic Chemistry
300475.1 Molecular Pharmacokinetics
300542.1 Biomolecular Science Project

And one elective

Year 4**Autumn session**

200665.1 Strategic Communication in Sport
200273.3 Managing Service and Experience
200754.1 Sports Management - Planning and Development
200707.1 Service Industry Studies

Spring session

200664.1 Sport Management Internship
200742.1 Sport and Hospitality Event Management
200751.1 Sport Management Applied Project
400335.2 Contemporary Issues in Sport Management

Key Program - Bachelor of Science (Mathematical Science)/Bachelor of Business and Commerce**KP3008.1**

This double degree program equips its graduates with a qualification in science, combined with a good understanding of basic business issues, complemented by

a high level of knowledge relevant to a specific business discipline as applied in a global environment. Graduates will have a solid grounding in a core science discipline such as Biological Science, Chemistry or Mathematics; alternatively, students can design their own academic program within the Bachelor of Science course structure, including a science Major. This qualification in science is combined with one of the following key programs from the Bachelor of Business and Commerce: Applied Finance; Global Operations and Supply Chain Management; Hospitality Management; Human Resource Development and Organisational Development; Human Resource Management and Industrial Relations; International Business; Management; Marketing; Sport Management. Graduates will be equipped to work as scientists, with a good understanding of business principles and practices. Alternatively, as Business and Commerce graduates they will be well-prepared to work in science-based industries and institutions.

Offer

Campus	Mode
Campbelltown Campus	Internal
Parramatta Campus	Internal

Unit Set Structure

Bachelor of Science (Mathematical Science)/ Bachelor of Business and Commerce (Applied Finance)

Parramatta and Campbelltown campus

Units may be offered in different semesters at different campuses.

Year 1

200336.2	Business Academic Skills
200525.1	Principles of Economics
200083.1	Marketing Principles
200101.2	Accounting Information for Managers
300672.1	Mathematics 1A
300673.1	Mathematics 1B
200025.1	Discrete Mathematics

Choose one of

300700.3	Statistical Decision Making
200263.2	Biometry

Year 2

200571.1	Management Dynamics
200184.2	Introduction to Business Law
300580.1	Programming Fundamentals
200028.2	Advanced Calculus
200027.1	Linear Algebra

Choose one of

200042.2	Introduction to Operations Research
300606.1	Foundations of Statistical Modelling and Decision Making

Choose one of

200033.3	Applied Statistics
200030.1	Differential Equations
300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200029.1	Numerical Analysis

Parramatta campus

Choose one of

300224.2	Chemistry 1
300558.1	Physics 1
300232.1	Introduction to Earth Sciences
300792.1	Biology A - The Diversity of Life
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300559.1	Physics 2
300793.1	Biology B - Cellular Processes

Campbelltown campus

Choose one of

300554.1	Principles of Chemistry
300558.1	Physics 1
300539.1	Biodiversity
300543.1	Cell Biology
300559.1	Physics 2

Year 3

200488.2	Corporate Financial Management
200045.2	Quantitative Project

Choose two of

200033.3	Applied Statistics
200030.1	Differential Equations
300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200029.1	Numerical Analysis

Choose four of

200193.1	Abstract Algebra
200023.2	Analysis
200036.2	Data Mining and Visualisation
200024.1	Mathematical Finance
200022.2	Mathematical Modelling
300670.1	Optimisation Techniques
300671.1	Principles and Practice of Decision Making
200040.1	Probability & Stochastic Processes
200037.2	Regression Analysis & Experimental Design
200044.1	Simulation Techniques
200039.1	Surveys and Multivariate Analysis
200038.2	Time Series and Forecasting

Year 4

Autumn session

200549.1	The Australian Macroeconomy
200048.1	Financial Institutions and Markets
200537.2	Economics and Finance Engagement Project

And one alternate unit

Spring session

200053.2	Economic Modelling
200057.2	Investment Management

And two alternate units

Alternate units

200078.1	Portfolio Management
200055.3	International Finance
200077.1	The Superannuation Industry
200079.1	Derivatives
200518.1	Behavioural Finance
200059.1	Financial Economics

Bachelor of Science (Mathematical Science)/ Bachelor of Business and Commerce (Global Operations and Supply Chain Management)

Parramatta campus only

Units may be offered in different semesters at different campuses.

Year 1

200336.2	Business Academic Skills
200525.1	Principles of Economics
200083.1	Marketing Principles
200101.2	Accounting Information for Managers
300672.1	Mathematics 1A
300673.1	Mathematics 1B
200025.1	Discrete Mathematics

Choose one of

300700.3	Statistical Decision Making
200263.2	Biometry

Year 2

200571.1	Management Dynamics
200184.2	Introduction to Business Law
300580.1	Programming Fundamentals
200028.2	Advanced Calculus
200027.1	Linear Algebra

Choose one of

300224.2	Chemistry 1
300558.1	Physics 1
300232.1	Introduction to Earth Sciences
300792.1	Biology A - The Diversity of Life
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300559.1	Physics 2
300793.1	Biology B - Cellular Processes

Choose one of

200042.2	Introduction to Operations Research
300606.1	Foundations of Statistical Modelling and Decision Making

Choose one of

200033.3	Applied Statistics
200030.1	Differential Equations

300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200029.1	Numerical Analysis

Year 3

200677.2	Global Supply Chain Management
200045.2	Quantitative Project

Choose two of

200033.3	Applied Statistics
200030.1	Differential Equations
300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200029.1	Numerical Analysis

Choose four of

200193.1	Abstract Algebra
200023.2	Analysis
200036.2	Data Mining and Visualisation
200024.1	Mathematical Finance
200022.2	Mathematical Modelling
300670.1	Optimisation Techniques
300671.1	Principles and Practice of Decision Making
200040.1	Probability & Stochastic Processes
200037.2	Regression Analysis & Experimental Design
200044.1	Simulation Techniques
200039.1	Surveys and Multivariate Analysis
200038.2	Time Series and Forecasting

Year 4**Autumn session**

200528.1	Management of Projects
200588.1	Global Operations and Logistics Management
200667.1	Global Enterprise Resource Planning
200668.1	Technology Management for Competitiveness

Spring session

200167.1	Quality Management
200585.1	Organisational Behaviour
200565.2	Operations and Logistics in Practice
200162.1	Business Report

Bachelor of Science (Mathematical Science)/ Bachelor of Business and Commerce (Hospitality Management)

Parramatta campus only

Units may be offered in different semesters at different campuses.

Year 1

200336.2	Business Academic Skills
200525.1	Principles of Economics
200083.1	Marketing Principles
200101.2	Accounting Information for Managers
300672.1	Mathematics 1A
300673.1	Mathematics 1B

200025.1 Discrete Mathematics

Choose one of

- 300700.3** Statistical Decision Making
200263.2 Biometry

Year 2

- 200571.1** Management Dynamics
200184.2 Introduction to Business Law
300580.1 Programming Fundamentals
200028.2 Advanced Calculus
200027.1 Linear Algebra

Choose one of

- 300224.2** Chemistry 1
300558.1 Physics 1
300232.1 Introduction to Earth Sciences
300792.1 Biology A - The Diversity of Life
300613.1 Introductory Geochemistry: Earth, Resources and Environments
300559.1 Physics 2
300793.1 Biology B - Cellular Processes

Choose one of

- 200042.2** Introduction to Operations Research
300606.1 Foundations of Statistical Modelling and Decision Making

Choose one of

- 200033.3** Applied Statistics
200030.1 Differential Equations
300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research
200029.1 Numerical Analysis

Year 3

- 200273.3** Managing Service and Experience
200045.2 Quantitative Project

Choose two of

- 200033.3** Applied Statistics
200030.1 Differential Equations
300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research
200029.1 Numerical Analysis

Choose four of

- 200193.1** Abstract Algebra
200023.2 Analysis
200036.2 Data Mining and Visualisation
200024.1 Mathematical Finance
200022.2 Mathematical Modelling
300670.1 Optimisation Techniques
300671.1 Principles and Practice of Decision Making
200040.1 Probability & Stochastic Processes
200037.2 Regression Analysis & Experimental Design
200044.1 Simulation Techniques
200039.1 Surveys and Multivariate Analysis
200038.2 Time Series and Forecasting

Year 4**Autumn session**

- 200709.1** Managing the Accommodation Experience
200710.1 Managing the Food and Beverage Experience
200708.1 Hospitality Industry
200707.1 Service Industry Studies

Spring session

- 200584.2** Hospitality Management Operations
200742.1 Sport and Hospitality Event Management
200148.1 Planning and Design of Hospitality Facilities
200561.2 Hospitality Management Applied Project

**Bachelor of Science (Mathematical Science)/
 Bachelor of Business and Commerce
 (Human Resource Development and
 Organisational Development)**

Parramatta campus only

Units may be offered in different semesters at different campuses.

Year 1

- 200336.2** Business Academic Skills
200525.1 Principles of Economics
200083.1 Marketing Principles
200101.2 Accounting Information for Managers
300672.1 Mathematics 1A
300673.1 Mathematics 1B
200025.1 Discrete Mathematics

Choose one of

- 300700.3** Statistical Decision Making
200263.2 Biometry

Year 2

- 200571.1** Management Dynamics
200184.2 Introduction to Business Law
300580.1 Programming Fundamentals
200028.2 Advanced Calculus
200027.1 Linear Algebra

Choose one of

- 300224.2** Chemistry 1
300558.1 Physics 1
300232.1 Introduction to Earth Sciences
300792.1 Biology A - The Diversity of Life
300613.1 Introductory Geochemistry: Earth, Resources and Environments
300559.1 Physics 2
300793.1 Biology B - Cellular Processes

Choose one of

- 200033.3** Applied Statistics
200030.1 Differential Equations
300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research
200029.1 Numerical Analysis

Year 3

- 200300.1** Managing People at Work
200045.2 Quantitative Project

Choose two of

- 200033.3** Applied Statistics
200030.1 Differential Equations
300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research
200029.1 Numerical Analysis

Choose four of

- 200193.1** Abstract Algebra
200023.2 Analysis
200036.2 Data Mining and Visualisation
200024.1 Mathematical Finance
200022.2 Mathematical Modelling
300670.1 Optimisation Techniques
300671.1 Principles and Practice of Decision Making
200040.1 Probability & Stochastic Processes
200037.2 Regression Analysis & Experimental Design
200044.1 Simulation Techniques
200039.1 Surveys and Multivariate Analysis
200038.2 Time Series and Forecasting

Year 4**Autumn session**

- 200610.1** Employee Training and Development
200243.2 Work Employment and the Labour Market
200570.2 Management of Change
200175.4 Managing Human Resources and Industrial Relations

Spring session

- 200376.1** Managing and Developing Careers
200157.2 Organisational Learning and Development
200159.2 Organisation Analysis and Design
200381.3 Human Resources Development Seminar

**Bachelor of Science (Mathematical Science)/
 Bachelor of Business and Commerce
 (Human Resource Management and
 Industrial Relations)**

Parramatta and Campbelltown campus

Units may be offered in different semesters at different campuses.

Year 1

- 200336.2** Business Academic Skills
200525.1 Principles of Economics
200083.1 Marketing Principles
200101.2 Accounting Information for Managers
300672.1 Mathematics 1A
300673.1 Mathematics 1B
200025.1 Discrete Mathematics

Choose one of

- 300700.3** Statistical Decision Making
200263.2 Biometry

Year 2

- 200571.1** Management Dynamics
200184.2 Introduction to Business Law
300580.1 Programming Fundamentals
200028.2 Advanced Calculus
200027.1 Linear Algebra

Choose one of

- 200042.2** Introduction to Operations Research
300606.1 Foundations of Statistical Modelling and Decision Making

Choose one of

- 200033.3** Applied Statistics
200030.1 Differential Equations
300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research
200029.1 Numerical Analysis

Parramatta campus

Choose one of

- 300224.2** Chemistry 1
300558.1 Physics 1
300232.1 Introduction to Earth Sciences
300792.1 Biology A - The Diversity of Life
300613.1 Introductory Geochemistry: Earth, Resources and Environments
300559.1 Physics 2
300793.1 Biology B - Cellular Processes

Campbelltown campus

Choose one of

- 300554.1** Principles of Chemistry
300558.1 Physics 1
300539.1 Biodiversity
300543.1 Cell Biology
300559.1 Physics 2

Year 3

- 200300.1** Managing People at Work
200045.2 Quantitative Project

Choose two of

- 200033.3** Applied Statistics
200030.1 Differential Equations
300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research
200029.1 Numerical Analysis

Choose four of

- 200193.1** Abstract Algebra
200023.2 Analysis
200036.2 Data Mining and Visualisation
200024.1 Mathematical Finance
200022.2 Mathematical Modelling
300670.1 Optimisation Techniques

300671.1 Principles and Practice of Decision Making
200040.1 Probability & Stochastic Processes
200037.2 Regression Analysis & Experimental Design
200044.1 Simulation Techniques
200039.1 Surveys and Multivariate Analysis
200038.2 Time Series and Forecasting

Year 4**Autumn session**

200614.1 Enterprise Industrial Relations
200621.2 International Human Resource Management
200616.2 Workplace Behaviour
200613.1 Negotiation, Bargaining and Advocacy

Spring session

200739.1 Reward and Performance Management
200740.1 Human Resource and Industrial Relations Strategy
200575.2 Processes and Evaluation in Employment Relations

Choose one of

200610.1 Employee Training and Development
200150.1 Managing Diversity
200753.1 Occupational Health and Safety

**Bachelor of Science (Mathematical Science)/
 Bachelor of Business and Commerce
 (International Business)**

Parramatta campus only

Units may be offered in different semesters at different campuses.

Year 1

200336.2 Business Academic Skills
200525.1 Principles of Economics
200083.1 Marketing Principles
200101.2 Accounting Information for Managers
300672.1 Mathematics 1A
300673.1 Mathematics 1B
200025.1 Discrete Mathematics

Choose one of

300700.3 Statistical Decision Making
200263.2 Biometry

Year 2

200571.1 Management Dynamics
200184.2 Introduction to Business Law
300580.1 Programming Fundamentals
200028.2 Advanced Calculus
200027.1 Linear Algebra

Choose one of

300224.2 Chemistry 1
300558.1 Physics 1
300232.1 Introduction to Earth Sciences
300792.1 Biology A - The Diversity of Life

300613.1 Introductory Geochemistry: Earth, Resources and Environments
300559.1 Physics 2
300793.1 Biology B - Cellular Processes

Choose one of

200042.2 Introduction to Operations Research
300606.1 Foundations of Statistical Modelling and Decision Making

Choose one of

200033.3 Applied Statistics
200030.1 Differential Equations
300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research
200029.1 Numerical Analysis

Year 3

200591.1 Introduction to International Business
200045.2 Quantitative Project

Choose two of

200033.3 Applied Statistics
200030.1 Differential Equations
300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research
200029.1 Numerical Analysis

Choose four of

200193.1 Abstract Algebra
200023.2 Analysis
200036.2 Data Mining and Visualisation
200024.1 Mathematical Finance
200022.2 Mathematical Modelling
300670.1 Optimisation Techniques
300671.1 Principles and Practice of Decision Making
200040.1 Probability & Stochastic Processes
200037.2 Regression Analysis & Experimental Design
200044.1 Simulation Techniques
200039.1 Surveys and Multivariate Analysis
200038.2 Time Series and Forecasting

Year 4**Autumn session**

200541.1 Globalisation and Trade
200094.1 International Marketing
200626.1 International Business Strategy
200595.2 International Business Finance

Spring session

200590.1 International Business Project
200374.2 International Marketing Research
200589.1 Export Strategy and Applications

Choose one of

200098.1 The Markets of Asia
200099.2 The Markets of Europe

Bachelor of Science (Mathematical Science)/ Bachelor of Business and Commerce (Management)

Parramatta and Campbelltown campus

Units may be offered in different semesters at different campuses.

Year 1

200336.2	Business Academic Skills
200525.1	Principles of Economics
200083.1	Marketing Principles
200101.2	Accounting Information for Managers
300672.1	Mathematics 1A
300673.1	Mathematics 1B
200025.1	Discrete Mathematics

Choose one of

300700.3	Statistical Decision Making
200263.2	Biometry

Year 2

200571.1	Management Dynamics
200184.2	Introduction to Business Law
300580.1	Programming Fundamentals
200028.2	Advanced Calculus
200027.1	Linear Algebra

Choose one of

200042.2	Introduction to Operations Research
300606.1	Foundations of Statistical Modelling and Decision Making

Choose one of

200033.3	Applied Statistics
200030.1	Differential Equations
300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200029.1	Numerical Analysis

Parramatta campus

Choose one of

300224.2	Chemistry 1
300558.1	Physics 1
300232.1	Introduction to Earth Sciences
300792.1	Biology A - The Diversity of Life
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300559.1	Physics 2
300793.1	Biology B - Cellular Processes

Campbelltown campus

Choose one of

300554.1	Principles of Chemistry
300558.1	Physics 1
300539.1	Biodiversity
300543.1	Cell Biology
300559.1	Physics 2

Year 3

200585.1	Organisational Behaviour
200045.2	Quantitative Project

Choose two of

200033.3	Applied Statistics
200030.1	Differential Equations
300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200029.1	Numerical Analysis

Choose four of

200193.1	Abstract Algebra
200023.2	Analysis
200036.2	Data Mining and Visualisation
200024.1	Mathematical Finance
200022.2	Mathematical Modelling
300670.1	Optimisation Techniques
300671.1	Principles and Practice of Decision Making
200040.1	Probability & Stochastic Processes
200037.2	Regression Analysis & Experimental Design
200044.1	Simulation Techniques
200039.1	Surveys and Multivariate Analysis
200038.2	Time Series and Forecasting

Year 4

Autumn session

200158.2	Business, Society and Policy
200586.1	Cross Cultural Management
200570.2	Management of Change
200752.1	Power, Politics and Knowledge

Spring session

200588.1	Global Operations and Logistics Management
200159.2	Organisation Analysis and Design
200568.2	Contemporary Management Issues
200587.1	Strategic Management

Bachelor of Science (Mathematical Science)/ Bachelor of Business and Commerce (Marketing)

Parramatta and Campbelltown campus

Units may be offered in different semesters at different campuses.

Year 1

200336.2	Business Academic Skills
200525.1	Principles of Economics
200083.1	Marketing Principles
200101.2	Accounting Information for Managers
300672.1	Mathematics 1A
300673.1	Mathematics 1B
200025.1	Discrete Mathematics

Choose one of

300700.3	Statistical Decision Making
200263.2	Biometry

Year 2

200571.1	Management Dynamics
200184.2	Introduction to Business Law
300580.1	Programming Fundamentals
200028.2	Advanced Calculus
200027.1	Linear Algebra

Choose one of

200042.2	Introduction to Operations Research
300606.1	Foundations of Statistical Modelling and Decision Making

Choose one of

200033.3	Applied Statistics
200030.1	Differential Equations
300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200029.1	Numerical Analysis

Parramatta campus

Choose one of

300224.2	Chemistry 1
300558.1	Physics 1
300232.1	Introduction to Earth Sciences
300792.1	Biology A - The Diversity of Life
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300559.1	Physics 2
300793.1	Biology B - Cellular Processes

Campbelltown campus

Choose one of

300554.1	Principles of Chemistry
300558.1	Physics 1
300539.1	Biodiversity
300543.1	Cell Biology
300559.1	Physics 2

Year 3

200084.1	Consumer Behaviour
200045.2	Quantitative Project

Choose two of

200033.3	Applied Statistics
200030.1	Differential Equations
300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200029.1	Numerical Analysis

Choose four of

200193.1	Abstract Algebra
200023.2	Analysis
200036.2	Data Mining and Visualisation
200024.1	Mathematical Finance
200022.2	Mathematical Modelling
300670.1	Optimisation Techniques
300671.1	Principles and Practice of Decision Making
200040.1	Probability & Stochastic Processes

200037.2	Regression Analysis & Experimental Design
200044.1	Simulation Techniques
200039.1	Surveys and Multivariate Analysis
200038.2	Time Series and Forecasting

Year 4**Autumn session**

200086.2	Marketing Communications
200592.1	Marketing Research
200087.2	Strategic Marketing Management
200094.1	International Marketing

Spring session

200090.2	Marketing of Services
200088.1	Brand and Product Management
200091.2	Business to Business Marketing
200096.2	Marketing Planning Project

**Bachelor of Science (Mathematical Science)/
Bachelor of Business and Commerce (Sport Management)****Campbelltown campus only**

Units may be offered in different semesters at different campuses.

Year 1

200336.2	Business Academic Skills
200525.1	Principles of Economics
200083.1	Marketing Principles
200101.2	Accounting Information for Managers
300672.1	Mathematics 1A
300673.1	Mathematics 1B
200025.1	Discrete Mathematics

Choose one of

300700.3	Statistical Decision Making
200263.2	Biometry

Year 2

200571.1	Management Dynamics
200184.2	Introduction to Business Law
300580.1	Programming Fundamentals
200028.2	Advanced Calculus
200027.1	Linear Algebra

Choose one of

300554.1	Principles of Chemistry
300558.1	Physics 1
300539.1	Biodiversity
300543.1	Cell Biology
300559.1	Physics 2

Choose one of

200042.2	Introduction to Operations Research
300606.1	Foundations of Statistical Modelling and Decision Making

Choose one of

200033.3	Applied Statistics
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- 200030.1** Differential Equations
300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research
200029.1 Numerical Analysis

Year 3

- 200705.1** The World of Sport Management
200045.2 Quantitative Project

Choose two of

- 200033.3** Applied Statistics
200030.1 Differential Equations
300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research
200029.1 Numerical Analysis

Choose four of

- 200193.1** Abstract Algebra
200023.2 Analysis
200036.2 Data Mining and Visualisation
200024.1 Mathematical Finance
200022.2 Mathematical Modelling
300670.1 Optimisation Techniques
300671.1 Principles and Practice of Decision Making
200040.1 Probability & Stochastic Processes
200037.2 Regression Analysis & Experimental Design
200044.1 Simulation Techniques
200039.1 Surveys and Multivariate Analysis
200038.2 Time Series and Forecasting

Year 4**Autumn session**

- 200665.1** Strategic Communication in Sport
200273.3 Managing Service and Experience
200754.1 Sports Management - Planning and Development
200707.1 Service Industry Studies

Spring session

- 200664.1** Sport Management Internship
200742.1 Sport and Hospitality Event Management
200751.1 Sport Management Applied Project
400335.2 Contemporary Issues in Sport Management

Key Program - Bachelor of Science (No Key Program)/Bachelor of Business and Commerce

KP3009.1

This double degree program equips its graduates with a qualification in science, combined with a good understanding of basic business issues, complemented by a high level of knowledge relevant to a specific business discipline as applied in a global environment. Graduates will have a solid grounding in a core science discipline such as Biological Science, Chemistry or Mathematics; alternatively,

students can design their own academic program within the Bachelor of Science course structure, including a science Major. This qualification in science is combined with one of the following key programs from the Bachelor of Business and Commerce: Applied Finance; Global Operations and Supply Chain Management; Hospitality Management; Human Resource Development and Organisational Development; Human Resource Management and Industrial Relations; International Business; Management; Marketing; Sport Management. Graduates will be equipped to work as scientists, with a good understanding of business principles and practices. Alternatively, as Business and Commerce graduates they will be well-prepared to work in science-based industries and institutions.

Offer

Campus	Mode
Campbelltown Campus	Internal
Parramatta Campus	Internal

Unit Set Structure

Note: Students may complete a Bachelor of Science without a key program, following the schedule of units that is listed below, and completing one of the Majors listed in the UWS Handbook entry for 3640 Bachelor of Science, provided this can be completed within the 16 Bachelor of Science units.

Bachelor of Science (No Key Program)/Bachelor of Business and Commerce (Applied Finance)

Parramatta and Campbelltown campus**Year 1****Autumn session**

- 200336.2** Business Academic Skills
200525.1 Principles of Economics

Parramatta Campus

Choose two of

- 300792.1** Biology A - The Diversity of Life
300224.2 Chemistry 1
300232.1 Introduction to Earth Sciences
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals
300558.1 Physics 1
300497.1 Professional Skills for Science
300661.1 Integrated Science 1

Campbelltown Campus

Choose two of

- 300539.1** Biodiversity
300554.1 Principles of Chemistry
200191.3 Fundamentals of Mathematics
300672.1 Mathematics 1A
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals
300558.1 Physics 1

300661.1 Integrated Science 1

Spring session

200083.1 Marketing Principles
200101.2 Accounting Information for Managers

Parramatta Campus

200263.2 Biometry

Choose one of

300793.1 Biology B - Cellular Processes
300225.2 Chemistry 2
300613.1 Introductory Geochemistry: Earth, Resources and Environments
300672.1 Mathematics 1A
300673.1 Mathematics 1B
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals
300559.1 Physics 2
200025.1 Discrete Mathematics

Campbelltown Campus

300700.3 Statistical Decision Making

Choose one of

300543.1 Cell Biology
300550.1 Medicinal Chemistry
300673.1 Mathematics 1B
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals
300559.1 Physics 2
200025.1 Discrete Mathematics
300375.1 Digital Forensic Photography 1

Year 2

Autumn session

200571.1 Management Dynamics

Parramatta Campus

Choose three of

300219.3 Biochemistry 1
300300.1 Microbiology 1
300297.1 Analytical Chemistry 2
300301.1 Organic Chemistry 2
300611.2 Chemical Mineralogy
300609.1 Plant Physiology
200033.3 Applied Statistics
200042.2 Introduction to Operations Research

Campbelltown Campus

Choose three of

300555.1 Proteins and Genes
300300.1 Microbiology 1
300547.1 Human Genetics
300545.1 Coordination Chemistry
300540.1 Biomolecular Dynamics
300413.1 Applied Instrumentation in Nanotechnology
200028.2 Advanced Calculus
200030.1 Differential Equations

200027.1 Linear Algebra

Spring session

200184.2 Introduction to Business Law

Parramatta Campus

Choose three of

300220.1 Biochemistry 2
300321.1 Microbiology 2
300230.1 Inorganic Chemistry 2
300236.1 Physical Chemistry 2
300612.1 Geochemical Systems
300608.1 Animal Physiology
200028.2 Advanced Calculus
200030.1 Differential Equations
200027.1 Linear Algebra

Campbelltown Campus

Choose three of

300548.1 Human Metabolism and Disease
300321.1 Microbiology 2
300590.1 Nanochemistry
300606.1 Foundations of Statistical Modelling and Decision Making
200033.3 Applied Statistics
300297.1 Analytical Chemistry 2
300553.1 Molecules of Life: Synthesis and Reactivity

Year 3

Autumn session

One Level 3 elective

Parramatta Campus

Choose three of

300298.1 Analytical Chemistry 3
300235.1 Organic Chemistry 3
300218.1 Applied Aspects of Inorganic Chemistry
300614.1 Environmental Geochemistry
300234.2 Molecular Biology
300229.2 Immunology
300617.2 Conservation Biology
200193.1 Abstract Algebra
200023.2 Analysis

Campbelltown Campus

Choose three of

300537.1 Advanced Chemical Analysis
300546.1 Drug Design and Synthesis
300549.1 Human Molecular Biology
300556.1 Analytical Protein Science
300557.1 Molecular Spectroscopy
200036.2 Data Mining and Visualisation
300544.1 Cell Signalling

Spring session

200488.2 Corporate Financial Management

Parramatta Campus

Choose three of

300231.1	Inorganic Chemistry 3
300303.1	Physical Chemistry 3
300645.1	Science Research Project 2
300749.1	Medical Microbiology
200024.1	Mathematical Finance
200022.2	Mathematical Modelling
200045.2	Quantitative Project
200038.2	Time Series and Forecasting
200036.2	Data Mining and Visualisation
300647.1	Environmental Biotechnology

Campbelltown Campus

Choose three of

300538.1	Advanced Inorganic Chemistry
300475.1	Molecular Pharmacokinetics
300324.1	Pharmacological Chemistry
300542.1	Biomolecular Science Project
300749.1	Medical Microbiology
300757.1	Molecular Biology of the Immune System
200037.2	Regression Analysis & Experimental Design
200022.2	Mathematical Modelling
200045.2	Quantitative Project

Year 4**Autumn session**

200549.1	The Australian Macroeconomy
200048.1	Financial Institutions and Markets
200537.2	Economics and Finance Engagement Project

And one alternate unit

Spring session

200053.2	Economic Modelling
200057.2	Investment Management

And two alternate units

Alternate units

200078.1	Portfolio Management
200055.3	International Finance
200077.1	The Superannuation Industry
200079.1	Derivatives
200518.1	Behavioural Finance
200059.1	Financial Economics

**Bachelor of Science (No Key Program)/
Bachelor of Business and Commerce (Global
Operations and Supply Chain Management)****Parramatta campus only****Year 1****Autumn session**

200336.2	Business Academic Skills
200525.1	Principles of Economics

Choose two of

300792.1	Biology A - The Diversity of Life
300224.2	Chemistry 1
300232.1	Introduction to Earth Sciences
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300558.1	Physics 1
300497.1	Professional Skills for Science
300661.1	Integrated Science 1
200025.1	Discrete Mathematics

Spring session

200083.1	Marketing Principles
200101.2	Accounting Information for Managers
200263.2	Biometry

Choose one of

300793.1	Biology B - Cellular Processes
300225.2	Chemistry 2
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300672.1	Mathematics 1A
300673.1	Mathematics 1B
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300559.1	Physics 2

Year 2**Autumn session**

200571.1	Management Dynamics
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Choose three of

300219.3	Biochemistry 1
300300.1	Microbiology 1
300297.1	Analytical Chemistry 2
300301.1	Organic Chemistry 2
300611.2	Chemical Mineralogy
300609.1	Plant Physiology
200033.3	Applied Statistics
200042.2	Introduction to Operations Research

Spring session

200184.2	Introduction to Business Law
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Choose three of

300220.1	Biochemistry 2
300321.1	Microbiology 2
300230.1	Inorganic Chemistry 2
300236.1	Physical Chemistry 2
300612.1	Geochemical Systems
300608.1	Animal Physiology
200028.2	Advanced Calculus
200030.1	Differential Equations
200027.1	Linear Algebra

Year 3**Autumn session**

Choose three of

300298.1	Analytical Chemistry 3
300235.1	Organic Chemistry 3
300218.1	Applied Aspects of Inorganic Chemistry

300614.1	Environmental Geochemistry
300234.2	Molecular Biology
300229.2	Immunology
300617.2	Conservation Biology
200193.1	Abstract Algebra
200023.2	Analysis

One Level 3 elective

Spring session

200677.2	Global Supply Chain Management
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Choose three of

300231.1	Inorganic Chemistry 3
300303.1	Physical Chemistry 3
300645.1	Science Research Project 2
300749.1	Medical Microbiology
200024.1	Mathematical Finance
200022.2	Mathematical Modelling
200045.2	Quantitative Project
200038.2	Time Series and Forecasting
200036.2	Data Mining and Visualisation
300647.1	Environmental Biotechnology

Year 4

Autumn session

200528.1	Management of Projects
200588.1	Global Operations and Logistics Management
200677.2	Global Supply Chain Management
200668.1	Technology Management for Competitiveness

Spring session

200167.1	Quality Management
200585.1	Organisational Behaviour
200565.2	Operations and Logistics in Practice
200565.2	Operations and Logistics in Practice
200162.1	Business Report

Bachelor of Science (No Key Program)/ Bachelor of Business and Commerce (Hospitality Management)

Parramatta campus only

Year 1

Autumn session

200336.2	Business Academic Skills
200525.1	Principles of Economics

Choose two of

300792.1	Biology A - The Diversity of Life
300224.2	Chemistry 1
300232.1	Introduction to Earth Sciences
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300558.1	Physics 1
300497.1	Professional Skills for Science
300661.1	Integrated Science 1
200025.1	Discrete Mathematics

Spring session

200083.1	Marketing Principles
200101.2	Accounting Information for Managers
200263.2	Biometry

Choose one of

300793.1	Biology B - Cellular Processes
300225.2	Chemistry 2
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300672.1	Mathematics 1A
300673.1	Mathematics 1B
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300559.1	Physics 2

Year 2

Autumn session

200571.1	Management Dynamics
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Choose three of

300219.3	Biochemistry 1
300300.1	Microbiology 1
300297.1	Analytical Chemistry 2
300301.1	Organic Chemistry 2
300611.2	Chemical Mineralogy
300609.1	Plant Physiology
200033.3	Applied Statistics
200042.2	Introduction to Operations Research

Spring session

200184.2	Introduction to Business Law
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Choose three of

300220.1	Biochemistry 2
300321.1	Microbiology 2
300230.1	Inorganic Chemistry 2
300236.1	Physical Chemistry 2
300612.1	Geochemical Systems
300608.1	Animal Physiology
200028.2	Advanced Calculus
200030.1	Differential Equations
200027.1	Linear Algebra

Year 3

Autumn session

200273.3	Managing Service and Experience
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Choose three of

300298.1	Analytical Chemistry 3
300235.1	Organic Chemistry 3
300218.1	Applied Aspects of Inorganic Chemistry
300614.1	Environmental Geochemistry
300234.2	Molecular Biology
300229.2	Immunology
300617.2	Conservation Biology
200193.1	Abstract Algebra
200023.2	Analysis

Spring session

Choose three of

300231.1	Inorganic Chemistry 3
300303.1	Physical Chemistry 3
300645.1	Science Research Project 2
300749.1	Medical Microbiology
200024.1	Mathematical Finance
200022.2	Mathematical Modelling
200045.2	Quantitative Project
200038.2	Time Series and Forecasting
200036.2	Data Mining and Visualisation
300647.1	Environmental Biotechnology

One Level 3 elective

Year 4**Autumn session**

200709.1	Managing the Accommodation Experience
200710.1	Managing the Food and Beverage Experience
200708.1	Hospitality Industry
200707.1	Service Industry Studies

Spring session

200584.2	Hospitality Management Operations
200742.1	Sport and Hospitality Event Management
200148.1	Planning and Design of Hospitality Facilities
200561.2	Hospitality Management Applied Project

**Bachelor of Science (No Key Program)/
Bachelor of Business and Commerce
(Human Resource Development and
Organisational Development)**

Parramatta campus only

Year 1**Autumn session**

200336.2	Business Academic Skills
200525.1	Principles of Economics

Choose two of

300792.1	Biology A - The Diversity of Life
300224.2	Chemistry 1
300232.1	Introduction to Earth Sciences
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300558.1	Physics 1
300497.1	Professional Skills for Science
300661.1	Integrated Science 1
200025.1	Discrete Mathematics

Spring session

200083.1	Marketing Principles
200101.2	Accounting Information for Managers
200263.2	Biometry

Choose one of

300793.1	Biology B - Cellular Processes
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300225.2	Chemistry 2
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300672.1	Mathematics 1A
300673.1	Mathematics 1B
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300559.1	Physics 2

Year 2**Autumn session**

200571.1	Management Dynamics
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Choose three of

300219.3	Biochemistry 1
300300.1	Microbiology 1
300297.1	Analytical Chemistry 2
300301.1	Organic Chemistry 2
300611.2	Chemical Mineralogy
300609.1	Plant Physiology
200033.3	Applied Statistics
200042.2	Introduction to Operations Research

Spring session

200184.2	Introduction to Business Law
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Choose three of

300220.1	Biochemistry 2
300321.1	Microbiology 2
300230.1	Inorganic Chemistry 2
300236.1	Physical Chemistry 2
300612.1	Geochemical Systems
300608.1	Animal Physiology
200028.2	Advanced Calculus
200030.1	Differential Equations
200027.1	Linear Algebra

Year 3**Autumn session**

Choose three of

300298.1	Analytical Chemistry 3
300235.1	Organic Chemistry 3
300218.1	Applied Aspects of Inorganic Chemistry
300614.1	Environmental Geochemistry
300234.2	Molecular Biology
300229.2	Immunology
300617.2	Conservation Biology
200193.1	Abstract Algebra
200023.2	Analysis

One Level 3 elective

Spring session

200300.1	Managing People at Work
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Choose three of

300231.1	Inorganic Chemistry 3
300303.1	Physical Chemistry 3
300645.1	Science Research Project 2
300749.1	Medical Microbiology

200024.1	Mathematical Finance
200022.2	Mathematical Modelling
200045.2	Quantitative Project
200038.2	Time Series and Forecasting
200036.2	Data Mining and Visualisation
300647.1	Environmental Biotechnology

Year 4**Autumn session**

200610.1	Employee Training and Development
200243.2	Work Employment and the Labour Market
200570.2	Management of Change
200175.4	Managing Human Resources and Industrial Relations

Spring session

200376.1	Managing and Developing Careers
200157.2	Organisational Learning and Development
200159.2	Organisation Analysis and Design
200381.3	Human Resources Development Seminar

**Bachelor of Science (No Key Program)/
Bachelor of Business and Commerce
(Human Resource Management and
Industrial Relations)**

Parramatta and Campbelltown campus**Year 1****Autumn session**

200336.2	Business Academic Skills
200525.1	Principles of Economics

Parramatta Campus

Choose two of

300792.1	Biology A - The Diversity of Life
300224.2	Chemistry 1
300232.1	Introduction to Earth Sciences
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300558.1	Physics 1
300497.1	Professional Skills for Science
300661.1	Integrated Science 1

Campbelltown Campus

Choose two of

300539.1	Biodiversity
300554.1	Principles of Chemistry
200191.3	Fundamentals of Mathematics
300672.1	Mathematics 1A
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300558.1	Physics 1
300661.1	Integrated Science 1

Spring session

200083.1	Marketing Principles
200101.2	Accounting Information for Managers

Parramatta Campus

200263.2	Biometry
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Choose one of

300793.1	Biology B - Cellular Processes
300225.2	Chemistry 2
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300672.1	Mathematics 1A
300673.1	Mathematics 1B
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300559.1	Physics 2
200025.1	Discrete Mathematics

Campbelltown Campus

300700.3	Statistical Decision Making
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Choose one of

300543.1	Cell Biology
300550.1	Medicinal Chemistry
300673.1	Mathematics 1B
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300559.1	Physics 2
200025.1	Discrete Mathematics
300375.1	Digital Forensic Photography 1

Year 2**Autumn session**

200571.1	Management Dynamics
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Parramatta Campus

Choose three of

300219.3	Biochemistry 1
300300.1	Microbiology 1
300297.1	Analytical Chemistry 2
300301.1	Organic Chemistry 2
300611.2	Chemical Mineralogy
300609.1	Plant Physiology
200033.3	Applied Statistics
200042.2	Introduction to Operations Research

Campbelltown Campus

Choose three of

300555.1	Proteins and Genes
300300.1	Microbiology 1
300547.1	Human Genetics
300545.1	Coordination Chemistry
300540.1	Biomolecular Dynamics
300413.1	Applied Instrumentation in Nanotechnology
200028.2	Advanced Calculus
200030.1	Differential Equations
200027.1	Linear Algebra

Spring session

200184.2	Introduction to Business Law
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Parramatta Campus

Choose three of

300220.1	Biochemistry 2
300321.1	Microbiology 2
300230.1	Inorganic Chemistry 2
300236.1	Physical Chemistry 2
300612.1	Geochemical Systems
300608.1	Animal Physiology
200028.2	Advanced Calculus
200030.1	Differential Equations
200027.1	Linear Algebra

Campbelltown Campus

Choose three of

300548.1	Human Metabolism and Disease
300321.1	Microbiology 2
300590.1	Nanochemistry
300606.1	Foundations of Statistical Modelling and Decision Making
200033.3	Applied Statistics
300297.1	Analytical Chemistry 2
300553.1	Molecules of Life: Synthesis and Reactivity

Year 3**Autumn session**

One Level 3 elective

Parramatta Campus

Choose three of

300298.1	Analytical Chemistry 3
300235.1	Organic Chemistry 3
300218.1	Applied Aspects of Inorganic Chemistry
300614.1	Environmental Geochemistry
300234.2	Molecular Biology
300229.2	Immunology
300617.2	Conservation Biology
200193.1	Abstract Algebra
200023.2	Analysis

Campbelltown Campus

Choose three of

300537.1	Advanced Chemical Analysis
300546.1	Drug Design and Synthesis
300549.1	Human Molecular Biology
300556.1	Analytical Protein Science
300557.1	Molecular Spectroscopy
200036.2	Data Mining and Visualisation
300544.1	Cell Signalling

Spring session

200300.1	Managing People at Work
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Parramatta Campus

Choose three of

300231.1	Inorganic Chemistry 3
300303.1	Physical Chemistry 3
300645.1	Science Research Project 2
300749.1	Medical Microbiology

200024.1	Mathematical Finance
200022.2	Mathematical Modelling
200045.2	Quantitative Project
200038.2	Time Series and Forecasting
200036.2	Data Mining and Visualisation
300647.1	Environmental Biotechnology

Campbelltown Campus

Choose three of

300538.1	Advanced Inorganic Chemistry
300475.1	Molecular Pharmacokinetics
300324.1	Pharmacological Chemistry
300542.1	Biomolecular Science Project
300749.1	Medical Microbiology
300757.1	Molecular Biology of the Immune System
200037.2	Regression Analysis & Experimental Design
200022.2	Mathematical Modelling
200045.2	Quantitative Project

Year 4**Autumn session**

200614.1	Enterprise Industrial Relations
200621.2	International Human Resource Management
200616.2	Workplace Behaviour
200613.1	Negotiation, Bargaining and Advocacy

Spring session

200739.1	Reward and Performance Management
200740.1	Human Resource and Industrial Relations Strategy
200575.2	Processes and Evaluation in Employment Relations

Choose one of

200610.1	Employee Training and Development
200150.1	Managing Diversity
200753.1	Occupational Health and Safety

**Bachelor of Science (No Key Program)/
Bachelor of Business and Commerce
(International Business)****Parramatta campus only****Year 1****Autumn session**

200336.2	Business Academic Skills
200525.1	Principles of Economics

Choose two of

300792.1	Biology A - The Diversity of Life
300224.2	Chemistry 1
300232.1	Introduction to Earth Sciences
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300558.1	Physics 1
300497.1	Professional Skills for Science
300661.1	Integrated Science 1
200025.1	Discrete Mathematics

Spring session

- 200083.1 Marketing Principles
 200101.2 Accounting Information for Managers
 200263.2 Biometry

Choose one of

- 300793.1 Biology B - Cellular Processes
 300225.2 Chemistry 2
 300613.1 Introductory Geochemistry: Earth, Resources and Environments
 300672.1 Mathematics 1A
 300673.1 Mathematics 1B
 300134.1 Introduction to Information Technology
 300580.1 Programming Fundamentals
 300559.1 Physics 2

Year 2**Autumn session**

- 200571.1 Management Dynamics

Choose three of

- 300219.3 Biochemistry 1
 300300.1 Microbiology 1
 300297.1 Analytical Chemistry 2
 300301.1 Organic Chemistry 2
 300611.2 Chemical Mineralogy
 300609.1 Plant Physiology
 200033.3 Applied Statistics
 200042.2 Introduction to Operations Research

Spring session

- 200184.2 Introduction to Business Law

Choose three of

- 300220.1 Biochemistry 2
 300321.1 Microbiology 2
 300230.1 Inorganic Chemistry 2
 300236.1 Physical Chemistry 2
 300612.1 Geochemical Systems
 300608.1 Animal Physiology
 200028.2 Advanced Calculus
 200030.1 Differential Equations
 200027.1 Linear Algebra

Year 3**Autumn session**

Choose three of

- 300298.1 Analytical Chemistry 3
 300235.1 Organic Chemistry 3
 300218.1 Applied Aspects of Inorganic Chemistry
 300614.1 Environmental Geochemistry
 300234.2 Molecular Biology
 300229.2 Immunology
 300617.2 Conservation Biology
 200193.1 Abstract Algebra
 200023.2 Analysis

One Level 3 elective

Spring session

- 200591.1 Introduction to International Business

Choose three of

- 300231.1 Inorganic Chemistry 3
 300303.1 Physical Chemistry 3
 300645.1 Science Research Project 2
 300749.1 Medical Microbiology
 200024.1 Mathematical Finance
 200022.2 Mathematical Modelling
 200045.2 Quantitative Project
 200038.2 Time Series and Forecasting
 200036.2 Data Mining and Visualisation
 300647.1 Environmental Biotechnology

Year 4**Autumn session**

- 200541.1 Globalisation and Trade
 200094.1 International Marketing
 200626.1 International Business Strategy
 200595.2 International Business Finance

Spring session

- 200590.1 International Business Project
 200374.2 International Marketing Research
 200589.1 Export Strategy and Applications

Choose one of

- 200098.1 The Markets of Asia
 200099.2 The Markets of Europe

Bachelor of Science (No Key Program)/ Bachelor of Business and Commerce (Management)

Parramatta and Campbelltown campus**Year 1****Autumn session**

- 200336.2 Business Academic Skills
 200525.1 Principles of Economics

Parramatta Campus

Choose two of

- 300792.1 Biology A - The Diversity of Life
 300224.2 Chemistry 1
 300232.1 Introduction to Earth Sciences
 300134.1 Introduction to Information Technology
 300580.1 Programming Fundamentals
 300558.1 Physics 1
 300497.1 Professional Skills for Science
 300661.1 Integrated Science 1

Campbelltown Campus

Choose two of

- 300539.1 Biodiversity
 300554.1 Principles of Chemistry

200191.3	Fundamentals of Mathematics
300672.1	Mathematics 1A
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300558.1	Physics 1
300661.1	Integrated Science 1

Spring session

200083.1	Marketing Principles
200101.2	Accounting Information for Managers

Parramatta Campus

200263.2	Biometry
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Choose one of

300793.1	Biology B - Cellular Processes
300225.2	Chemistry 2
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300672.1	Mathematics 1A
300673.1	Mathematics 1B
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300559.1	Physics 2
200025.1	Discrete Mathematics

Campbelltown Campus

300700.3	Statistical Decision Making
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Choose one of

300543.1	Cell Biology
300550.1	Medicinal Chemistry
300673.1	Mathematics 1B
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300559.1	Physics 2
200025.1	Discrete Mathematics
300375.1	Digital Forensic Photography 1

Year 2**Autumn session**

200571.1	Management Dynamics
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Parramatta Campus

Choose three of

300219.3	Biochemistry 1
300300.1	Microbiology 1
300297.1	Analytical Chemistry 2
300301.1	Organic Chemistry 2
300611.2	Chemical Mineralogy
300609.1	Plant Physiology
200033.3	Applied Statistics
200042.2	Introduction to Operations Research

Campbelltown Campus

Choose three of

300555.1	Proteins and Genes
300300.1	Microbiology 1
300547.1	Human Genetics

300545.1	Coordination Chemistry
300540.1	Biomolecular Dynamics
300413.1	Applied Instrumentation in Nanotechnology
200028.2	Advanced Calculus
200030.1	Differential Equations
200027.1	Linear Algebra

Spring session

200184.2	Introduction to Business Law
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Parramatta Campus

Choose three of

300220.1	Biochemistry 2
300321.1	Microbiology 2
300230.1	Inorganic Chemistry 2
300236.1	Physical Chemistry 2
300612.1	Geochemical Systems
300608.1	Animal Physiology
200028.2	Advanced Calculus
200030.1	Differential Equations
200027.1	Linear Algebra

Campbelltown Campus

Choose three of

300548.1	Human Metabolism and Disease
300321.1	Microbiology 2
300590.1	Nanochemistry
300606.1	Foundations of Statistical Modelling and Decision Making
200033.3	Applied Statistics
300297.1	Analytical Chemistry 2
300553.1	Molecules of Life: Synthesis and Reactivity

Year 3**Autumn session****Parramatta Campus**

Choose three of

300298.1	Analytical Chemistry 3
300235.1	Organic Chemistry 3
300218.1	Applied Aspects of Inorganic Chemistry
300614.1	Environmental Geochemistry
300234.2	Molecular Biology
300229.2	Immunology
300617.2	Conservation Biology
200193.1	Abstract Algebra
200023.2	Analysis

Campbelltown Campus

Choose three of

300537.1	Advanced Chemical Analysis
300546.1	Drug Design and Synthesis
300549.1	Human Molecular Biology
300556.1	Analytical Protein Science
300557.1	Molecular Spectroscopy
200036.2	Data Mining and Visualisation
300544.1	Cell Signalling

One Level 3 elective

Spring session

300585.1 Organisational Behaviour

Parramatta Campus

Choose three of

300231.1 Inorganic Chemistry 3
300303.1 Physical Chemistry 3
300645.1 Science Research Project 2
300749.1 Medical Microbiology
200024.1 Mathematical Finance
200022.2 Mathematical Modelling
200045.2 Quantitative Project
200038.2 Time Series and Forecasting
200036.2 Data Mining and Visualisation
300647.1 Environmental Biotechnology

Campbelltown Campus

Choose three of

300538.1 Advanced Inorganic Chemistry
300475.1 Molecular Pharmacokinetics
300324.1 Pharmacological Chemistry
300542.1 Biomolecular Science Project
300749.1 Medical Microbiology
300757.1 Molecular Biology of the Immune System
200037.2 Regression Analysis & Experimental Design
200022.2 Mathematical Modelling
200045.2 Quantitative Project

Year 4**Autumn session**

200158.2 Business, Society and Policy
200586.1 Cross Cultural Management
200570.2 Management of Change
200752.1 Power, Politics and Knowledge

Spring session

200588.1 Global Operations and Logistics Management
200159.2 Organisation Analysis and Design
200568.2 Contemporary Management Issues
200587.1 Strategic Management

**Bachelor of Science (No Key Program)/
 Bachelor of Business and Commerce
 (Marketing)**

Parramatta and Campbelltown campus

Year 1**Autumn session**

200336.2 Business Academic Skills
200525.1 Principles of Economics

Parramatta Campus

Choose two of

300792.1 Biology A - The Diversity of Life
300224.2 Chemistry 1

300232.1 Introduction to Earth Sciences
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals
300558.1 Physics 1
300497.1 Professional Skills for Science
300661.1 Integrated Science 1

Campbelltown Campus

Choose two of

300539.1 Biodiversity
300554.1 Principles of Chemistry
200191.3 Fundamentals of Mathematics
300672.1 Mathematics 1A
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals
300558.1 Physics 1
300661.1 Integrated Science 1

Spring session

200083.1 Marketing Principles
200101.2 Accounting Information for Managers

Parramatta Campus

200263.2 Biometry

Choose one of

300793.1 Biology B - Cellular Processes
300225.2 Chemistry 2
300613.1 Introductory Geochemistry: Earth, Resources and Environments
300672.1 Mathematics 1A
300673.1 Mathematics 1B
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals
300559.1 Physics 2
200025.1 Discrete Mathematics

Campbelltown Campus

300700.3 Statistical Decision Making

Choose one of

300543.1 Cell Biology
300550.1 Medicinal Chemistry
300673.1 Mathematics 1B
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals
300559.1 Physics 2
200025.1 Discrete Mathematics
300375.1 Digital Forensic Photography 1

Year 2**Autumn session**

200571.1 Management Dynamics

Parramatta Campus

Choose three of

300219.3 Biochemistry 1
300300.1 Microbiology 1
300297.1 Analytical Chemistry 2

300301.1	Organic Chemistry 2
300611.2	Chemical Mineralogy
300609.1	Plant Physiology
200033.3	Applied Statistics
200042.2	Introduction to Operations Research

Campbelltown Campus

Choose three of

300555.1	Proteins and Genes
300300.1	Microbiology 1
300547.1	Human Genetics
300545.1	Coordination Chemistry
300540.1	Biomolecular Dynamics
300413.1	Applied Instrumentation in Nanotechnology
200028.2	Advanced Calculus
200030.1	Differential Equations
200027.1	Linear Algebra

Spring session

200184.2	Introduction to Business Law
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Parramatta Campus

Choose three of

300220.1	Biochemistry 2
300321.1	Microbiology 2
300230.1	Inorganic Chemistry 2
300236.1	Physical Chemistry 2
300612.1	Geochemical Systems
300608.1	Animal Physiology
200028.2	Advanced Calculus
200030.1	Differential Equations
200027.1	Linear Algebra

Campbelltown Campus

Choose three of

300548.1	Human Metabolism and Disease
300321.1	Microbiology 2
300590.1	Nanochemistry
300606.1	Foundations of Statistical Modelling and Decision Making
200033.3	Applied Statistics
300297.1	Analytical Chemistry 2
300553.1	Molecules of Life: Synthesis and Reactivity

Year 3**Autumn session****Parramatta Campus**

Choose three of

300298.1	Analytical Chemistry 3
300235.1	Organic Chemistry 3
300218.1	Applied Aspects of Inorganic Chemistry
300614.1	Environmental Geochemistry
300234.2	Molecular Biology
300229.2	Immunology
300617.2	Conservation Biology
200193.1	Abstract Algebra
200023.2	Analysis

Campbelltown Campus

Choose three of

300537.1	Advanced Chemical Analysis
300546.1	Drug Design and Synthesis
300549.1	Human Molecular Biology
300556.1	Analytical Protein Science
300557.1	Molecular Spectroscopy
200036.2	Data Mining and Visualisation
300544.1	Cell Signalling

One Level 3 elective

Spring session

200084.1	Consumer Behaviour
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Parramatta Campus

Choose three of

300231.1	Inorganic Chemistry 3
300303.1	Physical Chemistry 3
300645.1	Science Research Project 2
300749.1	Medical Microbiology
200024.1	Mathematical Finance
200022.2	Mathematical Modelling
200045.2	Quantitative Project
200038.2	Time Series and Forecasting
200036.2	Data Mining and Visualisation
300647.1	Environmental Biotechnology

Campbelltown Campus

Choose three of

300538.1	Advanced Inorganic Chemistry
300475.1	Molecular Pharmacokinetics
300324.1	Pharmacological Chemistry
300542.1	Biomolecular Science Project
300749.1	Medical Microbiology
300757.1	Molecular Biology of the Immune System
200037.2	Regression Analysis & Experimental Design
200037.2	Regression Analysis & Experimental Design
200022.2	Mathematical Modelling
200045.2	Quantitative Project

Year 4**Autumn session**

200086.2	Marketing Communications
200592.1	Marketing Research
200087.2	Strategic Marketing Management
200094.1	International Marketing

Spring session

200090.2	Marketing of Services
200088.1	Brand and Product Management
200091.2	Business to Business Marketing
200096.2	Marketing Planning Project

Bachelor of Science (No Key Program)/ Bachelor of Business and Commerce (Sport Management)

Campelltown campus only

Year 1

Autumn session

- 200336.2** Business Academic Skills
200525.1 Principles of Economics

Choose two of

- 300539.1** Biodiversity
300554.1 Principles of Chemistry
200191.3 Fundamentals of Mathematics
300672.1 Mathematics 1A
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals
300558.1 Physics 1
300661.1 Integrated Science 1

Spring session

- 200083.1** Marketing Principles
200101.2 Accounting Information for Managers
300700.3 Statistical Decision Making

Choose one of

- 300543.1** Cell Biology
300550.1 Medicinal Chemistry
300673.1 Mathematics 1B
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals
300559.1 Physics 2
200025.1 Discrete Mathematics
300375.1 Digital Forensic Photography 1

Year 2

Autumn session

- 200571.1** Management Dynamics

Choose three of

- 300555.1** Proteins and Genes
300300.1 Microbiology 1
300547.1 Human Genetics
300545.1 Coordination Chemistry
300540.1 Biomolecular Dynamics
300413.1 Applied Instrumentation in Nanotechnology
200028.2 Advanced Calculus
200030.1 Differential Equations
200027.1 Linear Algebra

Spring session

- 200184.2** Introduction to Business Law

Choose three of

- 300548.1** Human Metabolism and Disease
300321.1 Microbiology 2
300590.1 Nanochemistry

- 300606.1** Foundations of Statistical Modelling and Decision Making
200033.3 Applied Statistics
300297.1 Analytical Chemistry 2
300553.1 Molecules of Life: Synthesis and Reactivity

Year 3

Autumn session

- 200705.1** The World of Sport Management

Choose three of

- 300537.1** Advanced Chemical Analysis
300546.1 Drug Design and Synthesis
300549.1 Human Molecular Biology
300556.1 Analytical Protein Science
300557.1 Molecular Spectroscopy
200036.2 Data Mining and Visualisation
300544.1 Cell Signalling

Spring session

Choose three of

- 300538.1** Advanced Inorganic Chemistry
300475.1 Molecular Pharmacokinetics
300324.1 Pharmacological Chemistry
300542.1 Biomolecular Science Project
300749.1 Medical Microbiology
300757.1 Molecular Biology of the Immune System
200037.2 Regression Analysis & Experimental Design
200022.2 Mathematical Modelling
200045.2 Quantitative Project

One Level 3 elective

Year 4

Autumn session

- 200665.1** Strategic Communication in Sport
200273.3 Managing Service and Experience
200754.1 Sports Management - Planning and Development
200707.1 Service Industry Studies

Spring session

- 200664.1** Sport Management Internship
200742.1 Sport and Hospitality Event Management
200751.1 Sport Management Applied Project
400335.2 Contemporary Issues in Sport Management

Key Program - Human Molecular Biology

KP3632HMB.1

Human Molecular Biology emphasises recent discoveries in molecular and cell biology relevant to human health and disease - molecular biology and functional genomics, protein science, proteomics, human metabolism, genetics, cell signalling and molecular immunology.

Offer

Campus	Mode
Campbelltown Campus	Internal

Unit Set Structure

Qualification for the Bachelor of Biomolecular Science with a Key Program in Human Molecular Biology requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Full Time**Year 1****Autumn session**

300539.1	Biodiversity
300554.1	Principles of Chemistry
300558.1	Physics 1

Choose one of

200191.3	Fundamentals of Mathematics
200189.1	Concepts of Mathematics

Spring session

300543.1	Cell Biology
300550.1	Medicinal Chemistry
300541.1	Biomolecular Frontiers

And one elective

Year 2**Autumn session**

300555.1	Proteins and Genes
300300.1	Microbiology 1
300547.1	Human Genetics

And one elective

Spring session

300548.1	Human Metabolism and Disease
300321.1	Microbiology 2

One Level 2 Chemistry unit

And one elective

Please note: some Chemistry Level 2 units are on offer in Autumn only. Students may choose to study a Chemistry Level 2 unit in Autumn in place of an elective, and then choose two electives in the Spring session.

Year 3**Autumn session**

300549.1	Human Molecular Biology
300544.1	Cell Signalling
300556.1	Analytical Protein Science

And one elective

Spring session

300551.1	Molecular Basis of Disease
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300757.1 Molecular Biology of the Immune System

One Level 3 alternate unit

And one elective

Please note: some Level 3 Alternate Units are on offer in Autumn only. Students may choose to study an Alternate Unit in Autumn in place of an elective, and then choose two electives in the Spring session.

Level 2 Chemistry Units

300297.1	Analytical Chemistry 2
300540.1	Biomolecular Dynamics
300545.1	Coordination Chemistry
300553.1	Molecules of Life: Synthesis and Reactivity

Level 3 Alternate Units

300749.1	Medical Microbiology
300324.1	Pharmacological Chemistry
300756.1	Topics in Physiology
300537.1	Advanced Chemical Analysis
300538.1	Advanced Inorganic Chemistry
300542.1	Biomolecular Science Project
300546.1	Drug Design and Synthesis

Key Program - Pharmaceutical Chemistry**KP3632PC.1**

Pharmaceutical Chemistry emphasises the applications of chemistry for human health – biomolecular dynamics and pharmacokinetics, coordination chemistry, drug design, development, and analysis.

Offer

Campus	Mode
Campbelltown Campus	External

Unit Set Structure

Qualification for the Bachelor of Biomolecular Science with a Key Program in Pharmaceutical Chemistry requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Professional Accreditation

It is anticipated that the Bachelor of Biomolecular Science with Key Program in Pharmaceutical Chemistry will receive accreditation from the Royal Australian Chemical Institute

Recommended Sequence**Full Time****Year 1****Autumn session**

300539.1	Biodiversity
300554.1	Principles of Chemistry
300558.1	Physics 1

Choose one of

- 200191.3** Fundamentals of Mathematics
200189.1 Concepts of Mathematics

Spring session

- 300543.1** Cell Biology
300550.1 Medicinal Chemistry
300541.1 Biomolecular Frontiers

And one elective

Year 2

Autumn session

- 300545.1** Coordination Chemistry
300540.1 Biomolecular Dynamics
300555.1 Proteins and Genes

And one elective

Spring session

- 300297.1** Analytical Chemistry 2
300553.1 Molecules of Life: Synthesis and Reactivity
300505.1 Pharmacology

And one elective

Year 3

Autumn session

- 300537.1** Advanced Chemical Analysis
300546.1 Drug Design and Synthesis

One Level 3 Alternate unit

And one elective

Spring session

- 300538.1** Advanced Inorganic Chemistry
300324.1 Pharmacological Chemistry
300475.1 Molecular Pharmacokinetics

And one elective

Please note: some Level 3 Alternate units are on offer in Spring only. Students may choose to study two elective units in the Autumn session and an Alternate unit in Spring.

Level 3 Alternate Units

- 300542.1** Biomolecular Science Project
300544.1 Cell Signalling
300549.1 Human Molecular Biology
300757.1 Molecular Biology of the Immune System
300556.1 Analytical Protein Science
300557.1 Molecular Spectroscopy

Key Program - Information Systems

KT3000.1

The Key Program in Information Systems focuses on computing and information technology in the context of business.

Offer

Campus	Mode
Parramatta Campus	Internal

Unit Set Structure

Start of Year Intake

Year 1

Autumn session

- 300580.1** Programming Fundamentals
100483.1 Principles of Professional Communication 1
300585.1 Systems Analysis and Design
300573.1 Information Systems in Context

Spring session

- 300565.1** Computer Networking
300104.2 Database Design and Development
300144.2 Object Oriented Analysis

And one elective

Year 2

Autumn session

- 300582.1** Technologies for Web Applications
300570.2 Human-Computer Interaction
300581.1 Programming Techniques
200032.3 Statistics for Business

Spring session

- 300583.1** Web Systems Development
300569.1 Computer Security
300572.1 Information Systems Deployment and Management
300089.3 Commercial Applications Development

Year 3

Autumn session

- 300578.2** Professional Development
300584.2 Emerging Trends in Information Systems

And two electives

Spring session

- 300579.2** Professional Experience

And three electives

Mid Year Intake**Year 1****Spring session**

300565.1	Computer Networking
300104.2	Database Design and Development
300144.2	Object Oriented Analysis

And one elective

Year 2**Autumn session**

300580.1	Programming Fundamentals
100483.1	Principles of Professional Communication 1
300585.1	Systems Analysis and Design
300573.1	Information Systems in Context

Spring session

300569.1	Computer Security
300572.1	Information Systems Deployment and Management
300089.3	Commercial Applications Development

And one elective

Year 3**Autumn session**

300582.1	Technologies for Web Applications
300570.2	Human-Computer Interaction
300581.1	Programming Techniques
200032.3	Statistics for Business

Spring session

300579.2	Professional Experience
300583.1	Web Systems Development

And two electives

Year 4**Autumn session**

300578.2	Professional Development
300584.2	Emerging Trends in Information Systems

And two electives

Key Program - Construction**KT3026.1**

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, 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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure**Full time - Autumn intake****Year 2****Autumn session**

300731.1	Soil Engineering
300040.1	Mechanics of Materials
200486.1	Quantity Surveying 1
300482.1	Engineering Geology and Concrete Materials

Spring session

300733.1	Introduction to Structural Engineering
MG102A.2	Management Foundations
300738.1	Surveying for Engineers
200468.1	Estimating 1

Year 3**Autumn session**

300732.1	Structural Analysis
300727.1	Project Management
300728.1	Construction Planning
300488.2	Numerical Methods in Engineering

Spring session

300053.2	Professional Practice
300730.1	Steel Structures
300736.1	Concrete Structures (UG)
300485.1	Foundation Engineering

Industrial Experience

300741.1	Industrial Experience (Engineering)
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Year 4 (Non-Honours stream)**Autumn session**

300483.2	Engineering Project
200471.2	Construction Technology 5 (Envelope)

And two electives

Spring session

300483.2	Engineering Project
300725.1	Construction Technology 6 (Services)

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**

300675.1 Honours Thesis

And two electives

Spring session

300675.1 Honours Thesis

And two electives

Full-time - Spring intake**Year 1****Spring session**

200237.2 Mathematics for Engineers 1
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Autumn session

200238.1 Mathematics for Engineers 2
300464.1 Physics and Materials
300040.1 Mechanics of Materials
300674.1 Engineering, Design and Construction Practice

Year 2**Spring session**

300733.1 Introduction to Structural Engineering
MG102A.2 Management Foundations
300738.1 Surveying for Engineers
200468.1 Estimating 1

Autumn session

300731.1 Soil Engineering
300027.1 Engineering Computing
200486.1 Quantity Surveying 1
300482.1 Engineering Geology and Concrete Materials

Year 3**Spring session**

300053.2 Professional Practice
300730.1 Steel Structures
300736.1 Concrete Structures (UG)
300485.1 Foundation Engineering

Autumn session

300732.1 Structural Analysis
300727.1 Project Management
300728.1 Construction Planning
300488.2 Numerical Methods in Engineering

Industrial Experience

300741.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)**Spring session**

300483.2 Engineering Project
300725.1 Construction Technology 6 (Services)

And two electives

Autumn session

300483.2 Engineering Project
200471.2 Construction Technology 5 (Envelope)

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)**Spring session**

300675.1 Honours Thesis

And two electives

Autumn session

300675.1 Honours Thesis

And two electives

It is strongly recommended that electives are chosen from the following list.

300706.1 Building 1
300707.1 Building 2
300748.1 Quality and Value Management
300723.1 Development Control
300722.1 Building Regulations Studies
200482.1 Construction in Practice 1
200484.2 Construction in Practice 3
300740.1 Water Engineering
300486.1 Infrastructure Engineering
200471.2 Construction Technology 5 (Envelope)
300725.1 Construction Technology 6 (Services)

Key Program - Medical Nanotechnology**KT3031.1**

This Key Program prepares students for professional careers in the multidisciplinary field of nanotechnology, covering biological, chemical and physical processes at the nanoscale. Students will develop fundamental skills in the technology of advanced imaging and characterisation techniques for seeing and manipulating of atoms/ molecules, creating chemical and biological nanomachines, smart materials, biomaterials and biodevices, molecular mimics and fabrication of nanostructured devices through the specialised units in this program. Graduates will be skilled to pursue further postgraduate research and/or many challenging career options, examples include as nanotechnologists, smart and effective product developers,

managers and consultants in biotechnology, defence, petroleum and pharmaceutical and health industries, chemical, material and engineering focused industries.

Offer

Campus	Mode
Campbelltown Campus	Internal

Unit Set Structure

Year 1

Autumn session

300554.1	Principles of Chemistry
300672.1	Mathematics 1A
300558.1	Physics 1
300705.1	Nanotechnology

Spring session

300550.1	Medicinal Chemistry
300673.1	Mathematics 1B
300559.1	Physics 2
300543.1	Cell Biology

Year 2

Autumn session

300540.1	Biomolecular Dynamics
300545.1	Coordination Chemistry
300555.1	Proteins and Genes

And one elective

Spring session

300413.1	Applied Instrumentation in Nanotechnology
300553.1	Molecules of Life: Synthesis and Reactivity
300590.1	Nanochemistry

And one elective

Year 3

Autumn session

300414.2	Biodevices
300415.1	Fabrication of Nanostructured Devices

One Level 3 elective

And one elective

Spring session

300419.1	Quantum Properties of Chemical Systems
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And one Nanotechnology Alternate Unit

One Level 3 elective

One elective

Nanotechnology Alternate Units

300557.1	Molecular Spectroscopy
300556.1	Analytical Protein Science
300537.1	Advanced Chemical Analysis
300544.1	Cell Signalling

300757.1	Molecular Biology of the Immune System
300538.1	Advanced Inorganic Chemistry
200022.2	Mathematical Modelling
300546.1	Drug Design and Synthesis
300324.1	Pharmacological Chemistry
300475.1	Molecular Pharmacokinetics

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Electrical

KT3032.1

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Professional Accreditation

This Key Program has received full accreditation from Engineers Australia at the level of Professional Engineer.

Full-time - Autumn intake

Year 2

Autumn session

200242.2	Mathematics for Engineers 3
300018.1	Digital Systems 1
300005.1	Circuit Theory
300025.2	Electronics

Spring session

300076.2	Microprocessor Systems
300057.2	Signals and Systems
300481.1	Engineering Electromagnetics
300052.1	Power and Machines

Year 3

Autumn session

300007.1	Communication Systems
300069.2	Digital Signal Processing
300071.1	Electrical Machines 1

300009.2 Control Systems**Spring session**

- 300026.2** Energy Systems
300053.2 Professional Practice
300070.3 Electrical Drives

And one elective

Industrial Experience:

- 300741.1** Industrial Experience (Engineering)

Year 4 (Non-honours stream)**Autumn session**

- 300483.2** Engineering Project
300075.3 Instrumentation and Measurement

Choose one of

- 300019.3** Digital Systems 2
300024.1 Electronic Systems Design

And one elective

Spring session

- 300483.2** Engineering Project

Choose one of

- 300370.1** Digital Control Systems
300010.2 Data Networks

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**

- 300675.1** Honours Thesis
300075.3 Instrumentation and Measurement

And one elective

Spring session

- 300675.1** Honours Thesis

And two electives

Full-time - Spring intake**Year 1****Spring intake**

- 200237.2** Mathematics for Engineers 1
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Autumn session

- 200238.1** Mathematics for Engineers 2
300464.1 Physics and Materials
300027.1 Engineering Computing
300005.1 Circuit Theory

Year 2**Spring session**

- 200242.2** Mathematics for Engineers 3
300057.2 Signals and Systems
300481.1 Engineering Electromagnetics
300052.1 Power and Machines

Autumn session

- 300018.1** Digital Systems 1
300674.1 Engineering, Design and Construction Practice
300025.2 Electronics

And one elective

Year 3**Spring session**

- 300026.2** Energy Systems
300053.2 Professional Practice
300076.2 Microprocessor Systems

And one elective

Autumn session

- 300007.1** Communication Systems
300069.2 Digital Signal Processing
300071.1 Electrical Machines 1
300009.2 Control Systems

Industrial Experience

- 300741.1** Industrial Experience (Engineering)

Year 4 (Non-Honours stream)**Spring session**

- 300483.2** Engineering Project
300070.3 Electrical Drives

Choose one of

- 300370.1** Digital Control Systems
300010.2 Data Networks

And one elective

Autumn session

- 300483.2** Engineering Project
300075.3 Instrumentation and Measurement

Choose one of:

- 300019.3** Digital Systems 2
300024.1 Electronic Systems Design

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

300675.1 Honours Thesis
300070.3 Electrical Drives

And one elective

Autumn session

300675.1 Honours Thesis
300075.3 Instrumentation and Measurement

And one elective

Key Program - Telecommunications

KT3034.1

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Professional Accreditation

This Key Program has received full accreditation from Engineers Australia at the level of Professional Engineer.

Full-time - Autumn intake

Year 2

Autumn session

200242.2 Mathematics for Engineers 3
300018.1 Digital Systems 1
300005.1 Circuit Theory
300025.2 Electronics

Spring session

300076.2 Microprocessor Systems
300057.2 Signals and Systems

300481.1 Engineering Electromagnetics
300052.1 Power and Machines

Year 3

Autumn session

300007.1 Communication Systems
300069.2 Digital Signal Processing
300167.2 Systems Programming 1
300029.2 Engineering Visualization

Spring session

300065.3 Wireless Communications
300053.2 Professional Practice
300010.2 Data Networks

And one elective

Industrial Experience:

300741.1 Industrial Experience (Engineering)

Year 4 (Non-honours stream)

Autumn session

300483.2 Engineering Project

Choose one of

300075.3 Instrumentation and Measurement
300009.2 Control Systems

Choose one of

300019.3 Digital Systems 2
300046.1 Multimedia Signal Processing

And one elective

Spring session

300483.2 Engineering Project

Choose one of

300068.2 Communication Electronics
300489.1 Radio and Satellite Communication

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

300675.1 Honours Thesis

And two electives

Spring session

300675.1 Honours Thesis

Choose one of

300068.2 Communication Electronics
300489.1 Radio and Satellite Communication

And one elective

Full-time - Spring intake

Year 1

Spring intake

200237.2 Mathematics for Engineers 1
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Autumn session

200238.1 Mathematics for Engineers 2
300464.1 Physics and Materials
300027.1 Engineering Computing
300005.1 Circuit Theory

Year 2

Spring session

200242.2 Mathematics for Engineers 3
300057.2 Signals and Systems
300481.1 Engineering Electromagnetics
300052.1 Power and Machines

Autumn session

300018.1 Digital Systems 1
300674.1 Engineering, Design and Construction Practice
300025.2 Electronics

And one elective

Year 3

Spring session

300053.2 Professional Practice
300010.2 Data Networks
300076.2 Microprocessor Systems

And one elective

Autumn session

300007.1 Communication Systems
300069.2 Digital Signal Processing
300167.2 Systems Programming 1
300029.2 Engineering Visualization

Industrial Experience:

300741.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Spring session

300483.2 Engineering Project
300065.3 Wireless Communications

Choose one of

300068.2 Communication Electronics
300489.1 Radio and Satellite Communication

And one elective

Autumn session

300483.2 Engineering Project

Choose one of

300075.3 Instrumentation and Measurement
300009.2 Control Systems

Choose one of

300019.3 Digital Systems 2
300046.1 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)

Spring session

300675.1 Honours Thesis
300065.3 Wireless Communications

Choose one of

300068.2 Communication Electronics
300489.1 Radio and Satellite Communication

Autumn session

300675.1 Honours Thesis

And two electives

Key Program - Construction

KT3037.1

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, 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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Full-time

Year 1

Autumn session

200237.2	Mathematics for Engineers 1
300464.1	Physics and Materials
300027.1	Engineering Computing
300674.1	Engineering, Design and Construction Practice

Spring session

200238.1	Mathematics for Engineers 2
300463.1	Fundamentals of Mechanics
300021.1	Electrical Fundamentals
300462.1	Engineering and Design Concepts

Year 2

Autumn session

300731.1	Soil Engineering
300040.1	Mechanics of Materials
200486.1	Quantity Surveying 1
300482.1	Engineering Geology and Concrete Materials

Spring session

300733.1	Introduction to Structural Engineering
MG102A.2	Management Foundations
300738.1	Surveying for Engineers
200468.1	Estimating 1

Year 3

Autumn session

300732.1	Structural Analysis
300488.2	Numerical Methods in Engineering
300728.1	Construction Planning
300666.1	Advanced Engineering Topic 1

Spring session

300053.2	Professional Practice
300730.1	Steel Structures
300736.1	Concrete Structures (UG)
300485.1	Foundation Engineering

Industrial experience

300741.1	Industrial Experience (Engineering)
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Honours Stream

Refer to the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

Year 4 (Honours stream)

Autumn session

300668.1	Advanced Engineering Thesis
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300727.1	Project Management
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Spring session

300668.1	Advanced Engineering Thesis
300667.1	Advanced Engineering Topic 2

Key Program - Electrical

KT3038.1

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Professional Accreditation

This Key Program has received full accreditation from Engineers Australia at the level of Professional Engineer

Full-time

Year 1

Autumn session

200237.2	Mathematics for Engineers 1
300464.1	Physics and Materials
300027.1	Engineering Computing
300674.1	Engineering, Design and Construction Practice

Spring session

200238.1	Mathematics for Engineers 2
300463.1	Fundamentals of Mechanics
300021.1	Electrical Fundamentals
300462.1	Engineering and Design Concepts

Year 2

Autumn session

200242.2	Mathematics for Engineers 3
300018.1	Digital Systems 1
300005.1	Circuit Theory
300025.2	Electronics

Spring session

300076.2	Microprocessor Systems
300057.2	Signals and Systems
300481.1	Engineering Electromagnetics
300052.1	Power and Machines

Year 3**Autumn session**

300007.1	Communication Systems
300069.2	Digital Signal Processing
300071.1	Electrical Machines 1
300009.2	Control Systems

Spring session

300026.2	Energy Systems
300053.2	Professional Practice
300070.3	Electrical Drives
300666.1	Advanced Engineering Topic 1

Industrial experience

300741.1	Industrial Experience (Engineering)
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Honours Stream

Refer to the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

Year 4 (Honours stream)**Autumn session**

300668.1	Advanced Engineering Thesis
300075.3	Instrumentation and Measurement

Spring session

300668.1	Advanced Engineering Thesis
300667.1	Advanced Engineering Topic 2

Key Program - Telecommunications**KT3041.1**

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure**Professional Accreditation**

This Key Program has received full accreditation from Engineers Australia at the level of Professional Engineer

Full-time**Year 1****Autumn session**

200237.2	Mathematics for Engineers 1
300464.1	Physics and Materials
300027.1	Engineering Computing
300674.1	Engineering, Design and Construction Practice

Spring session

200238.1	Mathematics for Engineers 2
300463.1	Fundamentals of Mechanics
300021.1	Electrical Fundamentals
300462.1	Engineering and Design Concepts

Year 2**Autumn session**

200242.2	Mathematics for Engineers 3
300018.1	Digital Systems 1
300005.1	Circuit Theory
300025.2	Electronics

Spring session

300076.2	Microprocessor Systems
300057.2	Signals and Systems
300481.1	Engineering Electromagnetics
300052.1	Power and Machines

Year 3**Autumn session**

300007.1	Communication Systems
300069.2	Digital Signal Processing
300167.2	Systems Programming 1
300029.2	Engineering Visualization

Spring session

300065.3	Wireless Communications
300053.2	Professional Practice
300010.2	Data Networks
300666.1	Advanced Engineering Topic 1

Industrial experience

300741.1	Industrial Experience (Engineering)
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Honours Stream

Refer to the Honours in Bachelors Awards Policy and associated College Guidelines for the admission criteria.

Year 4 (Honours stream)**Autumn session**

- 300668.1** Advanced Engineering Thesis
300667.1 Advanced Engineering Topic 2

Spring session

- 300668.1** Advanced Engineering Thesis

Choose one of

- 300068.2** Communication Electronics
300489.1 Radio and Satellite Communication

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure**Full-time - Autumn Intake****Year 2****Autumn session**

- 300282.1** Industrial Graphics 2: Transition
300035.2 Kinematics and Kinetics of Machines
300040.1 Mechanics of Materials
300762.1 Fluid Mechanics

Spring session

- 300044.1** Microcontrollers and PLCs
300480.1 Dynamics of Mechanical Systems
300735.1 Automated Manufacturing

Choose one of

- 300760.1** Thermodynamics and Heat Transfer
300761.1 Advanced Mechanics of Materials

Year 3**Autumn session**

Choose one of

- 300056.2** Robotics
300043.2 Mobile Robotics

Choose one of

- 300763.1** Advanced Dynamics
300759.1 Thermal and Fluid Engineering

And two electives

Spring session

- 300053.2** Professional Practice

Choose one of

- 300764.1** Mechanical Design
300487.1 Mechatronic Design

Choose one of

- 300760.1** Thermodynamics and Heat Transfer
300761.1 Advanced Mechanics of Materials

And one elective

Industrial Experience

- 300741.1** Industrial Experience (Engineering)

Year 4 (Non-Honours stream)**Autumn session**

- 300483.2** Engineering Project
300025.2 Electronics

Choose one of

- 300056.2** Robotics
300043.2 Mobile Robotics

Choose one of

- 300763.1** Advanced Dynamics
300759.1 Thermal and Fluid Engineering

Spring session

- 300483.2** Engineering Project
300304.2 Sustainable Design: Materials Technology

Choose one of

- 300487.1** Mechatronic Design
300764.1 Mechanical Design

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**

300675.1 Honours Thesis

Choose one of

300056.2 Robotics
300043.2 Mobile Robotics

Choose one of

300763.1 Advanced Dynamics
300759.1 Thermal and Fluid Engineering**Spring session**

300675.1 Honours Thesis

Choose one of

300764.1 Mechanical Design
300487.1 Mechatronic Design

And one elective

Full-time - Spring Intake**Year 1****Spring session**200237.2 Mathematics for Engineers 1
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts**Autumn session**200238.1 Mathematics for Engineers 2
300464.1 Physics and Materials
300040.1 Mechanics of Materials
300762.1 Fluid Mechanics**Year 2****Spring session**300735.1 Automated Manufacturing
300044.1 Microcontrollers and PLCs

Choose one of

300760.1 Thermodynamics and Heat Transfer
300761.1 Advanced Mechanics of Materials

And one elective

Autumn session300282.1 Industrial Graphics 2: Transition
300027.1 Engineering Computing
300674.1 Engineering, Design and Construction Practice
300035.2 Kinematics and Kinetics of Machines**Year 3****Spring session**300053.2 Professional Practice
300480.1 Dynamics of Mechanical Systems

Choose one of

300764.1 Mechanical Design
300487.1 Mechatronic Design

Choose one of

300760.1 Thermodynamics and Heat Transfer
300761.1 Advanced Mechanics of Materials**Autumn session**

Choose one of

300056.2 Robotics
300043.2 Mobile Robotics

Choose one of

300763.1 Advanced Dynamics
300759.1 Thermal and Fluid Engineering

And two electives

Industrial Experience

300741.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)**Spring session**300483.2 Engineering Project
300304.2 Sustainable Design: Materials Technology

Choose one of

300764.1 Mechanical Design
300487.1 Mechatronic Design

And one elective

Autumn session300483.2 Engineering Project
300025.2 Electronics

Choose one of

300056.2 Robotics
300043.2 Mobile Robotics

Choose one of

300763.1 Advanced Dynamics
300759.1 Thermal and Fluid 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)**Spring session**

300675.1 Honours Thesis

Choose one of

300764.1 Mechanical Design
300487.1 Mechatronics Design

And one elective

Autumn session

300675.1 Honours Thesis

Choose one of

300056.2 Robotics
300043.2 Mobile Robotics

Choose one of

300763.1 Advanced Dynamics
300759.1 Thermal and Fluid Engineering

Although students may choose any unit offered by the University as an elective, students are strongly recommended to choose their electives from the following list.

300725.1 Construction Technology 6 (Services)
300733.1 Introduction to Structural Engineering
300052.1 Power and Machines
300005.1 Circuit Theory
300071.1 Electrical Machines 1
300075.3 Instrumentation and Measurement
300732.1 Structural Analysis

Students are recommended to consider the Structural Engineering Sub-Major.

Key Program - Civil

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Full-time - Autumn Intake

Year 2

Autumn session

300731.1 Soil Engineering
300040.1 Mechanics of Materials
300482.1 Engineering Geology and Concrete Materials
300762.1 Fluid Mechanics

Spring session

300733.1 Introduction to Structural Engineering
MG102A.2 Management Foundations
300738.1 Surveying for Engineers
300765.1 Hydraulics

Year 3

Autumn session

300732.1 Structural Analysis
300486.1 Infrastructure Engineering
300488.2 Numerical Methods in Engineering
300766.1 Hydrology

Spring session

300053.2 Professional Practice
300730.1 Steel Structures
300736.1 Concrete Structures (UG)
300485.1 Foundation Engineering

Industrial Experience

300741.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Autumn session

300483.2 Engineering Project
300739.1 Timber Structures (UG)

And two electives

Spring session

300483.2 Engineering Project
300737.1 Environmental Engineering

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

300675.1 Honours Thesis

And two electives

Spring session

300675.1 Honours Thesis

And two electives

Full-time - Spring Intake

Year 1

Spring session

200237.2 Mathematics for Engineers 1

300463.1 Fundamentals of Mechanics
 300021.1 Electrical Fundamentals
 300462.1 Engineering and Design Concepts

Autumn session

200238.1 Mathematics for Engineers 2
 300464.1 Physics and Materials
 300040.1 Mechanics of Materials
 300762.1 Fluid Mechanics

Year 2**Spring session**

300733.1 Introduction to Structural Engineering
 300765.1 Hydraulics
 300738.1 Surveying for Engineers
 300737.1 Environmental Engineering

Autumn session

300731.1 Soil Engineering
 300027.1 Engineering Computing
 300674.1 Engineering, Design and Construction Practice
 300482.1 Engineering Geology and Concrete Materials

Year 3**Spring session**

300053.2 Professional Practice
 300730.1 Steel Structures
 300736.1 Concrete Structures (UG)
 300485.1 Foundation Engineering

Autumn session

300732.1 Structural Analysis
 300486.1 Infrastructure Engineering
 300766.1 Hydrology
 300488.2 Numerical Methods in Engineering

Industrial Experience

300741.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)**Spring session**

300483.2 Engineering Project

And three electives

Autumn session

300483.2 Engineering Project
 MG102A.2 Management Foundations
 300739.1 Timber Structures (UG)

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**

300675.1 Honours Thesis

And two electives

Autumn session

300675.1 Honours Thesis

And two electives

Key Program - Environmental**KT3044.1**

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure**Full-time - Autumn intake****Year 2****Autumn session**

300731.1 Soil Engineering
 300040.1 Mechanics of Materials
 300762.1 Fluid Mechanics
 300469.2 Introductory Chemistry

Spring session

300733.1 Introduction to Structural Engineering
 300738.1 Surveying for Engineers
 300663.1 Resource Sustainability
 300765.1 Hydraulics

Year 3**Autumn session**

300633.1 Management of Aquatic Environments
 300482.1 Engineering Geology and Concrete Materials
 300486.1 Infrastructure Engineering
 300766.1 Hydrology

Spring session

300737.1 Environmental Engineering

MG102A.2 Management Foundations
300053.2 Professional Practice
300628.1 Air Quality Management

Industrial Experience

300741.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Autumn session

300483.2 Engineering Project
MG309A.1 Water and Waste Management
300488.2 Numerical Methods in Engineering

And one elective

Spring session

300483.2 Engineering Project

And three 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

300675.1 Honours Thesis

And two electives

Spring session

300675.1 Honours Thesis

And two electives

Full-time - Spring Intake

Year 1

Spring session

200237.2 Mathematics for Engineers 1
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Autumn session

200238.1 Mathematics for Engineers 2
300464.1 Physics and Materials
300040.1 Mechanics of Materials
300762.1 Fluid Mechanics

Year 2

Spring session

300733.1 Introduction to Structural Engineering
300738.1 Surveying for Engineers
300663.1 Resource Sustainability
300765.1 Hydraulics

Autumn session

300731.1 Soil Engineering
300027.1 Engineering Computing
300674.1 Engineering, Design and Construction Practice
300469.2 Introductory Chemistry

Year 3

Spring session

300737.1 Environmental Engineering
MG102A.2 Management Foundations
300053.2 Professional Practice
300628.1 Air Quality Management

Autumn session

300633.1 Management of Aquatic Environments
300482.1 Engineering Geology and Concrete Materials
300486.1 Infrastructure Engineering
300766.1 Hydrology

Industrial Experience

300741.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Spring session

300483.2 Engineering Project

And three electives

Autumn session

300483.2 Engineering Project
MG309A.1 Water and Waste Management
300488.2 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)

300675.1 Honours Thesis

And two electives

Autumn session

300675.1 Honours Thesis

And two electives

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Full-time - Autumn intake

Year 2

Autumn session

300025.2	Electronics
300035.2	Kinematics and Kinetics of Machines
300040.1	Mechanics of Materials
300005.1	Circuit Theory

Spring session

300044.1	Microcontrollers and PLCs
300480.1	Dynamics of Mechanical Systems
300735.1	Automated Manufacturing
300052.1	Power and Machines

Year 3

Autumn session

300071.1	Electrical Machines 1
300018.1	Digital Systems 1

Choose one of

300056.2	Robotics
300043.2	Mobile Robotics

Choose one of

300763.1	Advanced Dynamics
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Or Elective

Spring session

300053.2 Professional Practice

Choose one of

300487.1	Mechatronic Design
300764.1	Mechanical Design

And two electives

Industrial Experience:

300741.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Autumn session

300483.2	Engineering Project
300075.3	Instrumentation and Measurement

Choose one of

300056.2	Robotics
300043.2	Mobile Robotics

Choose one of

300763.1	Advanced Dynamics
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Or Elective

Spring session

300483.2	Engineering Project
300304.2	Sustainable Design: Materials Technology

Choose one of

300764.1	Mechanical Design
300487.1	Mechatronic Design

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

300675.1 Honours Thesis

Choose one of

300056.2	Robotics
300043.2	Mobile Robotics

Choose one of

300763.1	Advanced Dynamics
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Or Elective

Spring session

300675.1 Honours Thesis

Choose one of

300764.1	Mechanical Design
300487.1	Mechatronic Design

And one elective

Full-time - Spring Intake

Year 1

Spring session

200237.2	Mathematics for Engineers 1
300463.1	Fundamentals of Mechanics
300021.1	Electrical Fundamentals
300462.1	Engineering and Design Concepts

Autumn session

200238.1	Mathematics for Engineers 2
300464.1	Physics and Materials
300040.1	Mechanics of Materials
300005.1	Circuit Theory

Year 2

Spring session

300735.1	Automated Manufacturing
300044.1	Microcontrollers and PLCs
300052.1	Power and Machines

And one elective

Autumn session

300025.2	Electronics
300027.1	Engineering Computing
300674.1	Engineering, Design and Construction Practice
300035.2	Kinematics and Kinetics of Machines

Year 3

Spring session

300053.2	Professional Practice
300480.1	Dynamics of Mechanical Systems

Choose one of

300764.1	Mechanical Design
300487.1	Mechatronic Design

And one elective

Autumn session

300071.1	Electrical Machines 1
300018.1	Digital Systems 1

Choose one of

300056.2	Robotics
300043.2	Mobile Robotics

Choose one of

300763.1	Advanced Dynamics
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Or Elective

Industrial Experience

300741.1	Industrial Experience (Engineering)
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Year 4 (Non-Honours stream)

Spring session

300483.2	Engineering Project
300304.2	Sustainable Design: Materials Technology

Choose one of

300764.1	Mechanical Design
300487.1	Mechatronic Design

And one elective

Autumn session

300483.2	Engineering Project
300075.3	Instrumentation and Measurement

Choose one of

300056.2	Robotics
300043.2	Mobile Robotics

Choose one of

300763.1	Advanced Dynamics
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Or 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

300675.1	Honours Thesis
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Choose one of

300764.1	Mechanical Design
300487.1	Mechatronic Design

And one elective

Autumn session

300675.1	Honours Thesis
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Choose one of

300056.2	Robotics
300043.2	Mobile Robotics

Choose one of

300763.1	Advanced Dynamics
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Or Elective

Although students may choose any unit offered by the University as an elective, students are strongly recommended to choose their electives from the following:

300761.1	Advanced Mechanics of Materials
300762.1	Fluid Mechanics
300760.1	Thermodynamics and Heat Transfer
300759.1	Thermal and Fluid Engineering

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Full-time - Autumn session

Year 2

Autumn session

200242.2	Mathematics for Engineers 3
300018.1	Digital Systems 1
300005.1	Circuit Theory
300025.2	Electronics

Spring session

300076.2	Microprocessor Systems
300057.2	Signals and Systems
300096.4	Computer Organisation
300052.1	Power and Machines

Year 3

Autumn session

300167.2	Systems Programming 1
300069.2	Digital Signal Processing
300075.3	Instrumentation and Measurement
300009.2	Control Systems

Spring session

300149.1	Operating Systems
300053.2	Professional Practice
300010.2	Data Networks

And one elective

Industrial Experience

300741.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Autumn session

300483.2	Engineering Project
300095.2	Computer Networks and Internets

Choose one of

300019.3	Digital Systems 2
300029.2	Engineering Visualization

And one elective

Spring session

300483.2	Engineering Project
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Choose one of

300370.1	Digital Control Systems
300044.1	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)

Autumn session

300675.1	Honours Thesis
300095.2	Computer Networks and Internets

And one elective

Spring session

300675.1	Honours Thesis
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And two electives

Full-time - Spring intake

Year 1

Spring session

200237.2	Mathematics for Engineers 1
300463.1	Fundamentals of Mechanics
300021.1	Electrical Fundamentals
300462.1	Engineering and Design Concepts

Autumn session

200238.1	Mathematics for Engineers 2
300464.1	Physics and Materials
300027.1	Engineering Computing
300005.1	Circuit Theory

Year 2

Spring session

200242.2	Mathematics for Engineers 3
300057.2	Signals and Systems

300052.1 Power and Machines

And one elective

Autumn session

- 300018.1** Digital Systems 1
300674.1 Engineering, Design and Construction Practice
300025.2 Electronics

And one elective

Year 3**Spring session**

- 300096.4** Computer Organisation
300053.2 Professional Practice
300010.2 Data Networks
300076.2 Microprocessor Systems

Autumn session

- 300167.2** Systems Programming 1
300069.2 Digital Signal Processing
300075.3 Instrumentation and Measurement
300009.2 Control Systems

Industrial Experience:

- 300741.1** Industrial Experience (Engineering)

Year 4 (Non-Honours stream)**Spring session**

- 300483.2** Engineering Project
300149.1 Operating Systems

Choose one of

- 300370.1** Digital Control Systems
300044.1 Microcontrollers and PLCs

And one elective

Autumn session

- 300483.2** Engineering Project
300095.2 Computer Networks and Internets

Choose one of

- 300019.3** Digital Systems 2
300029.2 Engineering Visualization

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**

- 300675.1** Honours Thesis
300149.1 Operating Systems

And one elective

Autumn session

- 300675.1** Honours Thesis
300095.2 Computer Networks and Internets

One elective

Key Program - Mechanical**KT3047.1**

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. Skills gained are required in industries such as manufacturing, materials handling, automobile, aerospace, mining, building services and infrastructure development.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure**Full-time****Year 1****Autumn session**

- 200237.2** Mathematics for Engineers 1
300464.1 Physics and Materials
300027.1 Engineering Computing
300674.1 Engineering, Design and Construction Practice

Spring session

- 200238.1** Mathematics for Engineers 2
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Year 2**Autumn session**

- 300040.1** Mechanics of Materials
300035.2 Kinematics and Kinetics of Machines
300762.1 Fluid Mechanics

Choose one of

- 300056.2** Robotics
300043.2 Mobile Robotics

Spring session

- 300735.1** Automated Manufacturing
300480.1 Dynamics of Mechanical Systems

Choose one of

- 300487.1** Mechatronic Design
300764.1 Mechanical Design

Choose one of

- 300760.1** Thermodynamics and Heat Transfer
300761.1 Advanced Mechanics of Materials

Year 3**Autumn session**

- 300282.1** Industrial Graphics 2: Transition
300666.1 Advanced Engineering Topic 1

Choose one of

- 300056.2** Robotics
300043.2 Mobile Robotics

Choose one of

- 300763.1** Advanced Dynamics
300759.1 Thermal and Fluid Engineering

Spring session

- 300053.2** Professional Practice
300044.1 Microcontrollers and PLCs

Choose one of

- 300487.1** Mechatronic Design
300764.1 Mechanical Design

Choose one of

- 300760.1** Thermodynamics and Heat Transfer
300761.1 Advanced Mechanics of Materials

Industrial experience

- 300741.1** Industrial Experience (Engineering)

Year 4 (Honours stream)**Autumn session**

- 300668.1** Advanced Engineering Thesis

Choose one of

- 300763.1** Advanced Dynamics
300759.1 Thermal and Fluid Engineering

Spring session

- 300668.1** Advanced Engineering Thesis
300667.1 Advanced Engineering Topic 2

Key Program - Civil**KT3048.1**

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure**Full-time****Year 1****Autumn session**

- 200237.2** Mathematics for Engineers 1
300464.1 Physics and Materials
300027.1 Engineering Computing
300674.1 Engineering, Design and Construction Practice

Spring session

- 200238.1** Mathematics for Engineers 2
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Year 2**Autumn session**

- 300731.1** Soil Engineering
300040.1 Mechanics of Materials
300482.1 Engineering Geology and Concrete Materials
300762.1 Fluid Mechanics

Spring session

- 300733.1** Introduction to Structural Engineering
300738.1 Surveying for Engineers
300737.1 Environmental Engineering
300765.1 Hydraulics

Year 3**Autumn session**

- 300732.1** Structural Analysis
300488.2 Numerical Methods in Engineering
300666.1 Advanced Engineering Topic 1

Choose one of

300486.1 Infrastructure Engineering
300766.1 Hydrology

Spring session

300053.2 Professional Practice
300730.1 Steel Structures
300736.1 Concrete Structures (UG)
300485.1 Foundation Engineering

Industrial experience:

300741.1 Industrial Experience (Engineering)

Year 4 (Honours stream)**Autumn session**

300668.1 Advanced Engineering Thesis

Choose one of

300739.1 Timber Structures (UG)
MG102A.2 Management Foundations

Spring session

300668.1 Advanced Engineering Thesis
300667.1 Advanced Engineering Topic 2

Key Program - Environmental**KT3049.1**

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure**Full-time****Year 1****Autumn session**

200237.2 Mathematics for Engineers 1
300464.1 Physics and Materials
300027.1 Engineering Computing
300674.1 Engineering, Design and Construction Practice

Spring session

200238.1 Mathematics for Engineers 2
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Year 2**Autumn session**

300731.1 Soil Engineering
300040.1 Mechanics of Materials
300469.2 Introductory Chemistry
300762.1 Fluid Mechanics

Spring session

300733.1 Introduction to Structural Engineering
300738.1 Surveying for Engineers
300663.1 Resource Sustainability
300765.1 Hydraulics

Year 3**Autumn session**

300633.1 Management of Aquatic Environments
300482.1 Engineering Geology and Concrete Materials
MG309A.1 Water and Waste Management
300766.1 Hydrology

Spring session

300737.1 Environmental Engineering
300666.1 Advanced Engineering Topic 1
300053.2 Professional Practice
300628.1 Air Quality Management

Industrial experience

300741.1 Industrial Experience (Engineering)

Year 4 (Honours stream)**Autumn session**

300668.1 Advanced Engineering Thesis
300488.2 Numerical Methods in Engineering

Spring session

300668.1 Advanced Engineering Thesis
300667.1 Advanced Engineering Topic 2

Key Program - Robotics and Mechatronics**KT3050.1**

An intensive hands-on laboratory program is an essential part of the course. Mechatronics provides skills necessary for the design of smart machines of all types: from cruise control in automobiles to pilotless spacecraft, from automated factories to medical telerobotics. It is especially

concerned with design of intelligent mechanical systems. Examples include design and development of automated machinery and their control; design of mechanical equipment and integrated systems; and marketing and management activities. Skills gained are required in all sections of industry, including manufacturing, packaging, materials handling, aerospace and mining.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Full-time

Year 1

Autumn session

200237.2	Mathematics for Engineers 1
300464.1	Physics and Materials
300027.1	Engineering Computing
300674.1	Engineering, Design and Construction Practice

Spring session

200238.1	Mathematics for Engineers 2
300463.1	Fundamentals of Mechanics
300021.1	Electrical Fundamentals
300462.1	Engineering and Design Concepts

Year 2

Autumn session

300040.1	Mechanics of Materials
300035.2	Kinematics and Kinetics of Machines
300005.1	Circuit Theory

Choose one of

300056.2	Robotics
300043.2	Mobile Robotics

Spring session

300735.1	Automated Manufacturing
300480.1	Dynamics of Mechanical Systems
300052.1	Power and Machines

Choose one of

300487.1	Mechatronic Design
300764.1	Mechanical Design

Year 3

Autumn session

300018.1	Digital Systems 1
300025.2	Electronics

Choose one of

300056.2	Robotics
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300043.2 Mobile Robotics

Choose one of

300071.1	Electrical Machines 1
300763.1	Advanced Dynamics

Spring session

300053.2	Professional Practice
300044.1	Microcontrollers and PLCs
300666.1	Advanced Engineering Topic 1

Choose one of

300487.1	Mechatronic Design
300764.1	Mechanical Design

Industrial experience

300741.1	Industrial Experience (Engineering)
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Year 4 (Honours stream)

Autumn session

300668.1	Advanced Engineering Thesis
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Choose one of

300071.1	Electrical Machines 1
300763.1	Advanced Dynamics

Spring session

300668.1	Advanced Engineering Thesis
300667.1	Advanced Engineering Topic 2

Key Program - Computer

KT3051.1

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure**Full-time****Year 1****Autumn session**

200237.2	Mathematics for Engineers 1
300464.1	Physics and Materials
300027.1	Engineering Computing
300674.1	Engineering, Design and Construction Practice

Spring session

200238.1	Mathematics for Engineers 2
300463.1	Fundamentals of Mechanics
300021.1	Electrical Fundamentals
300462.1	Engineering and Design Concepts

Year 2**Autumn session**

200242.2	Mathematics for Engineers 3
300018.1	Digital Systems 1
300005.1	Circuit Theory
300025.2	Electronics

Spring session

300076.2	Microprocessor Systems
300057.2	Signals and Systems
300096.4	Computer Organisation
300052.1	Power and Machines

Year 3**Autumn session**

300167.2	Systems Programming 1
300069.2	Digital Signal Processing
300075.3	Instrumentation and Measurement
300009.2	Control Systems

Spring session

300149.1	Operating Systems
300053.2	Professional Practice
300010.2	Data Networks
300666.1	Advanced Engineering Topic 1

Industrial experience:

300741.1	Industrial Experience (Engineering)
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Year 4 (Honours stream)**Autumn session**

300668.1	Advanced Engineering Thesis
300095.2	Computer Networks and Internets

Spring session

300668.1	Advanced Engineering Thesis
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300667.1 Advanced Engineering Topic 2

Key Program - Agricultural Science**KT3054.1**

This key program equips graduates with specialised knowledge and understanding of agronomy, animal science and soil science underpinned by a sound background in biology, chemistry and biometry. Graduates will understand how agriculture impacts on the structure and function of production ecosystems in the context of nutrient, water and energy flows, carbon sequestration and use of introduced and genetically modified organisms. There is an emphasis on developing field and laboratory skills related to the major study areas that will prepare students for technical, production, research or advisory careers.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Students must satisfy the overall Bachelor of Science course rules, including the following schedule of units.

Year 1**Autumn session**

300792.1	Biology A - The Diversity of Life
300224.2	Chemistry 1
300497.1	Professional Skills for Science
300502.1	Primary Production

Spring session

300793.1	Biology B - Cellular Processes
200263.2	Biometry
300421.2	Animal Science
300535.1	Soils

Year 2**Autumn session**

300300.1	Microbiology 1
300562.1	Animal Nutrition and Feeding
300524.1	Agronomy

And one elective

Spring session

300563.1	Animal Reproduction
300328.1	Botany

And two electives

Year 3**Autumn session**

300234.2	Molecular Biology
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300427.2 Animal Production
300564.2 Animal Behaviour

And one elective

Spring session

300334.1 Invertebrate Biology
300786.1 Global Nutrition Food and Community

One Level 3 elective

And one elective

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Animal Science

KT3055.1

The key program in Animal Science recognises the increased demand for knowledge of how to best care for and protect our animals, including scientific knowledge of companion animals, production animals and their products, as well as knowledge related to our native animals. This program will allow students to develop in depth scientific understanding of how animals function; from the physiology and biochemistry of tissues and major organ systems down to structure and function of biomolecules and cells. The program gives particular emphasis to the study of physiology, growth, endocrinology, reproduction, genetics, nutrition, microbial interactions and immunology. It's also concerned with how these processes may be optimised to improve animal productivity, health and welfare.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Students must satisfy the overall Bachelor of Science course rules, including the following schedule of units.

Year 1

Autumn session

300792.1 Biology A - The Diversity of Life
300560.1 Introduction to Animal Science
300426.1 Human Animal Interactions
300224.2 Chemistry 1

Spring session

300793.1 Biology B - Cellular Processes
300421.2 Animal Science
300425.2 Introduction to Wildlife Studies

200263.2 Biometry

Year 2

Autumn session

300562.1 Animal Nutrition and Feeding
300219.3 Biochemistry 1
300300.1 Microbiology 1

And one elective

Spring session

300424.1 Animal Health and Welfare
300623.2 Genetics
300220.1 Biochemistry 2

And one elective

Year 3

Autumn session

300234.2 Molecular Biology
300427.2 Animal Production

And two electives

Spring session

300470.2 Vertebrate Biodiversity

Choose one of

300408.1 Mammalian Cell Biology and Biotechnology
300407.1 Mammalian Molecular Medicine

And two electives

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Biological Science

KT3056.1

Biological Science focuses on the areas of biology that are most relevant to industry and research: biochemistry, microbiology and molecular biology. Other areas of study include anatomy and physiology, environmental science, biotechnology, human biology and plant biology.

Offer

Campus	Mode
Campbelltown Campus	Internal
Hawkesbury Campus	Internal
Parramatta Campus	Internal

Unit Set Structure

Students must satisfy the overall Bachelor of Science course rules, including the following schedule of units.

Note: Students commencing mid-year should seek academic advice about completing this Key Program; more than three years may be required for completion in some cases due to the Semester some units are offered in and the sequence in which they must be completed.

Year 1

Choose at least one mathematics or statistics unit over the year.

Autumn session**Hawkesbury Campus**

300792.1 Biology A - The Diversity of Life
300224.2 Chemistry 1

Choose at least one of

200191.3 Fundamentals of Mathematics
300558.1 Physics 1
300497.1 Professional Skills for Science
300661.1 Integrated Science 1

And one elective

Parramatta Campus

300792.1 Biology A - The Diversity of Life
300224.2 Chemistry 1

Choose at least one of

200191.3 Fundamentals of Mathematics
300558.1 Physics 1
300672.1 Mathematics 1A
300232.1 Introduction to Earth Sciences
300661.1 Integrated Science 1
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals

And one elective

Campbelltown Campus

300539.1 Biodiversity
300554.1 Principles of Chemistry

Choose at least one of

200191.3 Fundamentals of Mathematics
300672.1 Mathematics 1A
300558.1 Physics 1
300661.1 Integrated Science 1
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals

And one elective

Spring session**Hawkesbury Campus**

300793.1 Biology B - Cellular Processes
300225.2 Chemistry 2

Choose at least one of

200263.2 Biometry
300661.1 Integrated Science 1
300134.1 Introduction to Information Technology

And one elective

Parramatta Campus

300793.1 Biology B - Cellular Processes
300225.2 Chemistry 2

Choose at least one of

200263.2 Biometry
300672.1 Mathematics 1A
300559.1 Physics 2
300613.1 Introductory Geochemistry: Earth, Resources and Environments
300661.1 Integrated Science 1
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals

And one elective

Campbelltown Campus

300543.1 Cell Biology
300550.1 Medicinal Chemistry

Choose at least one of

300559.1 Physics 2
300753.1 Introduction to Human Physiology
300661.1 Integrated Science 1
200025.1 Discrete Mathematics
300700.3 Statistical Decision Making
300673.1 Mathematics 1B
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals

And one elective

Year 2**Autumn session****Hawkesbury Campus**

300219.3 Biochemistry 1
300300.1 Microbiology 1

Choose at least one of

300609.1 Plant Physiology
300634.1 Ecology

And one elective

Parramatta Campus

300219.3 Biochemistry 1
300300.1 Microbiology 1
300609.1 Plant Physiology

And one elective

Campbelltown Campus

300555.1 Proteins and Genes
300300.1 Microbiology 1
300547.1 Human Genetics

And one elective

Spring session

Hawkesbury Campus

300220.1 Biochemistry 2
300321.1 Microbiology 2

Choose at least one of

300623.2 Genetics
300328.1 Botany

And one elective

Parramatta Campus

300220.1 Biochemistry 2
300321.1 Microbiology 2
300608.1 Animal Physiology

And one elective

Campbelltown campus

300548.1 Human Metabolism and Disease
300321.1 Microbiology 2

Choose at least one of

300553.1 Molecules of Life: Synthesis and Reactivity
300505.1 Pharmacology

And one elective

Year 3

Autumn session

Hawkesbury Campus

Choose two of

300234.2 Molecular Biology
300307.1 Analytical Microbiology
300617.2 Conservation Biology
300787.1 Plant Microbiology and Protection

And two electives

Parramatta Campus

Choose two of

300234.2 Molecular Biology
300229.2 Immunology
300617.2 Conservation Biology

And two electives

Campbelltown Campus

Choose two of

300556.1 Analytical Protein Science
300544.1 Cell Signalling
300549.1 Human Molecular Biology

And two electives

Spring session

Hawkesbury Campus

Choose two of

300465.1 Aquatic Ecology
300647.1 Environmental Biotechnology
300407.1 Mammalian Molecular Medicine
300408.1 Mammalian Cell Biology and Biotechnology
300470.2 Vertebrate Biodiversity
300749.1 Medical Microbiology
300334.1 Invertebrate Biology
300645.1 Science Research Project 2
300656.1 Laboratory Quality Management

And two electives

Parramatta Campus

Choose two of

300645.1 Science Research Project 2
300749.1 Medical Microbiology
300647.1 Environmental Biotechnology

And two electives

Campbelltown Campus

Choose two of

300757.1 Molecular Biology of the Immune System
300749.1 Medical Microbiology
300542.1 Biomolecular Science Project

And two electives

Note: Two of the four electives in Year 3 must be at Level 3

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Chemistry

KT3057.1

The Chemistry key program consists of core studies in analytical, inorganic, organic and physical chemistry. A major in geochemistry will prepare you for a career in the minerals and mining industries. A sub-major in biochemistry or microbiology will prepare you for a career in the pharmaceutical, health or food industries.

Offer

Campus	Mode
Campbelltown Campus	Internal
Parramatta Campus	Internal

Unit Set Structure**Professional Accreditation**

The Bachelor of Science (Chemistry) is accredited by The Royal Australian Chemical Institute Incorporated.

Students must satisfy the overall Bachelor of Science course rules, including the following schedule of units.

Year 1**Autumn session****Parramatta Campus**

300224.2 Chemistry 1
300558.1 Physics 1

Choose one of

300792.1 Biology A - The Diversity of Life
300232.1 Introduction to Earth Sciences
300661.1 Integrated Science 1

Choose one of

200191.3 Fundamentals of Mathematics
300672.1 Mathematics 1A

Campbelltown Campus

300554.1 Principles of Chemistry
300558.1 Physics 1

Choose one of

200191.3 Fundamentals of Mathematics
300672.1 Mathematics 1A

Choose one of

300539.1 Biodiversity
300661.1 Integrated Science 1
300134.1 Introduction to Information Technology

Spring session**Parramatta Campus**

300225.2 Chemistry 2

Choose two of

300661.1 Integrated Science 1
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals
300613.1 Introductory Geochemistry: Earth, Resources and Environments
300559.1 Physics 2
300793.1 Biology B - Cellular Processes
200263.2 Biometry
300672.1 Mathematics 1A
300673.1 Mathematics 1B

And one elective

Campbelltown Campus

300550.1 Medicinal Chemistry

Choose two of

300661.1 Integrated Science 1
300543.1 Cell Biology
300753.1 Introduction to Human Physiology
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals
300559.1 Physics 2
300700.3 Statistical Decision Making
300673.1 Mathematics 1B

And one elective

Year 2**Autumn session****Parramatta Campus**

300297.1 Analytical Chemistry 2
300301.1 Organic Chemistry 2

Choose one of

300219.3 Biochemistry 1
300611.2 Chemical Mineralogy
300300.1 Microbiology 1
300609.1 Plant Physiology
200033.3 Applied Statistics
200042.2 Introduction to Operations Research

And one elective

Campbelltown Campus

300545.1 Coordination Chemistry
300540.1 Biomolecular Dynamics

Choose one of

300555.1 Proteins and Genes
300300.1 Microbiology 1
300547.1 Human Genetics
300413.1 Applied Instrumentation in Nanotechnology
200028.2 Advanced Calculus
200030.1 Differential Equations
200027.1 Linear Algebra

And one elective

Spring session**Parramatta Campus**

300230.1 Inorganic Chemistry 2
300236.1 Physical Chemistry 2

Choose one of

300220.1 Biochemistry 2
300612.1 Geochemical Systems
300321.1 Microbiology 2
300608.1 Animal Physiology
200028.2 Advanced Calculus
200030.1 Differential Equations
200027.1 Linear Algebra

And one elective

Campbelltown Campus

300297.1 Analytical Chemistry 2
300553.1 Molecules of Life: Synthesis and Reactivity

Choose one of

- 300548.1** Human Metabolism and Disease
- 300321.1** Microbiology 2
- 300590.1** Nanochemistry
- 200033.3** Applied Statistics
- 300606.1** Foundations of Statistical Modelling and Decision Making

And one elective

Year 3

Autumn session

Parramatta Campus

- 300298.1** Analytical Chemistry 3
- 300235.1** Organic Chemistry 3

And two electives

Cambelltown Campus

Choose two of

- 300537.1** Advanced Chemical Analysis
- 300546.1** Drug Design and Synthesis

And two electives

Spring session

Parramatta Campus

- 300231.1** Inorganic Chemistry 3
- 300303.1** Physical Chemistry 3

Choose one of

- 300645.1** Science Research Project 2
- 300656.1** Laboratory Quality Management

And one elective

Campbelltown Campus

Choose three of

- 300538.1** Advanced Inorganic Chemistry
- 300324.1** Pharmacological Chemistry
- 300475.1** Molecular Pharmacokinetics
- 300542.1** Biomolecular Science Project

And one elective

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Climate Change

KT3058.1

This program equips people to work in the emerging and challenging area of climate change. A solid grounding in the underlying science is essential for people intending to work in this field, who will need to integrate across a range of disciplines, to devise solutions spanning the scientific and social issues involved. This program will equip you with the background in science that will allow you to understand the forces that drive climate, how these forces are changing, how to critically assess evidence of climate change, how greenhouse gases move in ecosystems, and how both emissions and uptake of greenhouse gases can be measured. Other parts of the program will address the social issues of abatement and mitigation.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Students must satisfy the overall Bachelor of Science course rules, including the following schedule of units.

Year 1

Autumn session

- 300792.1** Biology A - The Diversity of Life
- 300633.1** Management of Aquatic Environments
- 300661.1** Integrated Science 1
- 300224.2** Chemistry 1

Spring session

- 300793.1** Biology B - Cellular Processes
- 300225.2** Chemistry 2
- 300663.1** Resource Sustainability
- 200263.2** Biometry

Year 2

Autumn session

- 300609.1** Plant Physiology
- 300634.1** Ecology
- 300783.1** Environmental Planning and Climate Change

And one elective

Spring session

- 300328.1** Botany
- 300535.1** Soils
- 300624.1** Landuse and the Environment

And one elective

Year 3

Autumn session

300614.1 Environmental Geochemistry
300617.2 Conservation Biology

Choose one of

300777.1 Air Quality and Climate Change
300781.1 Atmospheric Science

And one elective

Spring session

300465.1 Aquatic Ecology
300779.1 Water in the Landscape
300784.1 Environmental Regulation and Policy

And one elective

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Geochemistry

KT3059.1

This program recognises the relevance of geochemistry in our rapidly expanding mining and minerals industries, and its importance in the understanding of related environmental issues. It offers a strong grounding in key areas of geochemistry and chemistry, and emphasises the integration of theory and practical skills and their relevance to real world applications in industry, research and the environment. Students may take units from other areas of science, including majors and sub-majors, or may combine their studies with electives and sub-majors from a non-science discipline, opening up a range of alternate career directions.

Offer

Campus	Mode
Parramatta Campus	Internal

Unit Set Structure

Students must satisfy the overall Bachelor of Science course rules, including the following schedule of units.

Year 1

Autumn session

300224.2 Chemistry 1
300232.1 Introduction to Earth Sciences

Choose one of

200191.3 Fundamentals of Mathematics
300672.1 Mathematics 1A

Choose one Autumn alternate unit or one elective

Autumn alternate units

300792.1 Biology A - The Diversity of Life
300558.1 Physics 1
300661.1 Integrated Science 1
300134.1 Introduction to Information Technology
300497.1 Professional Skills for Science

Spring session

300225.2 Chemistry 2
300613.1 Introductory Geochemistry: Earth, Resources and Environments

If you have chosen one Autumn alternate unit, choose two electives in Spring. If you have chosen one elective in Autumn, choose one Spring Alternate unit and one elective.

Spring alternate units

200263.2 Biometry
300134.1 Introduction to Information Technology
300580.1 Programming Fundamentals
300793.1 Biology B - Cellular Processes
300559.1 Physics 2
300661.1 Integrated Science 1
300673.1 Mathematics 1B

Year 2

Autumn session

300611.2 Chemical Mineralogy
300297.1 Analytical Chemistry 2

Choose one of

300301.1 Organic Chemistry 2
300219.3 Biochemistry 1
300300.1 Microbiology 1
300609.1 Plant Physiology
200033.3 Applied Statistics
200030.1 Differential Equations
200042.2 Introduction to Operations Research

And one elective

Spring session

300230.1 Inorganic Chemistry 2
300612.1 Geochemical Systems

Choose one of

300608.1 Animal Physiology
300236.1 Physical Chemistry 2
300220.1 Biochemistry 2
300321.1 Microbiology 2
200028.2 Advanced Calculus
200027.1 Linear Algebra

And one elective

Year 3

Autumn session

300298.1 Analytical Chemistry 3
300614.1 Environmental Geochemistry
300218.1 Applied Aspects of Inorganic Chemistry

Choose one of

- 300235.1** Organic Chemistry 3
300303.1 Physical Chemistry 3
300617.2 Conservation Biology

Note: 300303 - Physical Chemistry 3 is only offered in Spring session. If you choose this unit in Spring session, please choose one elective in Autumn session.

Spring session

- 300231.1** Inorganic Chemistry 3
300645.1 Science Research Project 2

Note: If you choose 300235 or 300617 in Autumn session, please choose two electives in Spring session. If you choose 300303 in Spring session choose one elective in Spring session also.

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Environmental Science

KT3060.1

Environmental Science provides a strong background in key analytical techniques that have contemporary applications such as the handling and interpretation of data and the modelling of real world problems such as global warming. Students may specialise in mathematics and/or statistics as well as taking units from other science/ computing related areas or from areas such as marketing, accounting, arts and the social sciences. This will allow a wide range of career options in commercial and government institutions.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Students must satisfy the overall Bachelor of Science course rules, including the following schedule of units.

Year 1

Autumn session

- 300792.1** Biology A - The Diversity of Life
300633.1 Management of Aquatic Environments
300642.1 Understanding Landscape
300224.2 Chemistry 1

Spring session

- 300793.1** Biology B - Cellular Processes
300225.2 Chemistry 2
300663.1 Resource Sustainability
200263.2 Biometry

Year 2

Autumn session

- 300300.1** Microbiology 1
300493.1 Forensic and Environmental Analysis
300634.1 Ecology

And one elective

Spring session

- 300624.1** Landuse and the Environment
300535.1 Soils
300647.1 Environmental Biotechnology

And one elective

Year 3

Autumn session

- 300614.1** Environmental Geochemistry
300617.2 Conservation Biology

And two electives

Spring session

- 300779.1** Water in the Landscape
300465.1 Aquatic Ecology

Choose at least one of

- 300334.1** Invertebrate Biology
300470.2 Vertebrate Biodiversity

And one elective

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Food Science

KT3061.1

Food Science is about the study of food. The key program is underpinned by broad science base incorporating microbiology and chemistry, leading to specialised food topics in food processing, quality assurance, product development and packaging. The program prepares you for a wide range of careers in the food and beverage related industries, education, government research or policy; quality assurance, product development, nutrition, regulatory affairs, marketing, management and consulting. The program has strong food industry links and well-

equipped facilities, which include a food processing pilot plant, offering hands-on experience using industry standard equipment.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Students must satisfy the overall Bachelor of Science course rules, including the following schedule of units. They must also satisfactorily complete the unit 300655 - Approved Industrial Experience (10 weeks), comprising a minimum of ten weeks Approved Industrial Experience.

Year 1

Autumn session

300792.1	Biology A - The Diversity of Life
300497.1	Professional Skills for Science

Choose one of

300224.2	Chemistry 1
300469.2	Introductory Chemistry

Choose one of

300558.1	Physics 1
200191.3	Fundamentals of Mathematics

Spring session

300793.1	Biology B - Cellular Processes
300225.2	Chemistry 2
300498.1	Food Science 1
300616.1	Crop Production

Year 2

Autumn session

300300.1	Microbiology 1
300219.3	Biochemistry 1
300499.1	Food Science 2
300452.1	Postharvest

Spring session

300638.1	Experimental Foods
300639.1	Food Safety
200263.2	Biometry

And one elective

Year 3

Autumn session

300785.1	Food Analysis and Quality Assurance
300307.1	Analytical Microbiology
300493.1	Forensic and Environmental Analysis

And one elective

Spring session

300637.1	Food Product Development Practicum
300656.1	Laboratory Quality Management
300780.1	Advanced Food Science and Technology

And one elective

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Mathematical Science

KT3062.1

The key program in Mathematical Sciences will prepare you to meet the growing demands from industry and business for highly-skilled problem-solvers. This program offers you a thorough grounding in the main areas of Mathematics and its applications, where you can specialise in mathematics, statistics or a combination of both. You'll develop skills that allow you to model and solve real world problems and in the process, make new discoveries. The flexible structure of the program also allows you to complete minor studies in science related areas such as computer science and the physical sciences or in areas such as marketing, management, accounting, economics and finance.

Offer

Campus	Mode
Campbelltown Campus	Internal
Parramatta Campus	Internal

Unit Set Structure

Students must satisfy the overall Bachelor of Science course rules, including the following schedule of units.

Note: Not all units will be offered in any one year.

Year 1

200025.1	Discrete Mathematics
300672.1	Mathematics 1A
300673.1	Mathematics 1B
300580.1	Programming Fundamentals

Choose one of

300700.3	Statistical Decision Making
200263.2	Biometry

Choose two of the following

Units offered at Parramatta Campus

300224.2	Chemistry 1
300558.1	Physics 1
300232.1	Introduction to Earth Sciences
300792.1	Biology A - The Diversity of Life

300661.1	Integrated Science 1
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300497.1	Professional Skills for Science
300613.1	Introductory Geochemistry: Earth, Resources and Environments
300559.1	Physics 2
300222.1	Biology 2

Units offered at Campbelltown Campus

300554.1	Principles of Chemistry
300558.1	Physics 1
300539.1	Biodiversity
300543.1	Cell Biology
300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals
300558.1	Physics 1
300559.1	Physics 2
300661.1	Integrated Science 1

And one elective

Year 2

200028.2	Advanced Calculus
200027.1	Linear Algebra

Choose one of

300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research

Choose three of

200033.3	Applied Statistics
200030.1	Differential Equations
300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200029.1	Numerical Analysis

And two electives

Year 3

200045.2	Quantitative Project
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Choose five of

200193.1	Abstract Algebra
200023.2	Analysis
200036.2	Data Mining and Visualisation
200024.1	Mathematical Finance
200022.2	Mathematical Modelling
300670.1	Optimisation Techniques
300671.1	Principles and Practice of Decision Making
200040.1	Probability & Stochastic Processes
200037.2	Regression Analysis & Experimental Design
200044.1	Simulation Techniques
200039.1	Surveys and Multivariate Analysis
200038.2	Time Series and Forecasting

And two electives

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). UWS offers sub-majors in a range of areas

including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Nutrition and Food**KT3064.1**

Healthy eating is a vital part of good health. Nutrition and Food covers a range of subjects from the nutritional benefits of particular foods to food safety and medical conditions affected by diet, such as diabetes and heart disease.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Students must satisfy the overall Bachelor of Science course rules, including the following schedule of units. They must also satisfactorily complete the unit 300655-Approved Industrial Experience (10 weeks), comprising a minimum of ten weeks Approved Industrial Experience.

Year 1**Autumn session**

300792.1	Biology A - The Diversity of Life
300497.1	Professional Skills for Science

Choose one of

300224.2	Chemistry 1
300469.2	Introductory Chemistry

Choose one of

300558.1	Physics 1
200191.3	Fundamentals of Mathematics

Spring session

300793.1	Biology B - Cellular Processes
300225.2	Chemistry 2
300498.1	Food Science 1
300753.1	Introduction to Human Physiology

Year 2**Autumn session**

300300.1	Microbiology 1
300219.3	Biochemistry 1
300649.1	Nutrition and Health 1
300499.1	Food Science 2

Spring session

300220.1	Biochemistry 2
300650.1	Nutrition and Health 2
300638.1	Experimental Foods

200263.2 Biometry

Year 3

Autumn session

300715.1 Culinary Science
300785.1 Food Analysis and Quality Assurance
300360.1 Consumer Issues in Nutrition

And one elective

Spring session

300637.1 Food Product Development Practicum
300653.1 Applied Nutrition

Choose one of

300780.1 Advanced Food Science and Technology
300786.1 Global Nutrition Food and Community

And one elective

Key Program - Agriculture

KT3066.1

Agriculture is an exciting, inter disciplinary area that is essential to feeding the growing world population. It involves the application of science and business skills to the management of over half of Australia's land for the production of food, feed, fibre and other goods by the systematic growing/harvesting/distribution of plants, animals and other life forms. It contributes to fundamental aspects of urban development and rural prosperity: sustainable resource usage, food security, social stability, and environmental protection for this and future generations. With its applied focus, the UWS Agriculture program prepares graduates for an extensive range of employment opportunities, with specialised knowledge and understanding of the balance between agriculture, landscape ecology, and business activities.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Year 1

Autumn

300792.1 Biology A - The Diversity of Life
300497.1 Professional Skills for Science
300502.1 Primary Production
300560.1 Introduction to Animal Science

Spring

200263.2 Biometry
300535.1 Soils
300663.1 Resource Sustainability
300616.1 Crop Production

Year 2

Autumn session

300664.1 Science in Society
300524.1 Agronomy
300790.1 Agriculture, Food and Health

And one elective

Spring session

300624.1 Landuse and the Environment
300662.1 Research Methods
300791.1 Sustainable Food Production

And one elective

Year 3

1H

300659.1 Field Project 1

Autumn session

300284.3 Environmental Risk Management
300427.2 Animal Production

And one elective

2H

300660.1 Field Project 2

Spring session

300779.1 Water in the Landscape
300786.1 Global Nutrition Food and Community

And one elective

Sub-major elective spaces

Elective units may be used toward obtaining an additional approved sub-major (40 credit points). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Animal Science

KT3067.1

Interactions between people and animals are increasing as we become more dependent on animals for companionship and food production, and strive to understand the greater pressures being placed on our unique native wildlife. The UWS program in Animal Science embraces a unique hands on approach to understanding the interactions between animals and their environments, and combines the fields of animal behaviour and anthrozoology to explore and enhance the quality of life of wild, captive and domesticated animals. It is underpinned by on campus access to animal facilities including reptiles, small marsupials, horses, sheep, cattle and deer linked with off campus animal professionals

and organisations such as national parks, wildlife parks, zoos, farms and horse studs.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Year 1

Autumn

300497.1	Professional Skills for Science
300792.1	Biology A - The Diversity of Life
300560.1	Introduction to Animal Science
300426.1	Human Animal Interactions

Spring

200263.2	Biometry
300663.1	Resource Sustainability
300421.2	Animal Science
300425.2	Introduction to Wildlife Studies

Year 2

Autumn

300664.1	Science in Society
300562.1	Animal Nutrition and Feeding

And two electives

Spring

300563.1	Animal Reproduction
300424.1	Animal Health and Welfare
300662.1	Research Methods

And one elective

Year 3

1H

300659.1	Field Project 1
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Autumn

300427.2	Animal Production
300564.2	Animal Behaviour

And one elective

2H

300660.1	Field Project 2
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Spring

300470.2	Vertebrate Biodiversity
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And two electives

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Food Sustainability

KT3068.1

By 2050 global food demand is forecast to be 70% greater than current levels. While this is a daunting challenge, it is only part of the story. At the same time that we face this global food challenge, the natural resources that underpin agricultural production; land, water, energy, and human capacity; are in decline, facing competition from other uses, and becoming more expensive. The new Food Sustainability key program will provide students with a deep understanding of current food systems, the challenges faced by society in achieving food security and food sustainability, and approaches for making the transition to a more secure and sustainable future for food.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Year 1

Autumn session

300792.1	Biology A - The Diversity of Life
300497.1	Professional Skills for Science
300642.1	Understanding Landscape
300502.1	Primary Production

Spring session

200263.2	Biometry
300616.1	Crop Production
300663.1	Resource Sustainability
300498.1	Food Science 1

Year 2

Autumn session

300664.1	Science in Society
300360.1	Consumer Issues in Nutrition
300524.1	Agronomy
300790.1	Agriculture, Food and Health

Spring session

300662.1	Research Methods
300791.1	Sustainable Food Production

And two electives

Year 3**1H****300659.1** Field Project 1**Autumn session****300284.3** Environmental Risk Management

And two electives

2H**300660.1** Field Project 2**Spring session****300786.1** Global Nutrition Food and Community

And two electives

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Environment and Health**KT3069.1**

The air we breathe, the water we drink, the food we eat, and the places where we live, work and relax all have major impacts on our health and well being. Health scares such as bird and swine flu, obesity, cancers and asthma have all been connected to our environmental conditions. The UWS Environment and Health program focuses on the application of science to the mitigation of human health impacts of global climate change through to the more localised issues of air and water quality, waste management, food security, environmental noise, planning and regulation for healthy built environments.

Offer

Campus	Mode
Hawkesbury Campus	External

Unit Set Structure**Special Requirement Pre-requisites**

Students must satisfactorily complete the unit 300655- Approved Industrial Experience (ten weeks), as a requirement of graduation. For students enrolled in this Key Program this unit is a pre/co-requisite for unit 300659 - Field Project 1.

Professional Accreditation

The Bachelor of Natural Science (Environment and Health) is accredited by the Environmental Health Australia (EHA), formerly the Australian Institute of Environmental Health (AIEH).

Year 1**Autumn**

300497.1 Professional Skills for Science
300792.1 Biology A - The Diversity of Life
300469.2 Introductory Chemistry
300633.1 Management of Aquatic Environments

Spring

200263.2 Biometry
300663.1 Resource Sustainability
300362.2 Environment and Health
300635.2 Water Quality Assessment and Management

Year 2**Autumn session**

300664.1 Science in Society
300626.1 Epidemiology
300783.1 Environmental Planning and Climate Change
300331.2 General Microbiology

Spring session

300662.1 Research Methods
300702.1 Disaster and Emergency Management
300639.1 Food Safety
300627.1 Toxicology

Year 3**1H****300659.1** Field Project 1**Autumn session**

300777.1 Air Quality and Climate Change
300284.3 Environmental Risk Management
300794.1 Occupational Health and Safety

2H**300660.1** Field Project 2**Spring session**

300789.1 Urban Environment
300784.1 Environmental Regulation and Policy
300782.1 Disease Prevention and Control

Key Program - Environmental Management and Climate Change

KT3070.1

Environmental managers are concerned with ensuring the ecological sustainability of human development. History has shown that unless we effectively manage our environment, we will degrade it – possibly to the point where it can no longer sustain us. The UWS Environmental Management and Climate Change program equips graduates with the problem solving skills to work with government agencies, industry, communities and professional practitioners to develop innovative policy and strategies that address the increasingly complex causes of today's environment and climate change-related problems, including urban development, toxic chemical pollutants and endocrine disruptors, decreasing biodiversity and deteriorating air and water quality.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Year 1

Autumn session

300497.1	Professional Skills for Science
300792.1	Biology A - The Diversity of Life
300633.1	Management of Aquatic Environments
300642.1	Understanding Landscape

Spring session

200263.2	Biometry
300663.1	Resource Sustainability
300635.2	Water Quality Assessment and Management

And one elective

Year 2

Autumn session

300664.1	Science in Society
300783.1	Environmental Planning and Climate Change
300631.2	Indigenous Landscape

And one elective

Spring session

300662.1	Research Methods
300624.1	Landuse and the Environment
300791.1	Sustainable Food Production

And one elective

Year 3

1H

[300659.1](#) Field Project 1

Autumn session

[300284.3](#) Environmental Risk Management

And two electives

2H

[300660.1](#) Field Project 2

Spring session

[300784.1](#) Environmental Regulation and Policy
[300789.1](#) Urban Environment

And one elective

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Food Systems

KT3071.1

The Food Systems program covers the value chain management of the food industry, from farm to fork. The program fills a critical niche in our increasingly complex food provision systems, by addressing food supply chains and production processes. Graduates will develop a grounding in food production from harvest, food processing technologies through to the consumer. Training will be underpinned by developing an appreciation for the management and control of a safe food supply. The program is set within a strong environmental framework of learning, enabling the graduates to be equipped to deal with new challenges in a changing world. The course has strong links with the food industry and unique well equipped facilities, including a food processing pilot plant, which gives hands-on experience with equipment similar to that found in industry.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Year 1

Autumn session

300497.1	Professional Skills for Science
300792.1	Biology A - The Diversity of Life
300469.2	Introductory Chemistry
300502.1	Primary Production

Spring session

300663.1	Resource Sustainability
300498.1	Food Science 1
300616.1	Crop Production
200263.2	Biometry

Year 2**Autumn session**

300664.1	Science in Society
300331.2	General Microbiology
300452.1	Postharvest
300499.1	Food Science 2

Spring session

300662.1	Research Methods
300639.1	Food Safety
300791.1	Sustainable Food Production

And one elective

Year 3**1H**

300659.1	Field Project 1
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Autumn session

300785.1	Food Analysis and Quality Assurance
300790.1	Agriculture, Food and Health

And one elective

2H

300660.1	Field Project 2
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Spring session

300637.1	Food Product Development Practicum
300780.1	Advanced Food Science and Technology

And one elective

Key Program - Horticulture**KT3072.1**

Horticulture is an exciting and diverse field encompassing science, technology, business, tourism and sociology. It impacts our lives through parks and gardens, organic farming, recreational landscape development, rural tourism and the use of plants in alternative therapies, and its practitioners play a key role in our country's economic future. The UWS Horticulture program embraces such areas as plant form and function, soils, landscape design, production systems, pest and disease control, people/plant relationships and business management. It offers a range of specialisations, underpinned by studies in biotechnology, molecular biology, genetic engineering, process

engineering, botany, chemistry, microbiology and soil science.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure**Year 1****Autumn**

300497.1	Professional Skills for Science
300792.1	Biology A - The Diversity of Life
300502.1	Primary Production
300642.1	Understanding Landscape

Spring

200263.2	Biometry
300535.1	Soils
300663.1	Resource Sustainability
300616.1	Crop Production

Year 2**Autumn session**

300664.1	Science in Society
300524.1	Agronomy
300452.1	Postharvest

And one elective

Spring session

300662.1	Research Methods
300328.1	Botany

And two electives

Year 3**1H**

300659.1	Field Project 1
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Autumn session

300284.3	Environmental Risk Management
300787.1	Plant Microbiology and Protection

And one elective

2H

300660.1	Field Project 2
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Spring session

300786.1	Global Nutrition Food and Community
300779.1	Water in the Landscape

And one elective

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Nature Conservation

KT3073.1

Nature conservation is shaped by the interplay of diverse political, cultural, economic, scientific and technological forces across Australia and internationally. With the increasing exploitation of the world's non-renewable resources and the rapidly unfolding degradation of the planet's natural systems there is an urgent need to conserve those wild places we have left and begin to restore the damage man has done. The UWS program in Nature Conservation provides a deep understanding of sustainable ecosystems management from both the Indigenous cultural perspective and the Western scientific perspective. Studies of policy formulation and environmental advocacy are underpinned by a solid scientific foundation.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Year 1

Autumn

300497.1	Professional Skills for Science
300792.1	Biology A - The Diversity of Life
300633.1	Management of Aquatic Environments
300642.1	Understanding Landscape

Spring

200263.2	Biometry
300663.1	Resource Sustainability
300425.2	Introduction to Wildlife Studies

And one elective

Year 2

Autumn

300664.1	Science in Society
300634.1	Ecology
300631.2	Indigenous Landscape

And one elective

Spring

300662.1	Research Methods
300624.1	Landuse and the Environment
300563.1	Animal Reproduction
300632.1	Living in Country

Year 3

1H

300659.1	Field Project 1
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Autumn

300284.3	Environmental Risk Management
300617.2	Conservation Biology

And one elective

2H

300660.1	Field Project 2
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Spring

300465.1	Aquatic Ecology
300470.2	Vertebrate Biodiversity

And one elective

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Food Technology

KT3074.1

Food Technology is about the study of food. The key program is underpinned by broad science base incorporating microbiology and chemistry, leading to specialised food topics in food processing, nutrition, culinary studies, quality assurance, product development and packaging. The program prepares you for teaching Food Technology at high school, plus a range of secondary teaching areas in Biology, Chemistry, Design and Technology depending on elective choices. In addition, the program prepares you a wide range of careers outside of teaching, including the food and beverage industries, government research or policy; quality assurance, product development, nutrition, regulatory affairs, marketing, management and consulting. The program has strong food industry links and well-equipped facilities, which include a food processing pilot plant, offering hands-on experience using industry standard equipment.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Full-time

Year 1

Autumn session

300792.1 Biology A - The Diversity of Life

Choose one of

300469.2 Introductory Chemistry
300224.2 Chemistry 1

Choose one of

300558.1 Physics 1
200191.3 Fundamentals of Mathematics

And one elective

Spring

300793.1 Biology B - Cellular Processes
300225.2 Chemistry 2
300498.1 Food Science 1

And one elective

Year 2

Autumn

300219.3 Biochemistry 1
300300.1 Microbiology 1
300649.1 Nutrition and Health 1
300499.1 Food Science 2

Spring

300638.1 Experimental Foods
300639.1 Food Safety

And two electives

Year 3

Autumn

300785.1 Food Analysis and Quality Assurance
300715.1 Culinary Science

And two electives

Spring

300637.1 Food Product Development Practicum
300780.1 Advanced Food Science and Technology

And two electives

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). UWS offers sub-majors in a range of areas including Sustainability and Indigenous Studies. Refer to the Unit Set Index.

Students can apply for these unit sets using the Course Variation Form.

Key Program - Health Promotion

KT4000.1

Health Promotion extends beyond raising awareness of healthcare issues to developing and implementing strategies for communities, individuals and policy-makers to improve their health and wellbeing. Health Promotion graduates help communities and individuals to change their behaviour, working with employers, not-for-profit foundations, disability councils, the public health sector, community health centres, youth centres, schools and local government. Health promotion projects are as diverse as injury prevention, skin cancer prevention, HIV/AIDS awareness and community development. The program combines studies of health politics and planning, health promotion practice, injury prevention, public health with a comprehensive foundation of the health sciences to develop the professional competencies important for ethical and safe practice and high quality care and the skills to work in multidisciplinary teams. Evidence-based practice is one of the most important trends in healthcare today and a strong feature of the program. There is room for electives in particular areas of interest opening up a richer experience of university life or a double major in two of the areas of Health Promotion, Health Services Management or Therapeutic Recreation.

Offer

Campus	Mode
Campbelltown Campus	Internal

Unit Set Structure

Qualification for this Key Program requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Full-time - Start Year Intake

Year 1

Autumn session

400870.1 Population Health and Society
300361.2 Introduction to Human Biology
400783.1 Professional Pathways in Health Science
400871.1 Professional Health Competencies

Spring session

101614.1 Psychology and Health
400863.1 Foundations of Research and Evidence-Based Practice
400732.1 Communication in Health

And one elective

Recommended elective

400277.2 Health Services Management

Year 2**Autumn session**

400867.1	Approaches to Health Promotion
400285.1	Public Health
400864.2	Research Methods (Quantitative and Qualitative)
400866.2	Culture, Diversity and Health

Spring session

400966.1	Health Politics, Policy and Planning
400286.2	Injury Prevention

And two electives

Year 3**Autumn session**

400275.1	Health Planning Project
400784.1	Health Promotion Practice 1

And two electives

Spring session

400785.1	Health Promotion Practice 2
400249.1	Ethical and Legal Issues in Health Care
400786.1	Professional Transition Project

And one elective

Full-time - Mid Year Intake**Year 1****Spring session**

101614.1	Psychology and Health
400863.1	Foundations of Research and Evidence-Based Practice
400732.1	Communication in Health

One elective

Recommended Elective

400277.2	Health Services Management
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Year 2**Autumn session**

300361.2	Introduction to Human Biology
400285.1	Public Health
400783.1	Professional Pathways in Health Science
400871.1	Professional Health Competencies

Spring session

400966.1	Health Politics, Policy and Planning
400286.2	Injury Prevention

Two electives

Year 3**Autumn session**

400867.1	Approaches to Health Promotion
400870.1	Population Health and Society
400864.2	Research Methods (Quantitative and Qualitative)
400866.2	Culture, Diversity and Health

Spring session

400785.2	Health Promotion Practice 2
400249.1	Ethical and Legal Issues in Health Care
400786.1	Professional Transition Project

One elective

Year 4**Autumn session**

400275.1	Health Planning Project
400784.2	Health Promotion Practice 1

Two electives

Key Program - Health Service Management**KT4001.1**

Health Services Management plays a vital role in society, in ensuring that public investment in health is well spent, and that private healthcare businesses deliver effective, efficient services. It puts management studies in the distinctive context of the health sector to integrate clinical understanding, management skills and knowledge of the health care system and policy development. Health Services Management graduates are in demand to work in quality improvement, financial management and occupational health and safety. Two areas of growth are in mental health services and the aged care sector. Graduates will be skilled in managing and responding to rapid changes within the health care system and in areas that deal with policy initiative, development and evaluation. The program combines studies of managing people, resources and finances with a comprehensive foundation of the health sciences to develop the professional competencies important for ethical and safe practice and high quality care and the skills to work in multidisciplinary teams. Evidence-based practice is one of the most important trends in healthcare today and a strong feature of the program. There is room for electives in particular areas of interest opening up a richer experience of university life or a double major in two of the areas of Health Promotion, Health Services Management or Therapeutic Recreation.

Offer

Campus	Mode
Campbelltown Campus	Internal

Unit Set Structure**Professional Accreditation**

The Bachelor of Health Science (Health Service Management) has Professional Accreditation with the Australasian College of Health Service Management.

Qualification for this Key Program requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Full-time - Start Year Intake

Year 1

Autumn session

400870.1	Population Health and Society
300361.2	Introduction to Human Biology
400783.1	Professional Pathways in Health Science
400871.1	Professional Health Competencies

Spring session

101614.1	Psychology and Health
400277.2	Health Services Management
400863.1	Foundations of Research and Evidence-Based Practice
400732.1	Communication in Health

Year 2

Autumn session

400867.1	Approaches to Health Promotion
400864.2	Research Methods (Quantitative and Qualitative)
400866.2	Culture, Diversity and Health

And one elective

Recommended electives

400285.1	Public Health
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or

400244.1	Introduction to Leisure and Recreation Theory
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Spring session

400966.1	Health Politics, Policy and Planning
400788.1	Health Services Workforce Management

And two electives

Year 3

Autumn session

400275.1	Health Planning Project
400787.1	Health Services Management Practice

And two electives

Spring session

400279.2	Health Services Financial Management
400249.1	Ethical and Legal Issues in Health Care
400786.1	Professional Transition Project

And one elective

Full-time - Mid Year Intake

Year 1

Spring session

101614.1	Psychology and Health
400277.2	Health Services Management
400863.1	Foundations of Research and Evidence-Based Practice
400732.1	Communication in Health

Year 2

Autumn session

400870.1	Population Health and Society
300361.2	Introduction to Human Biology
400783.1	Professional Pathways in Health Science
400871.1	Professional Health Competencies

Spring session

400966.1	Health Politics, Policy and Planning
400788.1	Health Services Workforce Management

Two electives

Year 3

Autumn session

400867.1	Approaches to Health Promotion
400864.2	Research Methods (Quantitative and Qualitative)
400866.2	Culture, Diversity and Health

One elective

Recommended Electives

400285.1	Public Health
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OR

400244.1	Introduction to Leisure and Recreation Theory
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Spring session

400279.2	Health Services Financial Management
400249.1	Ethical and Legal Issues in Health Care
400786.1	Professional Transition Project

One elective

Year 4

Autumn session

400275.1	Health Planning Project
400787.1	Health Services Management Practice

Two electives

Key Program - Therapeutic Recreation

KT4002.1

Therapeutic Recreation is the link between leisure and health improvement, using recreation as a way to improve quality of life. Therapeutic Recreation graduates work with patients to use leisure activities to improve health and life quality, for example in rehabilitation centres and psychiatric units, special schools, day care centres, aged care facilities, or in local government or community settings. The program combines theory and practice in learning, education programming, aged care, disability and mental health with a comprehensive foundation of the health sciences to develop the professional competencies important for ethical and safe practice and high quality care and the skills to work in multidisciplinary teams. Evidence-based practice is one of the most important trends in healthcare today and a strong feature of the program. There is room for electives in particular areas of interest opening up a richer experience of university life or a double major in two of the areas of Health Promotion, Health Services Management or Therapeutic Recreation.

Offer

Campus	Mode
Campbelltown Campus	Internal

Unit Set Structure

Professional Accreditation

Accreditation will be sought with the Diversional Therapy Association of Australia (for Therapeutic Recreation Key Program).

Qualification for this Key Program requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Recommended Sequence

Full-time - Start Year Intake

Year 1

Autumn session

400870.1	Population Health and Society
300361.2	Introduction to Human Biology
400783.1	Professional Pathways in Health Science
400871.1	Professional Health Competencies

Spring session

101614.1	Psychology and Health
400863.1	Foundations of Research and Evidence-Based Practice
400732.1	Communication in Health

And one elective

Recommended elective

400277.2	Health Services Management
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Year 2

Autumn session

400867.1	Approaches to Health Promotion
400244.1	Introduction to Leisure and Recreation Theory
400864.2	Research Methods (Quantitative and Qualitative)
400866.2	Culture, Diversity and Health

Spring session

400968.1	Professional Practice in Aged Care and Disability
400246.2	Workplace Learning 1 (Therapeutic Recreation)

And two electives

Year 3

Autumn session

400789.2	Leisure Education Programming and Mental Health
400252.1	Workplace Learning 2 (Community Placement)

And two electives

Spring session

400786.1	Professional Transition Project
400249.1	Ethical and Legal Issues in Health Care
400254.2	Therapeutic Recreation Professional Project

And one elective

Full-time - Mid Year Intake

Year 1

Spring session

101614.1	Psychology and Health
400863.1	Foundations of Research and Evidence-Based Practice
400732.1	Communication in Health

One elective

Recommended Elective

400277.2	Health Services Management
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Year 2

Autumn session

300361.2	Introduction to Human Biology
400244.1	Introduction to Leisure and Recreation Theory
400783.1	Professional Pathways in Health Science
400871.1	Professional Health Competencies

Spring session

400968.1	Professional Practice in Aged Care and Disability
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400246.2 Workplace Learning 1 (Therapeutic Recreation)

And two electives

Year 3

Autumn session

400867.1 Approaches to Health Promotion
400870.1 Population Health and Society
400864.2 Research Methods (Quantitative and Qualitative)
400866.2 Culture, Diversity and Health

Spring session

400786.1 Professional Transition Project
400249.1 Ethical and Legal Issues in Health Care
400254.2 Therapeutic Recreation Professional Project

And one elective

Year 4

Autumn session

400789.2 Leisure Education Programming and Mental Health
400252.1 Workplace Learning 2 (Community Placement)

And two electives

Major - Computer Systems

M3000.1

This major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following six compulsory units

300103.1 Data Structures and Algorithms
300096.4 Computer Organisation
300092.1 Computer Architecture
300167.2 Systems Programming 1
300149.1 Operating Systems
300121.1 Formal Languages and Automata

And choose two of

300128.2 Information Security
300165.2 Systems Administration Programming
300368.1 Intelligent Systems
300093.1 Computer Graphics

Major - Advanced Programming

M3001.1

This major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following six compulsory units

300103.1 Data Structures and Algorithms
300167.2 Systems Programming 1
300404.1 Formal Software Engineering
300168.1 Systems Programming 2
300149.1 Operating Systems
300096.4 Computer Organisation

And choose two of

300130.1 Internet Programming
300115.1 Distributed Systems and Programming
300165.2 Systems Administration Programming

Major - Information Technology

M3002.1

This major is available to all students except those enrolled in the Networks or Information Systems Key Programs within the Bachelor of Computing course, and the Bachelor of Information and Communications Technology course.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following six compulsory units

300580.1 Programming Fundamentals
300585.1 Systems Analysis and Design
300582.1 Technologies for Web Applications
300583.1 Web Systems Development
300565.1 Computer Networking
300095.2 Computer Networks and Internets

And choose one of

300575.1 Networked Systems Design
300166.1 Systems and Network Management

And choose one of

300104.2 Database Design and Development

300570.2 Human-Computer Interaction
300569.1 Computer Security

Major - Web Systems Development

M3003.1

This major is available to all students except those enrolled in the Bachelor of Computing, Bachelor of Computer Science or the Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following eight units

300580.1	Programming Fundamentals
300585.1	Systems Analysis and Design
300582.1	Technologies for Web Applications
300104.2	Database Design and Development
300570.2	Human-Computer Interaction
300583.1	Web Systems Development
300111.1	Developing Web Applications with XML
300572.1	Information Systems Deployment and Management

Major - Health Informatics

M3004.1

This major is available to all students except those enrolled in the Health Informatics key program within the Bachelor of Computing course.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following six compulsory units

300566.1	Introduction to Health Informatics
300580.1	Programming Fundamentals
300104.2	Database Design and Development
300582.1	Technologies for Web Applications
300567.2	e-Health
300568.1	Services Computing in Healthcare

And choose one of

300700.3	Statistical Decision Making
300585.1	Systems Analysis and Design

And choose one of

200036.2	Data Mining and Visualisation
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300570.2 Human-Computer Interaction

Note: Students in the Bachelor of Computing (Information Systems) are required to select 300585 Systems Analysis and Design in order to comply with course major guidelines.

Major - Entertainment Computing

M3005.1

This major is available to all students

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following eight units

300580.1	Programming Fundamentals
300585.1	Systems Analysis and Design
300491.1	Games Technology
300578.2	Professional Development
300565.1	Computer Networking
300104.2	Database Design and Development
300093.1	Computer Graphics
300492.1	Games Theory and Design

Major - Animal Science

M3016.1

This major is not available to students who complete the Bachelor of Science (Animal Science).

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Students must complete eight units from the following, including at least three Level 3 units

Level 1

300560.1	Introduction to Animal Science
300425.2	Introduction to Wildlife Studies

Level 2

300562.1	Animal Nutrition and Feeding
300563.1	Animal Reproduction
300219.3	Biochemistry 1
300623.2	Genetics
300620.1	Human Physiology 1

Level 3

300427.2	Animal Production
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300564.2 Animal Behaviour
 300334.1 Invertebrate Biology
 300470.2 Vertebrate Biodiversity

Major - Chemistry

M3019.1

This major is not available to students who complete the Bachelor of Science (Chemistry).

Offer

Campus	Mode
Campbelltown Campus	Internal
Parramatta Campus	Internal

Unit Set Structure

Students must complete eight units from the following, including at least three Level 3 units.

Level 1

Choose one of

300224.2 Chemistry 1
 300554.1 Principles of Chemistry

Choose one of

300225.2 Chemistry 2
 300550.1 Medicinal Chemistry

and

Choose at least three units from the Level 1, 2 and 3 pools

Level 1

300672.1 Mathematics 1A
 200191.3 Fundamentals of Mathematics
 300497.1 Professional Skills for Science

Level 2

300297.1 Analytical Chemistry 2

or

300493.1 Forensic and Environmental Analysis
 300230.1 Inorganic Chemistry 2

or

300545.1 Coordination Chemistry
 300301.1 Organic Chemistry 2

or

300553.1 Molecules of Life: Synthesis and Reactivity
 300236.1 Physical Chemistry 2

or

300540.1 Biomolecular Dynamics

Level 3

300298.1 Analytical Chemistry 3
 300231.1 Inorganic Chemistry 3

or

300538.1 Advanced Inorganic Chemistry
 300235.1 Organic Chemistry 3

or

300546.1 Drug Design and Synthesis
 300303.1 Physical Chemistry 3

or

300475.1 Molecular Pharmacokinetics

Note: Students cannot count both 300672 - Mathematics 1A and 200191 - Fundamentals of Mathematics towards this major.

And choose up to three of

Level 3

300218.1 Applied Aspects of Inorganic Chemistry
 300656.1 Laboratory Quality Management
 300557.1 Molecular Spectroscopy
 300645.1 Science Research Project 2

or

300542.1 Biomolecular Science Project

Major - Geochemistry

M3020.1

This major is available to all students.

Offer

Campus	Mode
Parramatta Campus	Internal

Unit Set Structure

Students must complete eight units.

Level 1

300224.2 Chemistry 1
 300232.1 Introduction to Earth Sciences
 300613.1 Introductory Geochemistry: Earth, Resources and Environments

Level 2

300611.2 Chemical Mineralogy
 300612.1 Geochemical Systems

Level 3

300218.1 Applied Aspects of Inorganic Chemistry
 300614.1 Environmental Geochemistry
 300645.1 Science Research Project 2

Major - Mathematics**M3021.1**

This major is available to all students. This major may meet the NSW Institute of Teachers accreditation requirements for teaching Mathematics as a first subject in NSW state high schools.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete eight units from the following

300672.1	Mathematics 1A
300673.1	Mathematics 1B
200025.1	Discrete Mathematics
200028.2	Advanced Calculus

Choose two of

200027.1	Linear Algebra
200030.1	Differential Equations
200029.1	Numerical Analysis

Choose two of

200193.1	Abstract Algebra
200023.2	Analysis
200022.2	Mathematical Modelling

Students enrolled in the Bachelor of Information and Communications Technology may replace 200025 Discrete Mathematics with Discrete Structures and Complexity.

Note: For students who want to complete the Mathematics Major but may not necessarily want to qualify for NSW Institute of Teachers accreditation, 200024 Mathematical Finance would be added to the list of Level 3 units.

Major - Statistics**M3022.1**

This major is available to all UWS students.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete eight units from the following

200033.3	Applied Statistics
300606.1	Foundations of Statistical Modelling and Decision Making
300104.2	Database Design and Development
200037.2	Regression Analysis & Experimental Design

200038.2	Time Series and Forecasting
200036.2	Data Mining and Visualisation
200039.1	Surveys and Multivariate Analysis

Choose one of

300700.3	Statistical Decision Making
200263.2	Biometry
200032.3	Statistics for Business
300700.3	Statistical Decision Making

Major - Computational Decision Making**M3023.1**

This major is available to all students.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete eight units from the following

300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200027.1	Linear Algebra
300670.1	Optimisation Techniques
300671.1	Principles and Practice of Decision Making
200044.1	Simulation Techniques

Choose one of

300700.3	Statistical Decision Making
200263.2	Biometry
200032.3	Statistics for Business
300700.3	Statistical Decision Making

And choose one of

200025.1	Discrete Mathematics
300672.1	Mathematics 1A

Major - Knowledge Discovery and Data Mining**M3024.1**

This major is available to all students.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete eight units from the following

300585.1	Systems Analysis and Design
200033.3	Applied Statistics

300606.1	Foundations of Statistical Modelling and Decision Making
300104.2	Database Design and Development
200036.2	Data Mining and Visualisation
300117.2	Enterprise Database

Choose one of

300700.3	Statistical Decision Making
200263.2	Biometry
200032.3	Statistics for Business
300700.3	Statistical Decision Making

Choose one of

200037.2	Regression Analysis & Experimental Design
200038.2	Time Series and Forecasting
200039.1	Surveys and Multivariate Analysis
200042.2	Introduction to Operations Research
300670.1	Optimisation Techniques
300671.1	Principles and Practice of Decision Making

Major - Networking

M3025.1

This major is only available to students enrolled in 3639 Bachelor of Information and Communications Technology course.

Offer

Campus	Mode
Campbelltown Campus	Internal
Parramatta Campus	Internal
Penrith Campus	Internal

Unit Set Structure

Students must complete eight units from the following

300565.1	Computer Networking
300576.1	Networking Workshop
300582.1	Technologies for Web Applications
300095.2	Computer Networks and Internets
300143.2	Network Security
300575.1	Networked Systems Design
300166.1	Systems and Network Management

Choose one of

300583.1	Web Systems Development
300112.1	Digital Communication Technology
300088.1	Broadband Networking

Major - Forensic Science Major

M3033.1

This major gives a systematic introduction to the principles and practice of forensic science, emphasising the importance of maintaining the integrity of physical evidence

during its recovery and analysis. The major is designed to complement a science-based degree, but it may also be taken by students who are studying a different discipline or profession. It includes the relevant pre-requisites for the Level 2 and 3 units, and the forensic content and principles are sequenced through the curriculum. This major in may be complemented by units from other disciplines such as the biological sciences, statistics, policing, criminology and law. Students who are interested in the analysis of DNA evidence may take Biochemistry 1 and Molecular Biology, or equivalent units. Other relevant science units include Biometry, Botany, Genetics, Introduction to Anatomy and Histology, Invertebrate Biology, Environmental Biology, Ecology and Physics 1.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Students must complete eight units from the following

Level 1

300224.2	Chemistry 1
300225.2	Chemistry 2
300654.1	Forensic Science

Level 2

300493.1	Forensic and Environmental Analysis
300746.1	Evidence and Crime Scene Management

Level 3

300378.1	Forensic Archaeology
300494.1	Forensic Chemistry
300656.1	Laboratory Quality Management

Major - Landscape Design

M3034.1

The Landscape Design major provides the opportunity for students to apply their environmental landscape, plant biology and horticultural knowledge to the discipline of landscape design. The major combines 4 units from the Horticulture Key Program of the Bachelor of Natural Science with 4 units provided by TAFE in the specialist area of amenity horticulture and landscape design. The units offered by TAFE have official recognition by UWS and will be named on the students' transcript. The 8 units provide a sound understanding of plant biology and the use of plants in the landscape. The TAFE units build upon this understanding by providing expertise in design and management of landscape projects.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

UWS Units

300328.1	Botany
300787.1	Plant Microbiology and Protection
300642.1	Understanding Landscape
300624.1	Landuse and the Environment

TAFENSW Units

RTF4007A	Prepare a Garden Design
RTF501A	Prepare a Landscape Project Design
RTF5009A	Plan the restoration of Parks and Gardens
RTF5013A	Manage Plant Cultural Practices for Amenity

Major - Conservation Biology

M3035.1

Conservation biology has emerged as a field of study from a synthesis of the ecological, demographic, genetic and societal risks faced by small natural populations. This major equips students with skills in fundamental biology, in the ecology of populations and communities, in population genetics and in the legal conservation framework to enable them to work in this area.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Students must complete eight units from the following

Level 1

300792.1	Biology A - The Diversity of Life
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Level 2

300634.1	Ecology
300623.2	Genetics
300328.1	Botany

Level 3

300465.1	Aquatic Ecology
300334.1	Invertebrate Biology
300617.2	Conservation Biology
300470.2	Vertebrate Biodiversity

Major - General Biology

M3036.1

The major in General Biology gives students a broad training in biology, with the opportunity to select a program

that ranges across the scale from macro- to micro- to molecular level processes.

Offer

Campus	Mode
Campbelltown Campus	Internal
Hawkesbury Campus	Internal
Parramatta Campus	Internal

Unit Set Structure

Students must complete eight units from the following

Parramatta Campus

Level 1

300792.1	Biology A - The Diversity of Life
300793.1	Biology B - Cellular Processes

Choose six of the following, including at least three Level 3 units

Level 1

300224.2	Chemistry 1
300225.2	Chemistry 2

Level 2

300219.1	Biochemistry 1
300220.1	Biochemistry 2
300300.1	Microbiology 1
300321.1	Microbiology 2
300609.1	Plant Physiology
300608.1	Animal Physiology

Level 3

300234.2	Molecular Biology
300617.2	Conservation Biology
300647.1	Environmental Biotechnology
300229.2	Immunology
300749.1	Medical Microbiology
300788.1	Science Research Project

Hawkesbury Campus

Level 1

300792.1	Biology A - The Diversity of Life
300793.1	Biology B - Cellular Processes

Choose six of the following, including at least three Level 3 units

Level 1

300224.2	Chemistry 1
300225.2	Chemistry 2

Level 2

300219.1	Biochemistry 1
300220.1	Biochemistry 2
300300.1	Microbiology 1
300321.1	Microbiology 2

300609.1	Plant Physiology
300328.1	Botany
300634.1	Ecology
300623.2	Genetics

Level 3

300234.2	Molecular Biology
300617.2	Conservation Biology
300647.1	Environmental Biotechnology
300465.1	Aquatic Ecology
300470.2	Vertebrate Biodiversity
300334.1	Invertebrate Biology
300407.1	Mammalian Molecular Medicine
300408.1	Mammalian Cell Biology and Biotechnology
300307.1	Analytical Microbiology
300787.1	Plant Microbiology and Protection
300656.1	Laboratory Quality Management

Campbelltown Campus**Level 1**

300539.1	Biodiversity
300543.1	Cell Biology

Choose six of the following, including at least three Level 3 units

Level 1

300554.1	Principles of Chemistry
300550.1	Medicinal Chemistry

Level 2

300555.1	Proteins and Genes
300548.1	Human Metabolism and Disease
300300.1	Microbiology 1
300321.1	Microbiology 2
300547.1	Human Genetics

Level 3

300549.1	Human Molecular Biology
300544.1	Cell Signalling
300757.1	Molecular Biology of the Immune System
300749.1	Medical Microbiology
300556.1	Analytical Protein Science
300542.1	Biomolecular Science Project

Major - Microbiology**M3037.1**

A microbiology major will equip students with the skills and knowledge of microorganisms and molecular microbiology relevant for employment in research laboratories and industries including biotechnology companies, medical and environmental laboratories, food, wine and pharmaceutical companies, quality assurance and scientific sales. The major which includes the study of bacteria, fungi, protists and viruses, will also provide a foundation for research at Honours and postgraduate levels.

Offer

Campus	Mode
Campbelltown Campus	Internal
Hawkesbury Campus	Internal
Parramatta Campus	Internal

Unit Set Structure

Students must complete eight units from the following

Parramatta and Hawkesbury Campuses**Level 1**

300793.1	Biology B - Cellular Processes
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Choose one of

300224.2	Chemistry 1
300225.2	Chemistry 2

Level 2

300300.1	Microbiology 1
300321.1	Microbiology 2
300219.3	Biochemistry 1

Level 3

Choose three of

300307.1	Analytical Microbiology
300647.1	Environmental Biotechnology
300749.1	Medical Microbiology
300234.2	Molecular Biology

Note: 300307 - Analytical Microbiology is only available on Hawkesbury campus.

Campbelltown Campus**Level 1**

300543.1	Cell Biology
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Choose one of

300554.1	Principles of Chemistry
300550.1	Medicinal Chemistry

Level 2

300300.1	Microbiology 1
300321.1	Microbiology 2
300555.1	Proteins and Genes

Level 3

300749.1	Medical Microbiology
300549.1	Human Molecular Biology
300757.1	Molecular Biology of the Immune System

Major - Biochemistry and Molecular Biology**M3038.1**

This major will equip students with skills in fundamental biology, biochemistry and molecular-level processes to enter industrial or research-based employment in this area (biotech companies, pathology, quality assurance, university and hospital labs and scientific sales). The outcomes of the major would support honours or masters level research in this area.

Offer

Campus	Mode
Campbelltown Campus	Internal
Hawkesbury Campus	Internal
Parramatta Campus	Internal

Unit Set Structure

Students must complete eight units from the following

Parramatta Campus**Level 1**

300793.1	Biology B - Cellular Processes
300224.2	Chemistry 1
300225.2	Chemistry 2

Level 2

300219.3	Biochemistry 1
300220.1	Biochemistry 2

Level 3

300234.2	Molecular Biology
300229.2	Immunology
300788.1	Science Research Project

Hawkesbury Campus**Level 1**

300793.1	Biology B - Cellular Processes
300224.2	Chemistry 1
300225.2	Chemistry 2

Level 2

300219.3	Biochemistry 1
300220.1	Biochemistry 2

Level 3

300234.2	Molecular Biology
300407.1	Mammalian Molecular Medicine
300408.1	Mammalian Cell Biology and Biotechnology

Campbelltown Campus**Level 1**

300543.1	Cell Biology
300554.1	Principles of Chemistry
300550.1	Medicinal Chemistry

Level 2

300555.1	Proteins and Genes
300548.1	Human Metabolism and Disease

Level 3

300549.1	Human Molecular Biology
300544.1	Cell Signalling
300757.1	Molecular Biology of the Immune System

Major - Biomedical Science**M3039.1**

The biomedical science major focuses on microbiology, biochemistry and aspects of health.

Offer

Campus	Mode
Campbelltown Campus	Internal
Hawkesbury Campus	Internal

Unit Set Structure**Biomedical Science Major - Campbelltown Campus**

The recommended sequence that follows is specific to units offered at the Campbelltown Campus.

Year 2

300300.1	Microbiology 1
300321.1	Microbiology 2

One unit from Schedule A list (below)

Year 3

300549.1	Human Molecular Biology
300749.1	Medical Microbiology

Two units from Schedule A list (below)

Biomedical Science Major - Hawkesbury campus

The recommended sequence that follows is specific to units offered at the Hawkesbury Campus.

Year 2

300300.1	Microbiology 1
300321.1	Microbiology 2

One unit from Schedule A list (below)

Year 3

- 300234.2** Molecular Biology
300749.1 Medical Microbiology

Two units from Schedule A list (below)

Schedule A Units

- 300544.1** Cell Signalling
300556.1 Analytical Protein Science
300307.1 Analytical Microbiology
300757.1 Molecular Biology of the Immune System
300656.1 Laboratory Quality Management
300408.1 Mammalian Cell Biology and Biotechnology
300407.1 Mammalian Molecular Medicine
300505.1 Pharmacology

Choose one of

- 300756.1** Topics in Physiology
300622.1 Human Physiology 2

Choose one of

- 300547.1** Human Genetics
300623.2 Genetics

Major - Medicinal Chemistry

M3040.1

The medicinal chemistry major focuses on chemistry and biochemistry.

Offer

Campus	Mode
Campbelltown Campus	Internal

Unit Set Structure

Professional Accreditation

The Bachelor of Medical Science (Medicinal Chemistry Major) is accredited by The Royal Australian Chemical Institute Incorporated.

Medicinal Chemistry Major is offered on Campbelltown campus only.

Year 2

- 300553.1** Molecules of Life: Synthesis and Reactivity
300297.1 Analytical Chemistry 2

Choose one of

- 300545.1** Coordination Chemistry
300540.1 Biomolecular Dynamics

Year 3

- 300546.1** Drug Design and Synthesis
300537.1 Advanced Chemical Analysis

- 300324.1** Pharmacological Chemistry

Choose one of

- 300538.1** Advanced Inorganic Chemistry
300475.1 Molecular Pharmacokinetics

Major - Human Bioscience

M3041.1

The human bioscience major focuses on anatomy, physiology and pharmacology.

Offer

Campus	Mode
Campbelltown Campus	Internal

Unit Set Structure

Human Bioscience Major is offered on Campbelltown campus only.

Year 2

- 300751.1** Anatomy of the Thorax and Abdomen
300755.1 The Appendicular Skeleton
300505.1 Pharmacology

Year 3

- 300754.1** Neuroanatomy

Three units from Schedule B list (below)

Schedule B Units:

- 300307.1** Analytical Microbiology
300750.1 Anatomy of the Head and Neck
300749.1 Medical Microbiology
300321.1 Microbiology 2
300549.1 Human Molecular Biology
400267.2 Pathophysiology 2
300756.1 Topics in Physiology

Major - Nutrition and Physiology

M3042.1

The study of nutrition and human physiology incorporates knowledge of human biology and biochemistry to understand how the body utilizes nutrients and related substances for optimal health throughout the lifecycle. This major also addresses the physiological and nutritional foundations for understanding the nature of food and the physiological and epidemiological relationships between food, nutrients and components of food and common diet-related diseases prevalent in Australia. This major is recommended for students seeking an in-depth understanding of diet-related health issues and intending to work in allied or community health, education, or seeking

further graduate studies in nutrition, dietetics or public health.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Students must complete eight units from the following

Level 1

300753.1 Introduction to Human Physiology

Level 2

300219.3 Biochemistry 1
300220.1 Biochemistry 2

Level 3

300622.1 Human Physiology 2

Choose four of

Level 2

300649.1 Nutrition and Health 1
300650.1 Nutrition and Health 2
300360.1 Consumer Issues in Nutrition

Level 3

300653.1 Applied Nutrition
300786.1 Global Nutrition Food and Community
300715.1 Culinary Science

Major - Computer Forensics

M31015V2.1

Computer forensics focuses on the gathering of evidence (often as part of an investigation) from computers and computer networks. Such evidence may consist of actual files (e.g. an image) or the traces of a user's activities that are left in the activity logs of operating systems, browsers, databases, web proxies, or network firewalls, etc. Identifying such evidence requires in-depth technical knowledge of the interactions between hardware, the operating system, programs, and the network. Similarly, knowledge of cryptographic techniques is required where data has been encrypted and/or obfuscated. This major develops this requisite knowledge; it also develops the skills necessary to ensure that evidence is not corrupted, and can be documented and presented in an intelligible manner.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following eight units

300447.1	Computer Forensics Workshop
CP308A.1	Information Systems Ethics and Law
300149.1	Operating Systems
300165.2	Systems Administration Programming
300128.2	Information Security
300143.2	Network Security
300095.2	Computer Networks and Internets
300569.1	Computer Security

Major - Networked Systems

M31026V2.1

This major aims to develop graduates with sound skills in the discipline of networked computer systems. Recent advances in computer and telecommunications networked systems, particularly those based on TCP/IP, have increased the importance of network technologies in the discipline of computer science. This major covers a wide range of topics including computer communication network concepts and protocols, multimedia systems, Internet standards and technologies, network security, wireless and mobile computing, and distributed systems. The candidates are also introduced to some of the relevant current key research issues of the field.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following eight units

300128.2	Information Security
300095.2	Computer Networks and Internets
300166.1	Systems and Network Management
300575.1	Networked Systems Design
300143.2	Network Security
300149.1	Operating Systems
300115.1	Distributed Systems and Programming
300576.1	Networking Workshop

Major - Innovation Design Management

M3503IDM.1

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following eight units.

The following are core units.

200083.1	Marketing Principles
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300014.2 Design Management 3: Organisational Skills for Designers

The following are drawn from alternative/elective units.

300012.2 Design Management 1: Product Design Audit
300013.2 Design Management 2: Corporate Image and Identity
300015.2 Design Management 4: Design Process
200163.1 Innovation and Product Development
100800.2 Consumer Psychology
200154.2 Entrepreneurial Management and Innovation

Major - Interactive Industrial Graphics

M3503IIG2.1

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following eight units

The following are core units.

300302.1 Industrial Graphics 1: Presentation
300282.1 Industrial Graphics 2: Transition
300310.2 Industrial Graphics 3: 3D Solids

The following are drawn from alternative/elective units

300312.2 Industrial Graphics 4: Surface
300315.2 Industrial Graphics 5: Integrated
101180.1 Web and Time Based Design
100789.2 Interactive Design I
100949.2 Interactive Design II

Major - International Design Management

M3503INTDM.1

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following eight units.

The following are core units.

200083.1 Marketing Principles
300014.2 Design Management 3: Organisational Skills for Designers

The following are drawn from alternative/elective units.

300012.2 Design Management 1: Product Design Audit
300013.2 Design Management 2: Corporate Image and Identity
300015.2 Design Management 4: Design Process
200088.1 Brand and Product Management
61671.1 International Management

200154.2 Entrepreneurial Management and Innovation

Major - Therapeutic Recreation

M4000.1

Unit Set Structure

Students must complete the following eight units

400244.1 Introduction to Leisure and Recreation Theory
400968.1 Professional Practice in Aged Care and Disability
400246.2 Workplace Learning 1 (Therapeutic Recreation)
400789.2 Leisure Education Programming and Mental Health
400252.1 Workplace Learning 2 (Community Placement)
400254.2 Therapeutic Recreation Professional Project
400249.1 Ethical and Legal Issues in Health Care
400786.1 Professional Transition Project

Major - Health Promotion

M4001.1

Unit Set Structure

Students must complete the following eight units

400285.1 Public Health
400966.1 Health Politics, Policy and Planning
400286.2 Injury Prevention
400275.1 Health Planning Project
400784.1 Health Promotion Practice 1
400785.1 Health Promotion Practice 2
400249.1 Ethical and Legal Issues in Health Care
400786.1 Professional Transition Project

Major - Health Services Management

M4002.1

Unit Set Structure

Students must complete the following eight units

400277.2 Health Services Management
400966.1 Health Politics, Policy and Planning
400788.1 Health Services Workforce Management
400275.1 Health Planning Project
400787.1 Health Services Management Practice
400279.2 Health Services Financial Management
400249.1 Ethical and Legal Issues in Health Care
400786.1 Professional Transition Project

Major - Systems Programming

RU3010V2.1

This major aims to develop graduates with sound skills in the discipline of programming. The focus is on programming at the level of system calls to the underlying operating system and many of the units use the industry standard language for systems programming, namely C/C+++, as the vehicle of instruction. There is a strong emphasis on the development of highly efficient and reliable code that can provide support services for higher level application oriented programs, as well as the development of programs suitable for systems administration and management. Practical work utilises both Unix and Microsoft environments. This major is appropriate where a career in systems programming or systems administration is planned, or where the student wishes to develop advanced systems programming skills.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following eight units

300128.2	Information Security
300092.1	Computer Architecture
300149.1	Operating Systems
300115.1	Distributed Systems and Programming
300165.2	Systems Administration Programming
300168.1	Systems Programming 2
300143.2	Network Security
300569.1	Computer Security

Sub-major - Design Management

S3502DM.1

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units.

The following is a core unit.

300014.2	Design Management 3: Organisational Skills for Designers
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The following are drawn from alternative/elective units.

300012.2	Design Management 1: Product Design Audit
300013.2	Design Management 2: Corporate Image and Identity
300015.2	Design Management 4: Design Process

Sub-major - Industrial Graphics

S3502IG.1

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following five units

The following are core units.

300302.1	Industrial Graphics 1: Presentation
300282.1	Industrial Graphics 2: Transition
300310.2	Industrial Graphics 3: 3D Solids

The following are drawn from alternative/elective units.

300312.2	Industrial Graphics 4: Surface
300315.2	Industrial Graphics 5: Integrated

Sub-major - Sustainable Design

S3502SD.1

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units.

The following are core units.

300304.2	Sustainable Design: Materials Technology
300309.2	Sustainable Design: Life Cycle Analysis
300306.2	Sustainable Design: Sustainable Futures

The following are drawn from alternative/elective units.

300735.1	Automated Manufacturing
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Sub-major - Education Studies

SM1031.1

The Education Studies Sub-major comprises a foundation pool of units which addresses key issues in contemporary educational thinking and practice. Education has a key role to play in bridging the gap between social advantage and disadvantage, in transforming the lives of individuals and their families and building capacity within communities.

Offer

Campus	Mode
Bankstown Campus	Internal

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete four of the following units

101259.2	Learning and Creativity
101263.1	Education and Transformation
101117.1	Learning through Community Service
101661.1	Education in a Cosmopolitan Society
101662.1	Young People, Their Futures and Education
101663.1	Education for Sustainability

Sub-major - Computer Systems

SM3000.1

This sub-major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units

300096.4	Computer Organisation
300167.2	Systems Programming 1
300092.1	Computer Architecture
300149.1	Operating Systems

Sub-major - Systems Administration

SM3001.1

This sub-major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units

300167.2	Systems Programming 1
300103.1	Data Structures and Algorithms
300149.1	Operating Systems
300165.2	Systems Administration Programming

Sub-major - Systems Security

SM3002.1

This sub-major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units

300167.2	Systems Programming 1
300128.2	Information Security
300143.2	Network Security
300149.1	Operating Systems

Sub-major - Systems Programming

SM3003.1

This sub-major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Student must complete the following three units

300167.2	Systems Programming 1
300103.1	Data Structures and Algorithms
300149.1	Operating Systems

And choose one of

300115.1	Distributed Systems and Programming
300168.1	Systems Programming 2

Sub-major - Formal Systems

SM3004.1

This sub-major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Student must complete the following three units

300103.1	Data Structures and Algorithms
300121.1	Formal Languages and Automata
300404.1	Formal Software Engineering

And choose one of

300368.1	Intelligent Systems
300093.1	Computer Graphics
200237.2	Mathematics for Engineers 1
200193.1	Abstract Algebra
200033.3	Applied Statistics
200042.2	Introduction to Operations Research

Sub-major - Applied Mathematics

SM3005.1

This sub-major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following unit

200237.2	Mathematics for Engineers 1
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And choose three of

200238.1	Mathematics for Engineers 2
200242.2	Mathematics for Engineers 3
200023.2	Analysis
200193.1	Abstract Algebra
200033.3	Applied Statistics
200042.2	Introduction to Operations Research
200027.1	Linear Algebra

Sub-major - Web Application Development (for Computing Students)

SM3006.1

This sub-major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units

300582.1	Technologies for Web Applications
300583.1	Web Systems Development
300111.1	Developing Web Applications with XML
300574.1	Internet Structures and Web Servers

Sub-major - Web Application Development (for Non-Computing Students)

SM3007.1

This sub-major is available to all UWS students except those enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following three units

300580.1	Programming Fundamentals
300582.1	Technologies for Web Applications
300583.1	Web Systems Development

And choose one of

300104.2	Database Design and Development
300570.2	Human-Computer Interaction
300569.1	Computer Security
300111.1	Developing Web Applications with XML
300574.1	Internet Structures and Web Servers

Sub-major - Networking

SM3008.1

This sub-major is available to all students except those enrolled in the Bachelor of Computing (Networks).

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following three units

300565.1	Computer Networking
300095.2	Computer Networks and Internets
300575.1	Networked Systems Design

And choose one of

300143.2	Network Security
300166.1	Systems and Network Management
300088.1	Broadband Networking

Sub-major - Health Information Management

SM3009.1

This sub-major deals with the management of Health Information and the management and analysis of that data via databases. This sub-major is available to all students except those enrolled in the Health Informatics key program within the Bachelor of Computing course.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units

300566.1	Introduction to Health Informatics
300104.2	Database Design and Development
300567.2	e-Health
200036.2	Data Mining and Visualisation

Sub-major - Health Information Applications

SM3010.1

This sub-major will deal with the application of approaches, tools and techniques and the development of programs appropriate for Health Information systems. This sub-major is available to all students except those enrolled in the Health Informatics key program within the Bachelor of Computing course.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units

300566.1	Introduction to Health Informatics
300582.1	Technologies for Web Applications
300567.2	e-Health
300568.1	Services Computing in Healthcare

Note: 300582 Technologies for Web Applications requires 300580 Programming Fundamentals as a pre-requisite.

Sub-major - Entertainment Computing

SM3011.1

This sub-major is available to all students.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units

300580.1	Programming Fundamentals
300491.1	Games Technology
300492.1	Games Theory and Design
300093.1	Computer Graphics

Sub-major - Biochemistry and Molecular Biology

SM3016.1

This sub-major is available to all students.

Offer

Campus	Mode
Campbelltown Campus	Internal
Hawkesbury Campus	Internal
Parramatta Campus	Internal

Unit Set Structure

Students must complete four units as follows

Level 2

Choose one of

300219.3	Biochemistry 1
300555.1	Proteins and Genes

Choose one of

300220.1	Biochemistry 2
300548.1	Human Metabolism and Disease

Level 3

Choose one of

300234.2	Molecular Biology
300549.1	Human Molecular Biology

And choose one of

300544.1	Cell Signalling
300229.2	Immunology
300408.1	Mammalian Cell Biology and Biotechnology
300407.1	Mammalian Molecular Medicine

300757.1 Molecular Biology of the Immune System

Sub-major - Animal Science

SM3020.1

This sub-major is not available to students who complete the Bachelor of Science (Animal Science).

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Students must complete four units from the following.

Level 1

300560.1	Introduction to Animal Science
300425.2	Introduction to Wildlife Studies

Level 2

300562.1	Animal Nutrition and Feeding
300563.1	Animal Reproduction
300219.3	Biochemistry 1
300623.2	Genetics
300620.1	Human Physiology 1

Level 3

300427.2	Animal Production
300564.2	Animal Behaviour
300334.1	Invertebrate Biology
300470.2	Vertebrate Biodiversity

Sub-major - Geochemistry

SM3022.1

This sub-major is available to all students.

Offer

Campus	Mode
Parramatta Campus	Internal

Unit Set Structure

Students must complete any four units from the following.

Level 1

300232.1	Introduction to Earth Sciences
300613.1	Introductory Geochemistry: Earth, Resources and Environments

Level 2

300611.2	Chemical Mineralogy
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300612.1 Geochemical Systems

Level 3

300218.1	Applied Aspects of Inorganic Chemistry
300614.1	Environmental Geochemistry
300645.1	Science Research Project 2

Sub-major - Forensic Chemistry

SM3024.1

This sub-major is also form part of the course 3637 Bachelor of Natural Science.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Students must complete four units.

300377.1	Forensic Analysis of Physical Evidence
300493.1	Forensic and Environmental Analysis
300494.1	Forensic Chemistry
300656.1	Laboratory Quality Management

Sub-major - Mathematics

SM3025.1

This sub-major is available to all students. This sub-major may meet the NSW Institute of Teachers accreditation requirements for teaching Mathematics as a second subject in NSW state high schools.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete four units.

300672.1	Mathematics 1A
300673.1	Mathematics 1B

And choose two of

200028.2	Advanced Calculus
200027.1	Linear Algebra
200030.1	Differential Equations

Sub-major - Statistics**SM3026.1**

This sub-major is available to all students.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete four units.

Choose one unit from

200263.2	Biometry
200032.3	Statistics for Business
300700.3	Statistical Decision Making

And choose at least one of

200033.3	Applied Statistics
300606.1	Foundations of Statistical Modelling and Decision Making
300104.2	Database Design and Development

And choose at least one of

200037.2	Regression Analysis & Experimental Design
200038.2	Time Series and Forecasting
200036.2	Data Mining and Visualisation
200039.1	Surveys and Multivariate Analysis

Sub-major - Computational Decision Making**SM3027.1**

This sub-major is available to all students.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete four units.

200025.1	Discrete Mathematics
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And choose one of

200263.2	Biometry
200032.3	Statistics for Business
300700.3	Statistical Decision Making

And choose two of

300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200027.1	Linear Algebra
300670.1	Optimisation Techniques

300671.1	Principles and Practice of Decision Making
200044.1	Simulation Techniques

Students enrolled in Bachelor of Information and Communications Technology course may replace 200025 Discrete Mathematics with 300699 Discrete Structures and Complexity.

Note: For students who want to complete a Mathematics sub-major, but may not necessarily want to qualify for NSW Institute of Teachers accreditation, 200029 Numerical Analysis would be added to the list of Level 2 units and 200024 Mathematical Finance would be added to the list of Level 3 units.

Sub-major - Knowledge Discovery and Data Mining**SM3028.1**

This sub-major is available to all students.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete four units as follows

300606.1	Foundations of Statistical Modelling and Decision Making
300104.2	Database Design and Development
200036.2	Data Mining and Visualisation

And choose one of

200263.2	Biometry
200032.3	Statistics for Business
300700.3	Statistical Decision Making

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.

Unit Set Structure

Students must successfully complete the following four specialist units

200503.1	Construction Information Systems
200487.2	Quantity Surveying 2
300748.1	Quality and Value Management
300726.1	Estimating 2

Sub-major - Conservation Biology

SM3030.1

Conservation biology has emerged as a field of study from a synthesis of the ecological, demographic, genetic and societal risks faced by small natural populations. This major equips students with skills in fundamental biology, in the ecology of populations and communities, in population genetics and in the legal conservation framework to enable them to work in this area.

Offer

Campus	Mode
Hawkesbury Campus	Internal

Unit Set Structure

Students must complete four units as follows

Level 1

300792.1 Biology A - The Diversity of Life

Level 2

300634.1 Ecology
300623.2 Genetics

Level 3

Choose one of

300465.1 Aquatic Ecology
300617.2 Conservation Biology

Sub-major - IT Support

SM3031.1

This sub-major is only available to students enrolled in the Bachelor of Information and Communications Technology course.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete four units as follows

300150.2 PC Workshop
300576.1 Networking Workshop
300136.3 I.T. Support Practicum

And choose one of

200083.1 Marketing Principles
300167.2 Systems Programming 1
200120.1 E-Business Fundamentals and Systems

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units as follows

300029.2 Engineering Visualization
300167.2 Systems Programming 1
300096.4 Computer Organisation

And one of

300092.1 Computer Architecture
300149.1 Operating Systems
300044.1 Microcontrollers and PLCs

Sub-major - Construction

SM3033.1

This sub-major is available to any student in UWS 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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units

300707.1 Building 2
BG302A.1 Building Regulation Studies
200471.2 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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following units

300071.1	Electrical Machines 1
300481.1	Engineering Electromagnetics

And two of

300026.2	Energy Systems
300070.3	Electrical Drives
300024.2	Electronic Systems Design

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units

300469.2	Introductory Chemistry
EY101A.1	Terrestrial Environment Management
MG309A.1	Water and Waste Management
EH321A.1	Air Quality Assessment & Management (UG)

Sub-major - Wireless Engineering

SM3036.1

This sub-major is available to students other than those enrolled in B Engineering (Telecommunications) Key Program. This sub-major covers specialised topics on

wireless communications, in addition to general concepts on telecommunications.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Student must complete the following units

300007.1	Communication Systems
300065.3	Wireless Communications
300024.2	Electronic Systems Design

And one of

300068.2	Communication Electronics
300489.1	Radio and Satellite Communication

Sub-major - Microbiology

SM3037.1

A microbiology sub-major will equip students with the skills and knowledge of microorganisms and molecular microbiology relevant for employment in research laboratories and industries including biotechnology companies, medical and environmental laboratories, food, wine and pharmaceutical companies, quality assurance and scientific sales. The major which includes the study of bacteria, fungi, protists and viruses, will also provide a foundation for research at Honours and postgraduate levels.

Offer

Campus	Mode
Campbelltown Campus	Internal
Hawkesbury Campus	Internal
Parramatta Campus	Internal

Unit Set Structure

Students must complete four units as follows

Parramatta and Hawkesbury Campuses

Level 2

300300.1	Microbiology 1
300321.1	Microbiology 2

Level 3

Choose two of

300307.1	Analytical Microbiology
300647.1	Environmental Biotechnology
300749.1	Medical Microbiology
300234.2	Molecular Biology

Note: 300307 - Analytical Microbiology is only available on Hawkesbury campus.

Campbelltown Campus**Level 2**

300300.1	Microbiology 1
300321.1	Microbiology 2

Level 3

Choose two of

300749.1	Medical Microbiology
300549.1	Human Molecular Biology
300757.1	Molecular Biology of the Immune System

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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units

300732.1	Structural Analysis
300730.1	Steel Structures
300739.1	Timber Structures (UG)
300736.1	Concrete 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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units

300482.1	Engineering Geology and Concrete Materials
300738.1	Surveying for Engineers
300486.1	Infrastructure Engineering
300737.1	Environmental 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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following units

300035.2	Kinematics and Kinetics of Machines
300735.1	Automated Manufacturing
300044.1	Microcontrollers and PLCs

And one of

300056.2	Robotics
300043.2	Mobile 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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units

200237.2	Mathematics for Engineers 1
300482.1	Engineering Geology and Concrete Materials
300731.1	Soil Engineering
300485.1	Foundation 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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units

300463.1	Fundamentals of Mechanics
300040.1	Mechanics of Materials
300733.1	Introduction to Structural Engineering
300732.1	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.

Offer

Campus	Mode
Penrith Campus	Internal

Unit Set Structure

Students must complete the following four units

200237.2	Mathematics for Engineers 1
300740.1	Water Engineering
300479.1	Drainage Engineering
300734.1	Water Resources Engineering (UG)

Units

400958.1 A Field Study: Comparative Studies of Health Care Delivery

Credit Points 10 **Level** 2

Special Requirements

Students enrolled in this unit will be visiting health care facilities, and may require a criminal record check, and working with children check. Students will need a valid passport and visa that qualify them to travel to the country of study. Students will be required to travel as a member in the study group to the country of study. Course charges are available only as a package deal, including accommodation and airfare, travel and health insurance. A deposit is to be paid at the time of registration. In the event of late withdrawal, this deposit is non-refundable.

.....

This unit is designed to enable students studying health courses to gain insight into, and develop an understanding of health care delivery and contemporary issues confronting health care in Australia and in the study country in this study-abroad unit.

200193.1 Abstract Algebra

Credit Points 10 **Level** 3

Assumed Knowledge

200025 - Discrete Mathematics

Equivalent Units

14702 - Advanced Algebra, 14383 - Algebra 3

.....

This unit develops algebraic thought to a high level. The abstract concepts involved in the main topics (group theory and number theory) have many applications in science and technology, and the unit includes an application to cryptography.

700056.1 Academic English (UWSCFS)

Credit Points 10 **Level** Z

Special Requirements

Students must be enrolled at UWS College.

.....

This unit is designed to improve English proficiency across the four macro skills, of 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.

200101.2 Accounting Information for Managers

Credit Points 10 **Level** 1

Corequisite

200336.1 Business Academic Skills

Equivalent Units

61111 - Intro Financial Accounting, 84458 - Engineering Management 3, 89109 - Management for Engineers 2, AC105A - Finance and Accounting, H1746 - Financial and Management Accounting 1, MG324A - Management 3.2, 200103 - Accounting Reports and Decisions

Special Requirements

External offerings for this unit are only available to students who are enrolled in a Property course or Property key program. Co-requisite 200336 - Business Academic Skills only applies to students in courses 2739 Bachelor of Business and Commerce, 2741 Bachelor of Business and Commerce (Advanced Business Leadership) and 2740 Bachelor of Business and Commerce/Bachelor of Laws.

.....

This unit provides exposure to financial and management accounting information from a user of accounting information viewpoint. The unit aims to provide breadth of awareness and knowledge in relevant fields of accounting essential to decision making for managers.

700005.1 Accounting Information for Managers (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

200101 - Accounting Information for Managers

Special Requirements

Students must be enrolled at UWS College.

.....

This unit provides exposure to financial and management accounting information from a user of accounting information viewpoint. The unit aims to provide breadth of awareness and knowledge in relevant fields of accounting essential to decision making for managers.

200534.2 Accounting Information Systems

Credit Points 10 **Level** 3

Assumed Knowledge

Basic financial and management accounting fundamentals, including use of spreadsheets in accounting and the use of a computerised accounting package.

Equivalent Units

AC202A - Accounting Information Systems, H3331 - Accounting Information Systems, 61141 - Accounting Information Systems, 200114 - Issues in Accounting Information Systems

.....

This unit considers the design and implementation of accounting information systems as a data model for

resource allocation and management of an organisation. It includes consideration of current trends in information management and the changing regulatory requirements.

400873.1 Acupuncture Techniques

Credit Points 10 **Level** 3

Assumed Knowledge

Assumed knowledge equivalent to Channels and Points 1 and 2.

Equivalent Units

400350 - Acupuncture 2

.....

This unit consolidates and extends students' knowledge of acupuncture theory and practice, and provides further opportunity to develop practical skills. Students are introduced to the theory of point combinations and the development of acupuncture prescriptions and treatment plans. Practical sessions include advanced needle manipulation, moxibustion, cupping, plum blossom and prismatic needling. This unit also expands upon the student's understanding of TCM theory and practice principles.

200267.1 Advanced Accounting

Credit Points 10 **Level** 3

Prerequisite

200109.1 Corporate Accounting Systems

Equivalent Units

200102 - Accounting Philosophies and Theories

.....

This unit addresses the advanced aspects of accounting with particular emphasis on accounting theories and how they assist us in understanding current accounting practice and accounting standards. This unit focuses on the relationship between the theoretical concepts and current news and events.

200028.2 Advanced Calculus

Credit Points 10 **Level** 2

Assumed Knowledge

200189 - Concepts of Mathematics

Equivalent Units

14504 - Mathematics 4, 14379 - Advanced Calculus, 14385 - Calculus 3, J2764 - Mathematics 2.1, J2765 Mathematics 2.2

Incompatible Units

200238 - Mathematics for Engineers 2

.....

This unit is designed for students undertaking studies in mathematics, statistics, operations research and mathematical finance. It provides further mathematical training in the areas of multivariable and vector calculus, which is essential to the understanding of many areas of both pure and applied mathematics.

300537.1 Advanced Chemical Analysis

Credit Points 10 **Level** 3

Assumed Knowledge

Material covered in Analytical Chemistry 2.

Prerequisite

300297.1 Analytical Chemistry 2

Equivalent Units

300298 - Analytical Chemistry 3, J3657 - Analytical Chemistry 3, CH301A - Analytical Chemistry 3.1

.....

Students studying at Hawkesbury or Parramatta campus should refer to 300298 - Analytical Chemistry 3. This unit provides the student with skills to carry out the more advanced wet chemical analysis and provides an understanding of the principles of instrumental analysis, covering the areas of spectroscopy, chromatography, electrochemistry, thermal methods and automated methods of analysis. The techniques of analytical method development, inorganic and organic residue analysis, herbal analysis and forensic toxicology analysis will be discussed. Aspects of quality control and quality assurance will also be included.

300586.1 Advanced Computer Science Activities 1

Credit Points 0 **Level** 1

Special Requirements

Students must be enrolled in course 3634 Bachelor of Computer Science (Advanced).

.....

This unit is only for Bachelor of Computer Science (Advanced) students in year one of their studies. Students will participate in industry and research based extension activities (non-assessable). These activities will be identified with the goal of exposing students early in their degree and integrating them into a culture of academic enquiry, problem solving, knowledge generation and scholarship and an awareness of the challenges and current issues confronting the computing/IT industry. The unit will be used to record student activities and a satisfactory/ unsatisfactory grade will be applied at the end of each year.

300587.1 Advanced Computer Science Activities 2

Credit Points 0 **Level** 2

Special Requirements

Students must be enrolled in course 3634 Bachelor of Computer Science (Advanced).

.....

This unit is only for Bachelor of Computer Science (Advanced) students in year two of their studies. Students will participate in industry and research based extension activities (non-assessable). These activities will be identified with the goal of exposing students early in their degree and integrating them into a culture of academic

enquiry, problem solving, knowledge generation and scholarship and an awareness of the challenges and current issues confronting the computing/IT industry. The unit will be used to record student activities and a satisfactory/ unsatisfactory grade will be applied at the end of each year.

300588.1 Advanced Computer Science Activities 3

Credit Points 0 **Level** 3

Special Requirements

Students must be enrolled in course 3634 Bachelor of Computer Science (Advanced).

.....

This unit is only for Bachelor of Computer Science (Advanced) students in year three of their studies. Students will participate in industry and research based extension activities (non-assessable). These activities will be identified with the goal of exposing students early in their degree and integrating them into a culture of academic enquiry, problem solving, knowledge generation and scholarship and an awareness of the challenges and current issues confronting the computing/IT industry. The unit will be used to record student activities and a satisfactory/ unsatisfactory grade will be applied at the end of each year.

300763.1 Advanced Dynamics

Credit Points 10 **Level** 3

Prerequisite

300480.1 Dynamics of Mechanical Systems

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.

300668.1 Advanced Engineering Thesis

Credit Points 60 **Level** 5

Assumed Knowledge

Students should have achieved at least 240 Credit Points because this is an honours level unit. Students must have a course GPA equal to or greater than 5.5, which is required to maintained their candidature in course 3636 Bachelor of Engineering (Advanced).

Prerequisite

300053.2 Professional Practice

Corequisite

81999.1 Industrial Experience (Engineering)

Incompatible Units

300484 - Engineering Thesis, 300483 - Engineering Project

Special Requirements

This unit is only available to students in course 3636 Bachelor of Engineering (Advanced). An eligible student must enrol in this unit in two consecutive halves (e.g., 1H and 2H in 2009, or 2H in 2009 and 1H in 2010).

.....

This unit provides students with the opportunity to conduct original research on their chosen topics under the supervision of academics. Students are encouraged to disseminate their research results as refereed publications.

300666.1 Advanced Engineering Topic 1

Credit Points 10 **Level** 3

Assumed Knowledge

Students should have achieved at least 160 Credit Points to be able to study the advanced engineering topics in the unit. Students must have a course GPA equal to or greater than 5.5, which is required to maintained their candidature in course 3636 Bachelor of Engineering (Advanced).

Special Requirements

Students must be enrolled in course 3636 Bachelor of Engineering (Advanced).

.....

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.

300667.1 Advanced Engineering Topic 2

Credit Points 10 **Level** 4

Assumed Knowledge

Students must have a course GPA equal to or greater than 5.5, which is required to maintained their candidature in course 3636 Bachelor of Engineering (Advanced).

Prerequisite

300666.1 Advanced Engineering Topic 1

Special Requirements

Students must be enrolled in course 3636 Bachelor of Engineering (Advanced).

.....

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.

300780.1 Advanced Food Science and Technology

Credit Points 10 **Level** 3

Prerequisite

300499.1 Food Science 2

Incompatible Units

300636 - Food Processing and Analysis, 300641 - Packaging Science and Technology

.....

This unit gives students an appreciation of the physicochemical and molecular processes involved in food manufacture and their integration to produce safe, nutritious and palatable food. The structure-function relationships of ingredients (water, carbohydrates, proteins and lipids) will be explored, addressing the effect of concentration, ionic environment (pH, salt, sequestrant, etc.), glass transition properties, factors influencing non-enzymic browning, starch retrogradation, lipid oxidation and rancidity. Students will learn about methods for monitoring and controlling food quality and spoilage, including shelf-life testing and the safety evaluation of additives in foods. Various operations used in food processing (emerging technologies, thermal and cold processes, drying and dehydration, and extrusion) and packaging technologies, including active packaging will be studied. A practical program will complement the theory to demonstrate the use of some of the operations, and the effects of varying processing parameters and ingredients on quality of final products. Students will also be taken on conducted tours of food production sites with a view to not only observe activities, but also to document and catalogue ingredients, operations and food products.

300538.1 Advanced Inorganic Chemistry

Credit Points 10 **Level** 3

Prerequisite

300545.1 Coordination Chemistry OR **300230.1** Inorganic Chemistry 2

Equivalent Units

300231 - Inorganic Chemistry 3, J3668 - Inorganic Chemistry 3

.....

Students studying at Hawkesbury or Parramatta campus should refer to 300231 - Inorganic Chemistry 3. Advanced Inorganic Chemistry is based on the foundations laid in the unit Coordination Chemistry. It covers structure and bonding in inorganic chemistry, higher coordination numbers, lanthanide and actinides, followed by the bioinorganic chemistry of zinc and iron in mammalian and microbial systems. Kinetics and mechanism of inorganic reactions are examined. The important area of organo-transition metal chemistry and catalysis is introduced. Students build on their familiarity with the literature of inorganic chemistry and are introduced to several advanced databases of chemical information. The laboratory sessions develop knowledge of advanced techniques such as anaerobic syntheses and instrumental techniques of characterisation such as NMR, IR and electronic spectra.

This is also used to develop an appreciation of the role of computer-based molecular modelling in inorganic chemistry.

300761.1 Advanced Mechanics of Materials

Credit Points 10 **Level** 3

Assumed Knowledge

This subject assumes that the student has undertaken the first and second year studies in UWS engineering courses or equivalent.

Prerequisite

300040.1 Mechanics of Materials

.....

Extending upon the unit 300040 Mechanics of Materials, this unit will look at what happens when components undergo non-elastic deformation. It will look at how stresses depend on the orientation of the reference axes, and at how materials fail – including creep, fatigue and stress concentrations. It will then look at properties of metals, including alloys and phase diagrams.

300591.1 Advanced Science Research Project A

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge equivalent to successful completion of all Level 1 core units in the student's key program and a GPA greater than or equal to 5.0.

Equivalent Units

Students currently enrolled in course 3562 Bachelor of Science (Advanced Science) who wish to transfer to the new program will be given advanced standing for any projects successfully completed.

Special Requirements

Students must be enrolled in course 3562 Bachelor of Science (Advanced Science).

.....

This unit introduces the student to thinking as a research scientist whilst developing skills in a particular area of interest. The student undertakes a minor research project under directed supervision, during which they outline the problem and undertake a full literature review, undertake appropriate research, and analyze and discuss the results in research paper and lecture format.

300592.1 Advanced Science Research Project B

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge equivalent to successful completion of all Level 1 core units in the student's key program and a Grade Point Average greater than 5.

Equivalent Units

Students currently enrolled in 3562 Bachelor of Science (Advanced Science) who wish to transfer to the new program will be given advanced standing for any projects successfully completed.

Special Requirements

Students must be enrolled in course 3562 Bachelor of Science (Advanced Science).

.....

This unit introduces the student to thinking as a research scientist whilst developing skills in a particular area of interest. The student undertakes a minor research project under directed supervision, during which they outline the problem and undertake a full literature review, undertake appropriate research, and analyze and discuss the results in research paper and lecture format.

300593.1 Advanced Science Research Project C

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge equivalent to successful completion of all Level 1 core units in the student's key program and a GPA greater than 5.0

Equivalent Units

Students currently enrolled in 3562 Bachelor of Science (Advanced Science) who wish to transfer to the new program will be given advanced standing for any projects successfully completed.

Special Requirements

Students must be enrolled in course 3562 Bachelor of Science (Advanced Science).

.....

This unit introduces the student to thinking as a research scientist whilst developing skills in a particular area of interest. The student undertakes a minor research project under directed supervision, during which they outline the problem and undertake a full literature review, undertake appropriate research, and analyze and discuss the results in research paper and lecture format.

400888.1 Advanced Sports Physiology

Credit Points 10 **Level** 3

Prerequisite

400326.1 Exercise Prescription for General Populations AND **400883.1** Exercise Bioenergetics AND **400885.1** Sport and Exercise Physiology

Equivalent Units

400329 - Sports Physiology

Special Requirements

This unit is only available to students enrolled in course 4658 - Bachelor of Health Science (Sport and Exercise Science). To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010, possess a current WorkCover Authority approved First Aid Certificate.

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This unit presents the knowledge and laboratory skills essential to understanding the physiological demands on the sports participant, as well as to develop, implement and evaluate sports-specific training programs. Students will develop the knowledge and skills necessary to perform and interpret results for a number of standard laboratory and field-based physiological tests used in talent identification and the assessment of high performance athletes. Prescription focuses on the development and implementation of sport specific fitness programs. Also covered are the physiology of ergogenic aids, overtraining, muscle fatigue and soreness; physiological factors limiting performance; and physiological responses to exercise in challenging environments.

300747.1 Advanced Topics and Research Skills

Credit Points 20 **Level** 5

Assumed Knowledge

Successful completion of a Bachelors degree in a science discipline or tourism. Normally the student will have achieved a grade-point average of greater than 5.0 in Level 2 and 3 units.

Equivalent Units

300410 - Advanced Topics and Research Skills

Special Requirements

Students must be enrolled in an honours or postgraduate degree.

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This unit will allow students to explore more advanced topics, including wider areas of research and their applications in science, technology, tourism or the environment. It will encompass and build upon subject areas and techniques already encountered in the undergraduate program, and provide students with an appreciation of more sophisticated applications of scientific principles, emphasising the practical, social, environmental and/or economic value of the sciences. In addition, students will further develop competency in the communication of research results and conclusions through participation in seminar series within the College of Science, Technology and Environment.

200411.1 Advanced Topics in Mathematics

Credit Points 30 **Level** 5

Special Requirements

Students must be enrolled in a Bachelors honours course.

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The Advanced Topics in Mathematics is an integral part of the Bachelor of Science (Honours) course work program. It is structured in such a way that there are extensive links with the other components in the program (Honours Thesis). In undertaking and completing tasks associated with this component the student will be working toward the ultimate goal of completion of the Thesis document. Successful completion of the Advanced Topics in Mathematics Program will allow development of skills,

knowledge and a way of thinking to assist in the learning of mathematics/statistics, which will help in the production of the thesis. In this program students will be given the opportunity to present work in assignments and examinations.

300790.1 Agriculture, Food and Health

Credit Points 10 **Level** 2

Assumed Knowledge

Basic understanding of resource sustainability issues

Incompatible Units

300609 - Ecology of Production

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This unit is designed to strengthen student understanding of the important interactions between food, agriculture, environment and health. Traditionally the topics of food, agriculture, environment and health have been taught mainly in isolation from each other. It is becoming increasingly apparent that this traditional approach bears little relevance to real world issues and in some cases acts as an impediment to progress. Alternatives to the current 'western industrialised' food production system will be explored. These include organic agriculture, local farmer markets, and consumer driven changes to food production systems.

300524.1 Agronomy

Credit Points 10 **Level** 2

Equivalent Units

AG307A - Agronomy

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This unit aims to enable students to develop a sound understanding of the broad principles involved in the production and management of crops and pastures, identification of plant species, linking crop/pasture growth to animal production, and interacting with researchers, community workers and industry professionals in understanding broader and specific issues related to agronomy. Topics include basic crop and pasture botany, seed physiology, crop/pasture establishment, growth, development, adaptation, grazing management and plant protection. Students manage a crop in the field and a pot trial in the glasshouse. The practical sessions enable students to apply the management principles and become familiar with various measuring techniques.

300777.1 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.

300628.1 Air Quality Management

Credit Points 10 **Level** 3

Equivalent Units

EH321A - Air Quality Assessment and Management (UG)

.....

In 2011 this unit replaced by 300777 - Air Quality and Climate Change. This unit is designed for students who wish to gain knowledge of air pollution, its 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.

400815.2 Alterations in Breathing, Work/Leisure and Mobility

Credit Points 10 **Level** 2

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This unit will elaborate the mechanisms of health breakdown and their application to professional nursing practice in supporting people who are affected by alteration in breathing, work/leisure, sexuality and mobility.

400814.2 Alterations in Nutrition, Elimination and Sexuality

Credit Points 10 **Level** 2

Equivalent Units

400754 - Understanding Alterations in Nutrition and Elimination

.....

This unit will elaborate the mechanisms of health breakdown and their application to professional nursing practice in supporting people who are affected by alteration in eating, drinking, nutrition, elimination and sexuality.

200023.2 Analysis

Credit Points 10 **Level** 3

Prerequisite

300673.1 Mathematics 1B

Equivalent Units

14388 - Advanced Mathematical Topics

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Analysis provides the theoretical basis of real and complex numbers, including differentiation and integration. Topics include: field axioms and completeness, sequences, series, convergence, compactness, continuity, differentiability, integrability, and related theorems in both the real and complex number systems.

300297.1 Analytical Chemistry 2

Credit Points 10 **Level** 2

Assumed Knowledge

Level 1 Chemistry

Prerequisite

300224.1 Chemistry 1 OR **300554.1** Principles of Chemistry

Equivalent Units

14132 - Chemical Analysis 1, CH201A - Analytical Chemistry 2.2, J2726 - Analytical Chemistry 2

Incompatible Units

14247 - Inorganic and Analytical Chemistry

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This unit will aim to develop within the student an understanding of, and an appreciation for, the fundamentals of analytical chemistry. The student will be exposed to the theory and practice of a range of chemical analyses with emphasis on 'wet' or 'classical' methods, and an introduction to some instrumental methods. An important component of this unit is to develop within the student laboratory skills in chemical analysis. Topics covered in this unit include: the evaluation of analytical data; sampling and sample preparation; unit operations in analytical chemistry; stoichiometry and equilibrium; gravimetric analysis; volumetric analysis; separation methods; spectroscopic methods of analysis; electrochemical methods of analysis; analysis of real samples.

300298.1 Analytical Chemistry 3

Credit Points 10 **Level** 3

Assumed Knowledge

Successful completion of first year degree level chemistry and a second year analytical chemistry subject.

Prerequisite

300297.1 Analytical Chemistry 2

Equivalent Units

14152 - Chemical Analysis 2, CH301A - Analytical Chemistry 3.1, J3657 - Analytical Chemistry 3

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Students studying at Hawkesbury or Parramatta campus should refer to 300538 - Advanced Chemical Analysis. This unit equips the student with: an understanding of the principles of instrumental analysis; enhanced knowledge of contemporary analytical chemistry; wider experience of modern analytical instrumentation and its applications; improved skills in laboratory analysis using a range of instrumental techniques. Techniques covered include: separation methods, atomic spectroscopy, electrochemical methods, X-ray methods, principles of spectroscopic methods, electron microscopy and mass spectroscopy, gas and liquid chromatography, automated methods of analysis, analytical method development, quality control and quality assurance, pesticide residue analysis, toxicological (forensic) analysis.

300307.1 Analytical Microbiology

Credit Points 10 **Level** 3

Assumed Knowledge

A good general knowledge of analytical methods in microbiology.

Prerequisite

300300.1 Microbiology 1

Equivalent Units

MI301A - Analytical Microbiology (V1)

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This unit in analytical microbiology aims to introduce students to analytical techniques for the detection, identification and enumeration of microorganisms in food, pharmaceutical, cosmetic and environmental materials.

300556.1 Analytical Protein Science

Credit Points 10 **Level** 3

Assumed Knowledge

Detailed knowledge of protein structure at primary, secondary, tertiary, and quaternary levels; relationship between protein structure and protein function; protein denaturation; isoelectric points and their relevance for protein separation; basic knowledge of and competency in biochemical laboratory techniques, such as spectrophotometry, centrifugation, enzyme assay, graphical methods and biochemical calculations.

Prerequisite

300555.1 Proteins and Genes OR **300219.1** Biochemistry 1

Equivalent Units

J3656 - Analytical Biochemistry

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This unit covers a range of biochemical techniques and methodologies used for both analysis and purification of biological molecules. It includes advanced aspects of spectroscopy, centrifugation, radioisotopes; RNA isolation and detection, chromatographic principles and methods (gel filtration, ion exchange, affinity, hydrophobic interaction, chromatofocusing); electrophoresis principles and methods (SDS-PAGE, isoelectric focusing, pore gradient, two-dimensional, capillary); protein extraction and separation strategies. The methods and applications of proteomic research are included. The laboratory work parallels lecture material, and students gain hands-on experience in many of these techniques. The importance of quality control is emphasised and quality control programs are carried out concurrently with other laboratory work.

300750.1 Anatomy of the Head and Neck

Credit Points 10 **Level** 3

Equivalent Units

300316 - Anatomy of the Head and Neck

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This unit provides a thorough understanding of the topographic anatomy of the human head and neck areas. It undertakes this by utilising a regional approach (as against a systems approach), emphasising the interplay of the different body systems. Cadaver specimens are used to facilitate the learning of spatial relationships between bony and soft tissues.

300751.1 Anatomy of the Thorax and Abdomen

Credit Points 10 **Level** 2

Equivalent Units

E2320 - Human Biological Sciences IV, 300317 - Anatomy of the Thorax and Abdomen

.....

This unit provides a thorough understanding of the topographic anatomy of the human thorax and abdomen. It undertakes this by utilising a regional approach (as against a systems approach), emphasising the interplay of the different body systems within this part of the axial skeleton. The relationship between form and function, at a topographical level, will underpin all teaching of this unit.

300564.2 Animal Behaviour

Credit Points 10 **Level** 3

Special Requirements

Students must have completed two level 2 units from the Bachelor of Science or Bachelor of Natural Sciences.

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Focusing on a variety of wildlife and domestic animal species, the unit addresses how classic ecological and evolutionary principles shape animal behaviour by weighing the experimental and observational evidence for each idea. We illustrate concepts with examples from a wide range of taxonomic groups of animals in diverse ecosystems. Students will conduct experimental field and laboratory procedures, as well as observe and work with groups of animals on the UWS Hawkesbury campus.

300424.1 Animal Health and Welfare

Credit Points 10 **Level** 2

Assumed Knowledge

General biology.

Special Requirements

All activities in the unit involving live animals must be approved by the UWS Animal Care and Ethics Committee. All activities in the unit involving the use of animal specimens must be approved by the UWS Institutional Biosafety and Radiation Safety Committee.

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This unit will introduce students to the major issues related to animal health and welfare that form essential knowledge for those working with animals. In particular, students will gain an understanding of disease agents, disease transmission and methods for disease control as well as an introduction to disease diagnosis. In addition, students will gain knowledge about the relationships between animal management and the health and welfare expectations for domesticated and wild animals. The causes of common animal diseases will be introduced as well as the legal obligations of those owning, working or observing animals with respect to maintaining and monitoring their health and welfare. This unit will be taught in a block of eight weeks.

300562.1 Animal Nutrition and Feeding

Credit Points 10 **Level** 3

Assumed Knowledge

Basic knowledge of biology

Equivalent Units

NT305A - Equine Nutrition and Feeding

Special Requirements

All activities in the unit involving live animals must be approved by the UWS Animal Care and Ethics Committee. All activities in the unit involving the use of animal specimens must be approved by the UWS Institutional Biosafety and Radiation Safety Committee.

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This unit aims to give students a good understanding of nutrient requirements of different types of animals and the nutrient composition of common feeds so that they can evaluate and formulate rations to meet a range of animal requirements at different stages of growth, reproduction, lactation and production.

300608.1 Animal Physiology

Credit Points 10 **Level** 2

Assumed Knowledge

Sound knowledge of undergraduate level 1 biology.

Equivalent Units

14405 - Animal Physiology

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This unit aims to develop students with an understanding of the basic principles of animal physiology; the physiologic and homeostatic strategies and mechanisms employed by diverse animal groups particularly among the vertebrates in maintaining normal coordinated body functions under various physical conditions. Topics covered include the physiology of transport system, respiratory system, nutritional strategies, hormones and hormonal control, osmoregulation, neural processing, thermoregulation, reproduction and foetal development.

300427.2 Animal Production

Credit Points 10 **Level** 3

Special Requirements

Students must have completed two level 2 units from the Bachelor of Science or Bachelor of Natural Sciences.

.....

This unit aims to develop an understanding of the major animal production systems used for food and fibre in Australia (beef, dairy, pigs, poultry and sheep), and to apply this knowledge to improving problematic issues and understanding topical issues. Topics will focus on the application of animal production principles to these production systems.

300563.1 Animal Reproduction

Credit Points 10 **Level** 3

Assumed Knowledge

Basic knowledge of biology.

Equivalent Units

AG306A - Equine Reproduction and Stud Management

Special Requirements

All activities in the unit involving live animals must be approved by the UWS Animal Care and Ethics Committee. All activities in the unit involving the use of animal specimens must be approved by the UWS Institutional Biosafety and Radiation Safety Committee.

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This unit aims to provide students with a sound understanding of reproduction of both domestic and non domestic animals so that they can design and manage a breeding program for a species of choice. Topics will include anatomy and physiology of male and female reproductive tracts; hormonal control of reproduction; fertilisation, pregnancy, parturition and lactation; artificial reproductive techniques.

300421.2 Animal Science

Credit Points 10 **Level** 1

Assumed Knowledge

Basic knowledge of biology such as an attempt at Biology 1A

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This unit will provide students with an understanding of comparative physiological and anatomical concepts of a range of mammalian and avian species. Students will develop the skills to apply these concepts in practical situations through the use of field observations and the relationship of these to functional anatomy and physiology of production animals. In addition students will develop many of the principles and concepts employed in animal production. Concepts discussed in lectures are reinforced by practical classes held in the laboratory and in the outdoor laboratories.

300218.1 Applied Aspects of Inorganic Chemistry

Credit Points 10 **Level** 3

Equivalent Units

14108 - Chemistry Topics 1

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This unit covers three important applied aspects of modern inorganic chemistry: environmental inorganic chemistry; chemistry in mineral and metallurgical processing; and the characterisation of solid inorganic materials by state-of-the-art analytical techniques. The course material is presented via weekly lectures, one three-day field excursion at the school's field station at Burruga, and some essential integrated hands-on practical work with the relevant analytical instrumentation.

400889.1 Applied Biomechanics of Sport and Exercise

Credit Points 10 **Level** 3

Assumed Knowledge

It is expected that students have the knowledge and skills associated with the prerequisite unit.

Prerequisite

400882.1 Introduction to Biomechanics

Equivalent Units

400330 - Applied Biomechanics of Exercise

Special Requirements

Students must be enrolled in course 4658 - Bachelor of Health Science (Sport and Exercise Science).

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To fully understand the science underlying the optimisation of human movement, students require a comprehensive working knowledge of Biomechanics. This unit represents a theoretical and applied study of selected topics in Biomechanics. It builds on the basic principles of Biomechanics that are presented in the unit Introduction to Biomechanics and applies this knowledge to the analysis of

sporting and human exercise performance. To achieve this, advanced methods and concepts in the biomechanical analysis of human performance are identified and explored.

300776.1 Applied Ergonomics

Credit Points 10 **Level** 1

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 usability, comfort, pleasure and productivity for the end user. In this unit, students undertake their own ergonomic study. They are firstly introduced to modelling workshop procedures. They then build and test a model hand-held product, and integrate user feedback into its redesign. Other interchangeable terms for ergonomics are Biomechanics, Ergonomics, Human Engineering, and Human Factors.

300413.1 Applied Instrumentation in Nanotechnology

Credit Points 10 **Level** 2

Assumed Knowledge

300558 Physics 1, 200224 Chemistry 1, 300221 Biology 1, 300417 Nanotechnology 1, 300559 Physics 2, 300225 Chemistry 2, 200189 Concepts of Mathematics, 300418 Nanotechnology 2

This unit will cover the instrumentation used for the characterisation of materials, devices and biological systems with nanoscale features requiring analysis tools with extreme precision. New and innovative cutting edge characterisation techniques for the analysis of surface and bulk of the devices will be discussed.

300653.1 Applied Nutrition

Credit Points 10 **Level** 3

Equivalent Units

NT307A - Applied Nutrition

This unit builds on basic concepts in human nutrition and facilitates the study of nutrition needs during the life-cycle and for specific lifestyle and nutrition related diseases. This study will incorporate how to assess individuals and diets and to manipulate diets to ensure nutritional sufficiency and to manage nutritional therapy of lifestyle related diseases. This assessment is also applied to the dietary requirements of specific community groups and covers topics in sports nutrition, food supply and food product development.

200033.3 Applied Statistics

Credit Points 10 **Level** 2

Prerequisite

200032.3 Statistics for Business OR **200192.1** Statistics for Science OR **200263.2** Biometry OR **200052.3** Introduction to Economic Methods OR **300700.3** Statistical Decision Making

The unit builds on the basic statistical concepts introduced in first year, and also prepares students for broader application of statistics for those majoring in science or business. Topics include some common probability distributions; revision of hypothesis testing; analysis of categorical data; analysis of variance; simple and multiple linear regression analysis and correlation; some nonparametric methods; and fundamentals of time-series analysis.

400867.1 Approaches to Health Promotion

Credit Points 10 **Level** 2

Equivalent Units

400782 - Essentials of Health Promotion

Health promotion is a process that seeks to enable individuals, carers, communities and populations to increase control over their health by addressing the determinants of health and equity issues, resulting in improved health outcomes. Theoretical underpinnings of the various approaches to health promotion are explored, enhancing and limiting factors analysed and the levels of health promoting actions demonstrated, including the bigger picture approaches of working with policy, environmental and engineering solutions. Health promotion competencies are developed including conducting a needs and stakeholder analysis, also planning and evaluating an intervention. The best practice, evidence base for health promotion is outlined and the need to move beyond education.

700065.1 Approaches to Health Promotion (UWSC)

Credit Points 10 **Level** 2

Equivalent Units

400867 - Approaches to Health Promotion

Special Requirements

Students must be enrolled at UWS College. This is a Level 2 unit and is not to be studied in the first semester of the Diploma.

Health promotion is a process that seeks to enable individuals, carers, communities and populations to increase control over their health by addressing the determinants of health and equity issues, resulting in improved health outcomes. Theoretical underpinnings of the various approaches to health promotion are explored, enhancing and limiting factors analysed and the levels of health promoting actions demonstrated, including the bigger picture approaches of working with policy, environmental and engineering solutions. Health promotion competencies are developed including conducting a needs and stakeholder analysis, also planning and evaluating an intervention. The best practice, evidence base for health promotion is outlined and the need to move beyond education.

300465.1 Aquatic Ecology

Credit Points 10 **Level** 3

Equivalent Units

BI304A - Environmental Biology 3.2 (V1)

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Temperate aquatic ecosystems, freshwater, estuarine and marine are some of the most threatened ecosystems. Lack of understanding and pressures from urbanisation have caused alteration of these habitats, sometimes without regard to the ecological and social consequences. This unit will emphasise that to understand human impacts in our environment involves the logic and philosophy of science. On completion of this unit students will have knowledge of the main animal and plants in aquatic ecosystems and the techniques in experimental design and analysis needed to investigate estuarine, freshwater and marine ecosystems. Throughout this unit, the results of scientific and experimental work on temperate aquatic ecosystems, which inform decision-making and conservation of these habitats will be emphasised.

400895.1 Aquatic Sports

Credit Points 10 **Level** 3

Special Requirements

Students must be enrolled in course 4659 - Bachelor of Health Science (PDHPE). To undertake this unit, students must comply with the following special requirements: possess a current WorkCover Authority approved First Aid Certificate.

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Students will be instructed on how to teach swimming, diving, water aerobics, canoeing, kayaking, rowing, snorkelling and SCUBA diving to individuals of different ages. Students will also train in swimming to improve stroke mechanics and fitness in order to pass the Bronze Medallion Lifesaving certification. Students will also be exposed to each of the aforementioned aquatic activities in order to develop moderate to high competencies to aid their abilities to teach each activity in a school or community recreation setting.

300781.1 Atmospheric Science

Credit Points 10 **Level** 2

Prerequisite

300224.2 Chemistry 1 OR **300469.2** Introductory Chemistry OR **300554.1** Principles of Chemistry

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Changes in the composition and behaviour of the Earth's atmosphere have profound implications for environmental, social and economic sustainability. This unit provides a background in basic atmospheric science which will give students a critical understanding of current environmental concerns and debates about radiative forcing (the greenhouse effect), climate change, ozone depletion, photochemical pollution and acid precipitation. Students will be introduced to current atmosphere-related research at UWS and elsewhere.

200535.1 Auditing and Assurance Services

Credit Points 10 **Level** 3

Assumed Knowledge

A basic knowledge of computing.

Prerequisite

200109.1 Corporate Accounting Systems

Equivalent Units

AC301A - Auditing, H3822 - Auditing, 61151 - Principles of Auditing, 200107 - Auditing Principles

Incompatible Units

61152 - Auditing & Professional Practice

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This unit studies the roles and responsibilities of the auditor, auditing principles and standards and the application of those standards, particularly in an electronic environment.

300735.1 Automated Manufacturing

Credit Points 10 **Level** 2

Prerequisite

300463.1 Fundamentals of Mechanics AND **200237.1** Mathematics for Engineers 1 OR **200191.3** Fundamentals of Mathematics AND **300304.2** Sustainable Design: Materials Technology

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.

400748.2 Becoming a Nurse

Credit Points 10 **Level** 1

Equivalent Units

400045 - Nursing Context 1

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This unit introduces the student to the basic constructs that form professional nursing and nursing practice.

200518.1 Behavioural Finance

Credit Points 10 **Level** 3

Assumed Knowledge

Students should have at least an introductory finance background before entering into this unit.

Prerequisite

[200048.1](#) Financial Institutions and Markets AND [200488.1](#) Corporate Financial Management

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Traditional theories of finance are based the assumption that investors are both rational and utility maximizing. The Efficient Markets Hypothesis in particular has assumptions about investor behaviour which underpin its key predictions. The tenants of behavioural finance disputes the validity of these assumptions. This unit challenges traditional theory by examining how decision making and investor behaviour may be driven by personal and market psychology.

400747.2 Behavioural Foundations of Nursing Practice

Credit Points 10 **Level** 1

Equivalent Units

400046 - Nursing Science 1

Special Requirements

As a result of space restrictions students must be enrolled in course 4642,4643 or 4648 Bachelor of Nursing.

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This unit introduces the student to psycho-social concepts and principles that underpin human behaviour and inform professional nursing practice.

300219.1 Biochemistry 1

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of bacterial, plant and animal cell structure; chromosomes, mitosis and meiosis; structure of DNA and its role as carrier of genetic information; Mendelian genetics; chemical bonding, including covalent, hydrogen and ionic bonds and hydrophobic interactions; properties of water, acids, bases and buffers; structure of common functional groups; stereoisomerism; stoichiometry; principles of chemical reactions.

Prerequisite

[300221.1](#) Biology 1 OR [300543.1](#) Cell Biology AND [300224.1](#) Chemistry 1 OR [300225.1](#) Chemistry 2 OR [300550.1](#) Medicinal Chemistry OR [300554.1](#) Principles of Chemistry

Equivalent Units

14421 - Biochemistry 1, 14437 - Biochemistry 1, 300555 - Proteins and Genes, BC201A - Biochemistry 2.1 (V1), J2820 - Introductory Biochemistry

Incompatible Units

300227 - General Biochemistry

Students studying at Campbelltown campus should refer to 300555 - Proteins and Genes. This unit develops understanding of the structure, function and synthesis of proteins, principles of enzyme function and regulation, and the structures and roles of nucleic acids, chromosomes and genes. Topics include the characteristic features of the four levels of protein structure and their significance for protein function; protein denaturation; enzyme function, kinetics and inhibition, allosteric enzymes, and mechanisms of enzyme regulation; structure of DNA, RNA, chromosomes, genes; the molecular events in transcription and translation in bacteria and eukaryotes, and protein modification and targeting. Some campus specific topics, such as complex carbohydrate biochemistry and protein glycosylation at Parramatta may be included.

300219.3 Biochemistry 1

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of bacterial, plant and animal cell structure; chromosomes, mitosis and meiosis; structure of DNA and its role as carrier of genetic information; Mendelian genetics; chemical bonding, including covalent, hydrogen and ionic bonds and hydrophobic interactions; properties of water, acids, bases and buffers; structure of common functional groups; stereoisomerism; stoichiometry; principles of chemical reactions. Basic laboratory skills such as weighing, mixing, laboratory record keeping and calculations.

Prerequisite

[300221.1](#) Biology 1 OR [300543.1](#) Cell Biology OR [300793.1](#) Biology B - Cellular Processes AND [300224.2](#) Chemistry 1 OR [300554.1](#) Principles of Chemistry OR [300225.2](#) Chemistry 2 OR [300550.1](#) Medicinal Chemistry

Equivalent Units

14421 - Biochemistry 1, 14437 - Biochemistry 1, 300555 - Proteins and Genes, BC201A - Biochemistry 2.1

Incompatible Units

300227 - General Biochemistry, 300658 - Endocrinology and Metabolism

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This unit develops understanding of the structure, function and synthesis of proteins, principles of enzyme function and regulation, and the structures and roles of nucleic acids, chromosomes and genes. Topics include the characteristic features of the four levels of protein structure and their significance for protein function; protein denaturation; enzyme function, kinetics and inhibition, allosteric enzymes, and mechanisms of enzyme regulation; structure of DNA, RNA, chromosomes, genes; the molecular events in transcription and translation in bacteria and eukaryotes, and protein modification and targeting. Complex carbohydrate biochemistry and protein glycosylation is also included.

300220.1 Biochemistry 2

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of enzyme structure and function, understanding of the importance of co-factors to enzyme activity, understanding of enzymatic active sites and catalysis, knowledge of the types of enzymatic inhibition and regulatory mechanisms, knowledge of eukaryotic intracellular compartments and their broad function.

Prerequisite

300219.1 Biochemistry 1 OR 300555.1 Proteins and Genes

Equivalent Units

14427 - Biochemistry 2, 14440 - Biochemistry 2, 300548 - Human Metabolism and Disease, BC202A - Biochemistry 2.2 (V1), J2821 - Biochemistry of Metabolism

Incompatible Units

300227 - General Biochemistry

.....

Students studying at Campbelltown campus should refer to 300548 - Human Metabolism and Disease. This unit develops understanding of the metabolic processes by which an organism degrades food molecules to generate energy and converts excess food molecules into internal fuel stores. Topics include: bioenergetics; structures of key molecules; glycolysis, gluconeogenesis, glycogen synthesis and breakdown; fatty acid oxidation and synthesis; amino acid catabolism; urea synthesis; citric acid cycle; electron transport and oxidative phosphorylation. Emphasis is on regulation and integration of the pathways, including their responses to hormonal regulation. The effects of altered dietary and hormonal status on metabolic pathways and their consequences for the organism will be discussed.

300414.2 Biodevices

Credit Points 10 **Level** 3

Assumed Knowledge

300418 - Nanotechnology, 300554 - Principles of Chemistry, 300550 - Medicinal Chemistry, 300543 - Cell Biology

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The unit will investigate nature's nanomachines; lipids, DNA and proteins. The students will learn how only a few basic building blocks can self-assemble into more complex structures, which in turn self-assemble into more complex hierarchical structures from which one can build biodevices. These fascinating self-organising supramolecular structures generally involve some kind of non-covalent binding. Particular emphasis is placed on the underlying principles that govern the functioning of such machines and some coverage of the modelling of such processes using techniques such as statistical thermodynamics is given. Biological computing is also covered.

300539.1 Biodiversity

Credit Points 10 **Level** 1

Assumed Knowledge

Basic Chemistry and Biology.

Equivalent Units

14436 - Foundation Biology, 300222 - Biology 2, BI102A - Biological Sciences 1.2 (VI), BI108A - Biological Sciences 1.2(X), J1761 - General Biology

Incompatible Units

300361 - Introduction to Human Biology, 400130 - Human Medical Sciences 1, B1904 - Biology for Psychologists, B1905 - Genetics and Bioscience for Psychologists, BI005A - Biology 1.1D, BI106A - Biological Sciences, BI107A - Biological Sciences 1.1 (X)

.....

Students studying at Hawkesbury or Parramatta campus should refer to 300222 - Biology 2. This unit demonstrates the diversity of living organisms and viruses, with particular emphasis on those that affect human health. Students will discover how these organisms are classified, and how they have evolved. Besides exploring the breadth of biodiversity, the unit also examines the links between organisms. Evolutionary advances made by different taxonomic groups to develop mechanisms for reproduction and growth, respiration, maintaining water balance, excretion, digestion, and coordination will be compared. Ultimately human health depends on a sustainable environment and the study of ecosystems will link the biodiversity components of the unit.

700032.1 Biodiversity (UWSC)

Credit Points 10 **Level** 1

Assumed Knowledge

Basic Chemistry and Biology

Equivalent Units

J1761 - General Biology, 14436 - Foundation Biology 2, BI102A - Biological Sciences 1.2 (V1), 300222 - Biology 2, BI108A - Biological Sciences 1.2

Incompatible Units

B1904 - Biology for Psychologists, B1905 - Genetics and Bioscience for Psychologists, BI005A - Biology 1.1D, BI106A - Biological Sciences 1.2, BI107A - Biological Sciences 1.1, 300361 - Introduction to Human Biology, 400130 - Human Medical Sciences 1

Special Requirements

Students must be enrolled at UWS College.

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This unit demonstrates the diversity of living organisms and viruses, with particular emphasis on those that affect human health. Students will discover how these organisms are classified, and how they have evolved. Besides exploring the breadth of biodiversity, the unit also examines the links between organisms. Evolutionary advances made by different taxonomic groups to develop mechanisms for reproduction and growth, respiration, maintaining water balance, excretion, digestion, and coordination will be

compared. Ultimately human health depends on a sustainable environment and the study of ecosystems will link the biodiversity components of the unit.

300222.1 Biology 2

Credit Points 10 **Level** 1

Assumed Knowledge

Basic Chemistry and Biology.

Equivalent Units

14436 - Foundation Biology 2, 300539 - Biodiversity, B1102A - Biological Sciences 1.2 (V1), J1761 - General Biology

Incompatible Units

300361 - Introduction to Human Biology, 400130 - Human Medical Sciences 1, B1904 - Biology for Psychologists, B1905 - Genetics and Bioscience for Psychologists, BI005A - Biology 1.1D, B1106A - Biological Sciences, B1107A - Biological Sciences 1.1 (X)

.....

Students studying at Campbelltown campus should refer to 300539 - Biodiversity. This unit examines the diversity of living organisms, how these organisms are classified, and how evolutionary processes resulted in such diversity. The unit also addresses the role of cells, tissues and organs in the structure and function of living whole organisms, how these organisms acquire and assimilate the resources necessary for growth, and how they excrete waste, maintain function and coordinate growth and reproduction. The role of ecosystems in maintaining life is also studied. Students conduct basic investigations using techniques such as microscopy, sectioning, staining and dissection.

300792.1 Biology A - The Diversity of Life

Credit Points 10 **Level** 1

Assumed Knowledge

Basic knowledge of biology and chemistry

Equivalent Units

14436 - Foundation Biology 2, 300539 - Biodiversity, B1102A - Biological Sciences 1.2 (V1), J1761 - General Biology, 300222 - Biology 2

Incompatible Units

300361 - Introduction to Human Biology, 400130 - Human Medical Sciences 1, B1904 - Biology for Psychologists, B1905 - Genetics and Bioscience for Psychologists, BI005A - Biology 1.1D, B1106A - Biological Sciences, B1107A - Biological Sciences 1.1 (X)

.....

This unit uses evolution as the framework to introduce students to essential concepts of biology, by examining the origins of life and how life has evolved. The unit looks at the diversity of organisms, how they are classified and how they function. The linkage of structure and function, how organisms acquire and assimilate their resources, and how they coordinate growth and reproduction are examined. Evolutionary developments in the ways in which plants and animals deal with these challenges are highlighted. The role of ecosystems in maintaining life is briefly studied.

Students conduct basic investigations using techniques including microscopy and dissection.

300793.1 Biology B - Cellular Processes

Credit Points 10 **Level** 1

Equivalent Units

14430 - Foundation Biology 1, 300543 - Cell Biology, B1101A - Biological Sciences 1.1 (V1), J1760 - Fundamentals of Cell Biology, 300221 - Biology 1

Incompatible Units

300361 - Introduction to Human Biology, BI904 - Biology for Psychologists, BI905 - Genetics and Bioscience for Psychologists, BI005A - Biology 1.1D, B1106A - Biological Sciences 1.2, B1107A - Biological Sciences 1.1(X)

.....

The cell is the basic unit of life and some basic processes, such as membrane function and protein synthesis, occur in the cells of all living organisms. This unit examines these processes and associated biological chemicals. The unit also examines phenomena such as cell replication, sex cell formation, inheritance, and cell metabolism in eukaryotes (animals, protists, fungi and plants). The biochemical capture of the sun's energy (photosynthesis) is also investigated. The evolutionary links between cellular processes and the origin of life forms the framework for the unit.

200263.1 Biometry

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics

Equivalent Units

200032 - Statistics for Business, 200192 - Statistics for Science

Incompatible Units

200190 - Finite Mathematics, 200194 - Engineering Mathematics 3

.....

This unit introduces students to various statistical techniques necessary in scientific endeavours. Presentation of the content will emphasize the correct principles and procedures for collecting and analysing scientific data, using a 'hands-on' approach. Topics include effective methods of gathering data, statistical principles of designing experiments, error analysis, describing different sets of data, probability distributions, statistical inference, non-parametric methods, and simple linear regression and correlation.

200263.2 Biometry

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics or equivalent

Equivalent Units

200192 - Statistics for Science, 300700 - Statistical Decision Making

Incompatible Units

200032 - Statistics for Business, 200182 - Quantitative Techniques, 200052 - Introduction to Economic Methods

.....

Biometry introduces students to various statistical techniques necessary in scientific endeavours. Presentation of the content will emphasize the correct principles and procedures for collecting and analysing scientific data, using a 'hands-on' approach. Topics include effective methods of gathering data, statistical principles of designing experiments, error analysis, describing different sets of data, probability distributions, statistical inference, non-parametric methods, simple linear regression and analysis of categorical data.

700033.2 Biometry (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

200263 - Biometry, 200192 - Statistics for Science, 300700 - Statistical Decision Making, 700041 - Statistical Decision Making (UWSC)

Incompatible Units

200032 - Statistics for Business, 700007 - Statistics for Business (UWSC), 200182 - Quantitative Techniques

.....

This unit introduces students to various statistical techniques necessary in scientific endeavours. Presentation of the content will emphasize the correct principles and procedures for collecting and analysing scientific data, using a 'hands-on' approach. Topics include effective methods of gathering data, statistical principles of designing experiments, error analysis, describing different sets of data, probability distributions, statistical inference, non-parametric methods, and simple linear regression and correlation.

300540.1 Biomolecular Dynamics

Credit Points 10 **Level** 2

Assumed Knowledge

A demonstrated understanding of, and competence with, basic chemical principles including SI units, chemical symbols, formulae and equations, nomenclature, stoichiometry, the mole concept and associated calculations, states and properties of matter, thermodynamics, chemical equilibria, acids and bases, pH and electrochemistry, to a standard equivalent to that presented in Chemistry 1 (or equivalent). Completion of first-year mathematics would also be assumed knowledge.

Prerequisite

300224.1 Chemistry 1 OR **300554.1** Principles of Chemistry

Equivalent Units

300236 - Physical Chemistry 2, J2776 - Physical Chemistry 2

.....

Students studying at Parramatta campus should refer to 300236 - Physical Chemistry 2. The unit provides the understanding of the chemical principles as applied to

biological molecules (biomolecules). Chemical and electrochemical energy transformations approaching equilibria and rates of biological processes are studied and further explored for useful experimental and data-analysis skills. Selected areas including enzyme kinetics or membrane equilibria will be studied.

300541.1 Biomolecular Frontiers

Credit Points 10 **Level** 1

Special Requirements

Students must be enrolled in the Bachelor of Biomolecular Science.

.....

Students will learn about exciting and sometimes contentious issues in the biomolecular sciences: including stem cell research; cloning and genetic engineering; new drug development; nanoscience and human health; circadian rhythms; origins of new viruses; the human genome and human health; NMR and health; fraud, plagiarism and ethics in science; finding new drugs; computer-aided drug design; biosafety and biosecurity. Guest lecturers will present special insights into new developments. Students will gain practical experience in skills which are essential for biomolecular science: scientific writing, locating and accessing information for researching a scientific topic, and oral presentation skills.

300542.1 Biomolecular Science Project

Credit Points 10 **Level** 3

Assumed Knowledge

All Level 2 core units in a science key program.

Equivalent Units

14117 - Chemistry Project, 300299 - Chemistry Project 3, J3659 - Biological Science Project, J3662 - Chemistry Project

.....

Students studying at Parramatta campus should refer to 300299 - Chemistry Project 3. This unit provides the student with an introduction to thinking as a research scientist whilst developing methodological and practical skills in a particular area of interest. The student undertakes a minor research project under directed supervision, during which they outline the problem and undertake a full literature review, perform appropriate experiments, and analyze and discuss the results in a formal report.

400927.1 Block Clinical Practicum (PG)

Credit Points 10 **Level** 7

Assumed Knowledge

Traditional Chinese Medicine Practice 4 (PG)

Incompatible Units

400363 - Block Clinical Practicum

.....

This unit provides the student with intensive, supervised clinical practice experience. Arrangements will be made for students to complete this stage in China. This will involve students paying their own travel fares, as well as, training

and accommodation fees to the Chinese institution. This unit represents the final clinical practicum stage and development of clinical skills. Students will be expected to demonstrate competence in handling patients in a clinical context, and manage their integrated care using TCM.

300328.1 Botany

Credit Points 10 **Level** 2

Assumed Knowledge

Basic knowledge of biology, chemistry and ecology.

Equivalent Units

BI103A - Botany and Taxonomy

.....

This unit introduces students to the study of botany so that they will develop a knowledge and understanding of plants. The unit covers the topics of plant anatomy and morphology, classification and systematics, and evolution. Students will examine the major groups of plants: green algae, bryophytes, lycophytes, monilophytes, gymnosperms and angiosperms. Laboratory and field work will involve the study of common Australian plants and some economically important plants.

200088.1 Brand and Product Management

Credit Points 10 **Level** 3

Assumed Knowledge

A sound knowledge of marketing principles and of the key elements of consumer behaviour, marketing research and marketing communications.

Prerequisite

200083.1 Marketing Principles

Equivalent Units

MK205A - Brand Management

.....

This unit focuses on the role of brand and product management in the context of planning and implementing marketing strategies and is intended to develop a critical appreciation of the inherent challenges contemporary firms encounter in creating and maintaining brand equity.

300088.1 Broadband Networking

Credit Points 10 **Level** 3

Prerequisite

300112.1 Digital Communication Technology

.....

This unit covers networking technologies, and standards of broadband networks that dominate both the WAN and LAN markets. These include frame relay, ATM, broadband ISDN and high-speed LANs. Quality of Service (QoS) issues, and the need to support multimedia and real-time traffic, the need to control congestion and the need to provide different levels of QoS to different applications are the focus.

400621.2 Bugs and Drugs

Credit Points 10 **Level** 2

Assumed Knowledge

Basic understanding of structure and function of systems within the human body.

.....

This unit will commence from 2010. Throughout history humans have sought to control their well-being whether it be in response to disease-producing microbes or situations inherent in modern day life. This unit examines an eclectic range of treatments and technologies. Some have been triggered by ancient and enduring infectious foes such as smallpox and the plague or emerging menaces including Ebola and SARS. Others are nested within contemporary living and may be constructed as communicable in the social sense. Selected issues will be explored including agents utilised in the alteration of sensory perception including hallucinogens as well as reaction to and manipulation of body image.

300706.1 Building 1

Credit Points 10 **Level** 1

Equivalent Units

BG101A - Building 1

Special Requirements

External offerings for this unit are only available to students who are enrolled in a Property course or Property key program.

.....

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.

700070.1 Building 1 (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300706 - Building 1

Special Requirements

Students must be enrolled at UWSCollege may undertake this unit.

.....

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.

300707.1 Building 2

Credit Points 10 **Level** 1

Equivalent Units

BG103A - Building 2

.....

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.

700071.1 Building 2 (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300707 - Building 2

Special Requirements

Students must be enrolled at UWSCollege.

.....

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.

200292.1 Building Law

Credit Points 10 **Level** 3

Equivalent Units

LW305A - Building Law 2

.....

This unit is designed to provide students with a good understanding of the law and dispute resolution mechanisms that regulate the conduct of the building industry and building practices e.g. occupational health and safety, contract law, workers compensation, awareness of industrial relations and dispute resolution.

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.

300722.1 Building Regulations Studies

Credit Points 10 **Level** 3

Equivalent Units

BG302A - 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.

200336.2 Business Academic Skills

Credit Points 10 **Level** 1

Assumed Knowledge

HSC English or equivalent

Equivalent Units

H1745 - Business Skills for Professionals, 200155 - Business Skills and Communication, 100483 - Principles of Professional Communication 1

Special Requirements

External offerings for this unit are only available to students who are enrolled in a Property course or Property key program.

.....

The development of business skills in the form of the application of information collection, analysis and evaluation, logical reasoning skills, and communication skills relevant to business and economic issues.

200162.1 Business Report

Credit Points 10 **Level** 3

Assumed Knowledge

Introduction to Operations Management.

.....

This unit is structured as session-long, team-based projects and provides an opportunity for students to integrate the knowledge and skills acquired in units they have undertaken previously. Projects are selected by teams for approval by the unit coordinator (under special circumstances, approval may be given for projects to be undertaken on an individual basis). Students prepare a formal project proposal, which covers the problem to be addressed, the methodology to be used and the strategic plan for conduct of the project. The project culminates in the submission of a final report that includes appropriate

outcomes and recommendations. Students also deliver a presentation based on their final report.

200091.2 Business to Business Marketing

Credit Points 10 **Level** 3

Assumed Knowledge

Basic knowledge of marketing concepts, theories and frameworks

Prerequisite

200083.1 Marketing Principles

Equivalent Units

MK318A - Business-to- Business Marketing, 61723 - Business-to-Business Marketing

This unit encompasses introduction to B2B Marketing, differences between B2B and consumer marketing, organizational buying behaviour, B2B market segmentation, business marketing strategy, management of the 4P's in B2B Marketing, relationship and network marketing, Supply Chain Management and CRM strategies, and evaluating the marketing efforts and making the marketing strategy work.

200158.2 Business, Society and Policy

Credit Points 10 **Level** 2

Corequisite

200571.1 Management Dynamics OR **MG102A.1** Management Foundations OR **61611.1** Management Studies OR **H1727.1** Business Management

The purpose of this unit is to explore through reflection and social inquiry the complex relationships between businesses and their stakeholders, critically evaluating social and political impacts of business decisions and practices and the challenges and ethical dilemmas emerging in the context of global capitalism. Students will examine these relationships within the framework of the development of capitalism, considering the importance of government roles to regulate the impacts of business actions on society and vice versa. It emphasises the social responsibility of the firm and the role of ideology used to justify the actions of business, society and government.

300543.1 Cell Biology

Credit Points 10 **Level** 1

Assumed Knowledge

Basic Chemistry and Biology

Equivalent Units

14430 - Foundation Biology, 300221 - Biology 1, BI101A - Biological Sciences 1.1(X), J1760 - Fundamentals of Cell Biology

Incompatible Units

300361 - Introduction to Human Biology, BI904 - Biology for Psychologists, BI905 - Genetics and Bioscience for Psychologists, BI005A - Biology 1.1D, BI106A - Biological Sciences 1.2, BI107A Biological Sciences 1.1(X)

Students studying at Hawkesbury or Parramatta campus should refer to 300221 - Biology 1. Cells are the foundations of life, and an understanding of cell structure and function is required for anyone working in the medical science field. Most diseases result from or lead to malfunctioning of some aspect of cellular processes such as transport across membranes or cell replication. Underlying normal cell function, however, are the molecules of which cells are composed. Consequently, the unit will introduce lipids, carbohydrates, amino and nucleic acids, then study the processes by which these molecules are manipulated to build and recycle organelles, store and transport energy and transmit genetic information in both the prokaryote and eukaryote domains. Accordingly, the unit will include cell replication, sex cell formation, Mendelian genetics as well as cellular respiration and DNA replication, transcription and translation. The role of DNA technology in biomolecular science will be an important component of the unit and will unify the several topics listed above.

700034.1 Cell Biology (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300221 - Biology 1, J1760 - Fundamentals of Cell Biology, 14430 - Foundation Biology 1, BI101A - Biological Sciences 1.1

Incompatible Units

BI005A - Biology 1.1D, BI107A - Biological Sciences 1.1, BI106A - Biological Sciences 1.2, BI904 - Biology for Psychologists, BI905 - Genetics and Bioscience for Psychologists, 300361 - Introduction to Human Biology

Special Requirements

Students must be enrolled at UWS College.

Cells are the foundations of life, and an understanding of cell structure and function is required for anyone working in the medical science field. Most diseases result from or lead to malfunctioning of some aspect of cellular processes such as transport across membranes or cell replication. Underlying normal cell function, however, are the molecules of which cells are composed. Consequently, the unit will introduce lipids, carbohydrates, amino and nucleic acids, then study the processes by which these molecules are manipulated to build and recycle organelles, store and transport energy and transmit genetic information in both the prokaryote and eukaryote domains. Accordingly, the unit will include cell replication, sex cell formation, Mendelian genetics as well as cellular respiration and DNA replication, transcription and translation. The role of DNA technology in biomolecular science will be an important component of the unit and will unify the several topics listed above.

300544.1 Cell Signalling

Credit Points 10 **Level** 3

Assumed Knowledge

Detailed knowledge of protein structure and function; gene expression, protein synthesis, post-translational

modifications to proteins; enzyme catalysis; protein targeting and secretion. Basic skills for a biochemistry laboratory.

Prerequisite

300555.1 Proteins and Genes OR **300219.1** Biochemistry 1

Incompatible Units

300223 - Cell Signalling and Molecular Immunology, J3830 - Immunology and Cell Signalling

.....

Cell signalling looks at the molecular mechanisms by which cells communicate and make responses to each other. Disorders of cell signalling have major impacts on human health and are involved in many metabolic disorders, brain function, the immune system, cancer and embryonic development. Knowledge of cell signalling pathways has important spin-offs for design of new drugs. This unit investigates the action of hormones, growth factors, cytokines and morphogens; their receptors and signalling pathways; and the cellular responses they trigger, such as altered metabolism, shape, differentiation, death. Students will expand their understanding of current developments by scientific reading and group discussion. Laboratory work will enable students to develop basic skills in cell culture techniques.

400874.1 Channels and Points 1

Credit Points 10 **Level** 2

Assumed Knowledge

Assumed knowledge equivalent to Theories of Traditional Chinese Medicine 1.

Equivalent Units

400347 - Acupuncture 1

.....

Acupuncture is one of the principal therapeutic interventions in TCM. This unit introduces students to acupuncture theory and practice, and provides opportunity to develop practical skills. It covers the theory of channels and points, channel pathway, point location and indication of the three yin/yang channels of hand and points, and the three yin channels of foot and points. This unit also expands upon the student's understanding of TCM theory and practice principles.

400875.1 Channels and Points 2

Credit Points 10 **Level** 2

Assumed Knowledge

Assumed knowledge equivalent to Channels and Points 1.

Equivalent Units

400347 - Acupuncture 1

.....

Acupuncture is one of the principal therapeutic interventions in TCM. This unit completes the study of system of channels and points, which forms the basis of clinical application of acupuncture. It covers the channel pathway, point location and indication of the three yang channels of foot and points, and Du and Ren channels and points. It also introduces the points of ear and scalp

acupuncture. This unit expands upon the student's understanding of TCM theory and practice principles.

300611.2 Chemical Mineralogy

Credit Points 10 **Level** 2

Assumed Knowledge

Basic arithmetic and algebraic skills.

Prerequisite

300224.2 Chemistry 1 AND **300225.2** Chemistry 2

Equivalent Units

14509.1 - Chemical Mineralogy

.....

This unit focuses on the chemical composition of minerals in order to identify, classify and characterize them, as well as a means to find beneficial uses from them. It covers the composition, structure and formation of selected examples from the silicate and non-silicate mineral groups. It deals with the structures of minerals and their determination, interpretation of structural data in the literature, aspects of solid solution, the forces which stabilize mineral lattices and the grouping of various minerals in terms of their chemical and structural characteristics. The chemistry of mineral formation at high and low temperatures will be examined. Modern analytical methods (XRD, XRF, SEM-EDS, EPMA and classical) used in the study of minerals and their identification and characterization are explored.

700043.1 Chemistry (UWSCFS)

Credit Points 10 **Level** Z

Special Requirements

Students must be enrolled at UWS College.

.....

This unit introduces students to the basic concepts required to satisfy the needs of most first year university science courses in both skill and content areas. It is intended that students will gain a greater understanding of the theoretical concepts covered in the course by completing the practical component of the course.

300224.2 Chemistry 1

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Chemistry (2 unit) or HSC Multi-strand Science (3 or 4 unit) or equivalent. UWS Chemistry Bridging course or equivalent.

Equivalent Units

14101 - Foundation Chemistry 1, 300554 - Principles of Chemistry, CH103A - Chemistry 1.1, J1753 - Chemistry 1

Incompatible Units

80800 - Introductory Chemistry 1, CH101A - Introductory Chemistry 1.1D, 300449 - Introductory Chemistry

.....

This unit provides a broad introduction to the fundamental principles common to all branches of chemistry. The unit is intended to serve the needs not only of chemistry majors,

but also those intending to specialise in other related disciplines. The unit focuses on scientific notation, nomenclature, chemical equations, stoichiometry, the mole concept, atomic structure, periodicity, electronic configuration, structure and bonding, states of matter, intermolecular forces, properties of solutions, chemical thermodynamics, chemical equilibria, and electrochemistry.

700036.1 Chemistry 1 (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300224 - Chemistry 1, 14101 Foundation Chemistry 1, 300554 - Principles of Chemistry, CH103A - Chemistry 1.1, J1753 - Chemistry 1

Incompatible Units

80800 - Introductory Chemistry 1, CH101A - Introductory Chemistry 1.1D, 300469 - Introductory Chemistry

Special Requirements

Students must be enrolled at UWS College

.....

This unit provides a broad introduction to the fundamental principles common to all branches of chemistry. The unit is intended to serve the needs not only of chemistry majors, but also those intending to specialise in other related disciplines. The unit focuses on scientific notation, nomenclature, chemical equations, stoichiometry, the mole concept, atomic structure, periodicity, electronic configuration, structure and bonding, states of matter, intermolecular forces, properties of solutions, chemical thermodynamics, chemical equilibria, and electrochemistry.

300225.2 Chemistry 2

Credit Points 10 **Level** 1

Assumed Knowledge

A demonstrated understanding and competence with basic chemical principles including SI units, chemical symbols, formulas and equations, nomenclature, stoichiometry, the mole concept, bonding, molecular shape and polarity, states and properties of matter, thermodynamics, equilibria, acids and bases, pH and electrochemistry, to a standard equivalent to that presented in Chemistry 1 (or equivalent).

Equivalent Units

14102 - Foundation Chemistry 2, 300550 - Medicinal Chemistry, CH104A - Chemistry 1.2, J1754 - Organic Chemistry 1

Incompatible Units

CH102A - Biological Chemistry 1.2D

.....

This unit is designed to continue the development of students' understanding of the basic principles of chemistry, with an emphasis on the chemistry of carbon compounds. The unit focuses on introductory chemical dynamics, together with an in-depth treatment of the structure, nomenclature and reactivity of the principal organic functional groups. The unit provides a necessary foundation for subsequent related studies in chemistry, biochemistry, food chemistry, nutrition science, toxicology, environmental science, and related biological sciences and technologies.

700037.1 Chemistry 2 (UWSC)

Credit Points 10 **Level** 1

Assumed Knowledge

A demonstrated understanding and competence with basic chemical principles including SI units, chemical symbols, formulas and equations, nomenclature, stoichiometry, the mole concept, bonding, molecular shape and polarity, states and properties of matter, thermodynamics, equilibria, acids and bases, pH and electrochemistry, to a standard equivalent to that presented in Chemistry 1 (or equivalent).

Equivalent Units

300225 - Chemistry 2, 14102 - Foundation Chemistry 2, 300550 - Medicinal Chemistry, CH104A - Chemistry 1.2, J1754 - Organic Chemistry 1

Incompatible Units

CH102A - Biological Chemistry 1.2D

Special Requirements

Students must be enrolled at UWS College.

.....

This unit is designed to continue the development of students' understanding of the basic principles of chemistry, with an emphasis on the chemistry of carbon compounds. The unit focuses on introductory chemical dynamics, together with an in-depth treatment of the structure, nomenclature and reactivity of the principal organic functional groups. The unit provides a necessary foundation for subsequent related studies in chemistry, biochemistry, food chemistry, nutrition science, toxicology, environmental science, and related biological sciences and technologies.

400162.1 Child and Adolescent Occupations

Credit Points 10 **Level** 2

Equivalent Units

E2043 - Occupational Therapy 3

Special Requirements

To undertake this unit, students must comply with the following special requirements: completion of a Prohibited Employment Declaration; Criminal Record Check clearance; provide evidence of compliance with the occupational screening and immunisation policy of NSW Health; possess a current WorkCover Authority approved First Aid Certificate.

.....

This unit will explore roles, activities and performance components relevant to occupational therapy in childhood and adolescence. The unit considers the concept of 'typical' development and deviations that may have implications for paediatric and adolescent clients. Various models and frames of reference are considered including the family centred practice approach. There will be a self directed and reflective learning approach in this unit. Students will learn about paediatric and adolescent occupational therapy practice in different clinical settings. They will observe and interact with clients in the UWS Uniclinic. This will assist students with the links between theory and practice.

400162.2 Child and Adolescent Occupations

Credit Points 10 **Level** 3

Assumed Knowledge

First and second year specialty occupational therapy units or Occupational Therapy Theory and Practice.

Special Requirements

This unit is only available to students enrolled in courses 4663 - Bachelor of Health Science/Masters of Occupational Therapy and 4664 - Master of Occupational Therapy. To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) if students are visiting a NSW Health facility they will need to comply with the occupational screening and immunisation policy of NSW Health.

.....

This unit version will commence from 2012. Students learn about paediatric and adolescent occupational therapy practice in different practice settings. This unit examines child development and explores the occupations of childhood and adolescence. Occupational therapy models, frames of reference, assessments and interventions are applied to practice scenarios. Family-centred practice is a key focus of this unit. There will be a self directed and reflective learning approach in this unit.

400918.1 Chinese Internal Medicine 1 (PG)

Credit Points 10 **Level** 7

Assumed Knowledge

TCM 3, Acupuncture Techniques, Chinese Medicinal Formulas

Incompatible Units

400357 - Chinese Internal Medicine

.....

The study of internal medicine forms the basis of clinical practice in traditional Chinese medicine. This unit begins to bridge the gap between theory and practice. It enables the health professional to analyse, diagnose and treat common internal diseases with both acupuncture and herbal medicine and using a TCM approach. The focus of this unit is on the analysis of major presenting symptoms.

400922.1 Chinese Internal Medicine 2 (PG)

Credit Points 10 **Level** 7

Assumed Knowledge

Traditional Chinese Medicine 3, Acupuncture Techniques, Chinese Medicinal Formulas

Incompatible Units

400360 - Chinese Internal Medicine 2

.....

This unit builds on Chinese Medicine 1 and extends the student's ability to analyse, diagnose and treat common

and difficult diseases in internal medicine with both acupuncture and herbal medicine and using a TCM approach. Students will develop an understanding of the causes and pathophysiological mechanisms of a wide range of diseases.

400876.1 Chinese Materia Medica 1

Credit Points 10 **Level** 2

Assumed Knowledge

Assumed knowledge equivalent to TCM 1.

Equivalent Units

400349 - Chinese Herbal Medicine 1

.....

Herbal medicine is one of the principal therapeutic interventions in TCM. This unit introduces students to the therapeutic and reference organisation of Chinese medicinal herbs, and enables students to commence using the materia medica. It covers the commonly used herbs in each of the six categories of the Chinese materia medica, including the herbal properties, actions, indications, contraindications, combined usage as well as herbal dispensing. This unit also expands upon the student's understanding of TCM theory and practice principles.

400877.1 Chinese Materia Medica 2

Credit Points 10 **Level** 2

Assumed Knowledge

Assumed knowledge equivalent to Chinese Materia Medica 1.

Equivalent Units

400351 - Chinese Herbal Medicine 2

.....

This unit completes the study of Chinese medicinal herbs, which forms the basis for Chinese herbal medicine. It covers the commonly used herbs in each of the twelve categories of the Chinese materia medica, including the herbal properties, actions, indications, contraindications and combined usage. It also introduces the basic knowledge of TCM dietary therapy and herbal pharmacognosy. This unit also expands upon the student's understanding of TCM theory and practice principles.

400878.1 Chinese Medicinal Formulas

Credit Points 10 **Level** 3

Assumed Knowledge

Assumed knowledge equivalent to Chinese Materia Medica 1 and 2.

Equivalent Units

400351 - Chinese Herbal Medicine 3

.....

Herbal medicine is the principal therapeutic intervention in TCM. This unit follows from Chinese Materia Medica 1 and 2, and begins the study of major Chinese herbal formulas, which form the basis for clinical prescribing in Chinese herbal medicine. The focus of this unit is to compare and contrast the main formulas in specified categories, and to

analyse the specific actions of the herbs that make up the formula. Students will be required to formulate, assemble and prepare complex prescriptions. This unit expands upon the student's knowledge of the Chinese Materia Medica, as well as the understanding of TCM theory and practice principles.

300005.1 Circuit Theory

Credit Points 10 **Level** 2

Assumed Knowledge

Content contained in 200238 - Mathematics for Engineers 2. 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

300021.1 Electrical Fundamentals

.....

This unit aims to equip students with the tools needed for the design and analysis of electrical and electronic circuits. The unit also introduces various techniques of circuit analysis, convolution, mutual coupling, frequency response and two ports loop.

400969.1 Classical Texts in Chinese Medicine (PG)

Credit Points 10 **Level** 7

Assumed Knowledge

TCM 3, Chinese Medicinal Formulas

Incompatible Units

400355 - Classical Texts in Chinese Medicine

.....

This unit provides further learning experiences that enable the students to explore the original theories on physiology, pathology, diagnosis, differentiation and treatment of diseases through select periods of Chinese history. Many theoretical concepts, diagnostic systems and therapeutic methods of TCM are still in current usage, and will be covered through the study of important classical texts and academic schools of TCM thought. This unit expands upon the student's understanding of TCM theories and practice principles through studies of the classical literature.

400879.1 Clinical Assessment Methods

Credit Points 10 **Level** 3

Assumed Knowledge

Understanding of human anatomy & physiology and pathophysiology of common impairments of health.

Prerequisite

400138.1 Pathophysiology 1 AND **400868.1** Human Anatomy and Physiology 1 AND **400869.1** Human Anatomy and Physiology 2

Equivalent Units

400262 - Clinical Diagnosis

This unit is designed to introduce students to basic principles and essential skills of physical examination and diagnostic/laboratory investigation procedures, required for successful approach to diagnosis of health impairment states. Primary contact health practitioners are expected to have sound understanding of disease presentation, techniques of patient interviewing and examination for collection of relevant clinical information as well as the ability to select appropriate laboratory tests and interpret their findings. This unit will also help students to develop fundamental clinical reasoning skills required in the medical decision making process.

400887.1 Clinical Exercise Physiology 1

Credit Points 10 **Level** 3

Prerequisite

400326.1 Exercise Prescription for General Populations AND **400885.1** Sport and Exercise Physiology

Equivalent Units

400328 - Exercise Prescription For Special Populations

Special Requirements

Students must be enrolled in course 4658 - Bachelor of Health Science (Sport and Exercise Science).

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Clinical Exercise Physiology - 1 is concerned with teaching students how to; a) develop exercise tests for individuals with or at risk for cardiovascular, metabolic and/or pulmonary diseases, cancers, musculo-skeletal injuries or disorders, muscular wasting, or any other conditions that could cause increased risk during testing and/or alter the physiological responses to exercise stress; b) interpret the results from exercise testing individuals with the aforementioned special clinical conditions, and c) develop exercise programs for individuals from these more special "clinical" populations. Emphasis will be placed on: understanding the underlying condition(s), their impact on quality of life, and how exercise can be used for prevention, diagnosis and management of the condition(s). Students will also be involved in laboratory sessions aimed at developing the skills necessary for exercise testing individuals from these clinical populations, and using real case study data to interpret results.

400964.1 Clinical Neurosciences

Credit Points 10 **Level** 2

Prerequisite

400130.1 Human Medical Sciences 1

Equivalent Units

400166 - Clinical Neurosciences

Incompatible Units

E2046 - Neurology and Clinical Psychiatry

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This unit is intended to provide students with an in depth study of those human medical sciences which underpin specific intervention principles and procedures to be taught in the professional units. Primary contact health care providers have professional requirements that cover a

broad spectrum of diagnostic, medical and physical practices. In order to ensure a suitable basis for later practice, students require a detailed knowledge and understanding of clinical neurosciences including histology, embryology, anatomy, and physiology of nervous system and the clinical implications.

400981.1 Clinical Pharmacology

Credit Points 10 **Level** 2

Prerequisite

400138.2 Pathophysiology 1

Equivalent Units

400135 - Clinical Pharmacology and Microbiology

Incompatible Units

300505 - Pharmacology

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This unit explores in depth clinical pharmacology fundamental to the practice of allied health (physiotherapy and podiatric medicine) and complementary medicine (traditional Chinese Medicine). General principles of pharmacology, pharmacokinetics and pharmacodynamics will be discussed. Key drug categories affecting the main body systems will be introduced in terms of their mechanisms of action, adverse reactions and clinical applications. In the context of antimicrobial pharmacology, general concepts of microbiology will be introduced offering students an understanding of the causative microorganisms, the complex relationship between host and pathogen, the pharmacological actions of antimicrobial drugs and the principles of infection control.

300089.3 Commercial Applications Development

Credit Points 10 **Level** 2

Assumed Knowledge

It is assumed that students have an introductory understanding (Level 1 equivalent), of programming, analysis & design and database principles.

Prerequisite

300580.1 Programming Fundamentals AND 300585.1 Systems Analysis and Design AND 300104.1 Database Design and Development

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This unit builds on students' existing understanding of programming principles to develop software applications situated within the Microsoft Office environment. Typical applications of this type might incorporate Microsoft Word, Excel, Access or PowerPoint. This unit covers the development of programs for Microsoft Office Applications using both recorded macros and Visual Basic for Applications Procedures. It provides a solid understanding of the knowledge and skills required to create applications using the Microsoft Visual Basic for Application's inbuilt functions and classes. It is a preparation and foundation for the construction of related, but more complex, applications using the Microsoft API or VB.NET. The unit also provides a foundation for the use of scripting and macro languages both for the web and for operating systems.

300068.2 Communication Electronics

Credit Points 10 **Level** 5

Prerequisite

200238.1 Mathematics for Engineers 2 AND 300025.1 Electronics

Equivalent Units

84488 - Advanced Electronics

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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.

400732.1 Communication in Health

Credit Points 10 **Level** 1

Equivalent Units

400131 - Communication for the Helping Professions.

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Communication is integral to professional relationships, whether working individually with a client, educating community members on health matters, or working with other professionals as part of a multidisciplinary team. This unit aims to develop communication skills in preparation for work within the health professions across these areas. Communication skills will include those needed to form therapeutic relationships with individual clients and groups, as well as those required to communicate health information to clients, groups and the wider community. Students will develop skills to establish appropriate working relationships with professional colleagues.

700062.2 Communication in Health (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

400732 - Communication in Health, 400131 - Communication for the Helping Professions

Special Requirements

Students must be enrolled at UWS College.

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Communication is integral to professional relationships, whether working individually with a client, educating community members on health matters, or working with other professionals as part of a multidisciplinary team. This unit aims to develop communication skills in preparation for work within the health professions across these areas. Communication skills will include those needed to form therapeutic relationships with individual clients and groups,

as well as those required to communicate health information to clients, groups and the wider community. Students will develop skills to establish appropriate working relationships with professional colleagues.

300007.1 Communication Systems

Credit Points 10 **Level** 3

Prerequisite

300057.1 Signals and Systems

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.

300090.1 Compiler Theory and Practice

Credit Points 10 **Level** 3

Assumed Knowledge

This unit relies heavily on material presented in Systems Programming 1, Data Structures and Algorithms and Formal Languages and Automata; particularly the last mentioned from which it follows on. This is an advanced unit, typically offered at third year or postgraduate level and could not be undertaken sensibly without at least the material listed.

Prerequisite

300167.1 Systems Programming 1 AND **300103.1** Data Structures and Algorithms AND **300121.1** Formal Languages and Automata

Equivalent Units

14957 - Compiler Theory & Practice

The discovery and practical application of compiler theory has been one of the major achievements of computer science since the mid 1950s. This unit provides computing or computer science majors with an introduction to one of the cornerstones of their discipline. The unit provides: an accurate conceptual model of what occurs when source code is being compiled; an appreciation of the limitations of compilers and translators in general; the knowledge and practical skills necessary to design and implement interfaces of greater syntactic complexity than menus; sufficient general technical knowledge to provide an adequate basis for acquiring product-specific technical knowledge, and then to provide applications development support in any programming language environment.

300373.1 Complex Forensic Case Studies

Credit Points 10 **Level** 3

Assumed Knowledge

Successful completion of first year Forensic Science and/or Criminology units; understanding of the principles and practice of collecting and analysing physical evidence.

Special Requirements

This unit is only available to students who are enrolled in 3589 Bachelor of Science (Forensic Science).

This is an advanced and integrating unit for students who have a strong background in the collection and analysis of forensic evidence. Students are required to use their skills and knowledge in the context of a range of forensic cases, which may raise contemporary issues such as terrorism, corporate crime, computer crime, money laundering and people smuggling. As well as gaining a deeper understanding of the complex social, legal, national and international contexts in which forensic evidence is evaluated, students will gain experience of managing a variety of types of evidence within a number of case studies, including the preparation and presentation of expert witness reports and consideration of the ethical issues related to the role of an expert witness.

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.

300447.1 Computer Forensics Workshop

Credit Points 10 **Level** 3

Assumed Knowledge

This is the capstone practical unit for Computer Forensics major of the Bachelor of Computer Science, as such it is assumed that the students of this unit will have completed all other units in the major.

Prerequisite

300149.1 Operating Systems AND **300165.1** Systems Administration Programming AND **300143.1** Network Security

Special Requirements

This unit requires specialised technical laboratory facilities, and specialist academic staff that are very limited in number. As such the School of Computing & Math believes it can support the running of this unit for no more than 20-24 students per year which is the expected number completing the Computer Forensics major. In addition the specified pre-requisites are unlikely to be met by students not enrolled in the Bachelor of Computer Science.

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This unit is composed of a series of investigative workshops that put into practice, in a Computer Forensics context, many of the technical skills developed in earlier pre-requisite units. The unit is intended to not only further develop these skills but to instil best technical practice, sound understanding of technical investigative techniques and documentation of the results of investigation. Workshop topic areas include: clean media copying techniques, search and identification of hidden data, building profiles of computer activities through probing and analysis of log files and how to prepare a system and network to best support subsequent intrusion and activity detection.

300093.1 Computer Graphics

Credit Points 10 **Level** 3

Prerequisite

300103.1 Data Structures and Algorithms OR **300027.1** Engineering Computing OR **300581.1** Programming Techniques

Equivalent Units

14956 - Computer Graphics

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Computer graphics is a fascinating area of computer science. It is widely used as a tool for visualising information in a broad variety of fields, including science and engineering, medicine, architecture, and entertainment. This unit teaches the concepts and techniques of computer graphics. It is designed as an introduction to the study of visual presentation techniques. Topics covered are intended to provide students with an understanding of the basic principles for design, use and understanding of graphics systems. The unit covers the basic concepts in computer graphics using VOGLE library on UNIX. Techniques and algorithms will be emphasized and programming in C or C++ under UNIX will be required.

300565.1 Computer Networking

Credit Points 10 **Level** 2

Assumed Knowledge

Fundamentals of computer architecture, binary and hexadecimal numbering systems, and programming principles. They should also have a working knowledge of the World Wide Web.

Equivalent Units

300094 - Computer Networking Fundamentals, 300086 - Applied Data Communications and Networking

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Computer Networking is an introductory unit in computer systems networking. It covers basic networking technologies, Ethernet fundamentals, ISO OSI model, routing, switching and subnetting, the Internet architecture, networking protocols including TCP/IP, important networking devices such as repeaters, hubs, bridges, switches, routers and gateways, basic management and security issues. This unit is also the first of three units,

which will prepare students for industry based networking certification (CCNA).

700012.1 Computer Networking (UWSC)

Credit Points 10 **Level** 2

Assumed Knowledge

Fundamentals of computer architecture, binary and hexadecimal numbering systems, and programming principles. Students should also have a working knowledge of the World Wide Web.

Equivalent Units

300094 - Computer Networking Fundamentals, 300086 - Applied Data Communications and Networking, 300565 - Computer Networking

Special Requirements

Students must be enrolled at UWS College.

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This introductory unit in computer systems networking covers basic networking topologies, Ethernet fundamentals, ISO OSI layers, routing, switching and sub-nets, the Internet architecture, networking protocols including TCP/IP, important networking devices such as repeaters, hubs, bridges, routers and gateways, basic management and security issues. This unit is also the first of three units which will prepare students for industry based networking certification.

300095.2 Computer Networks and Internets

Credit Points 10 **Level** 3

Prerequisite

300094.1 Computer Networking Fundamentals OR **300565.1** Computer Networking OR **300086.1** Applied Data Communications and Networking

Special Requirements

This unit is offered at an advanced level and students need to have a good knowledge in fundamentals of data communications, computer networking and basic knowledge of programming in C++ language to successfully complete the unit.

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This unit extends on the work undertaken in the prerequisite unit and provides students with an in-depth understanding of the role of TCP/IP, ICMP and routing protocols used in IP networks and internetworks. Students will learn about the critical role of routing protocols and how to design, construct and implement small internets. Students will also learn how to perform basic management and security tasks in a practical, hands-on fashion using Cisco routers and other networking equipment. This is the second of three units that prepares the student for industry based networking certification (CCNA).

300096.4 Computer Organisation

Credit Points 10 **Level** 2

Prerequisite

300580.1 Programming Fundamentals OR **300027.1** Engineering Computing

Corequisite

20025.1 Discrete Mathematics OR **200237.1** Mathematics for Engineers 1

Incompatible Units

300092 - Computer Architecture

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This unit is designed for computer science students, particularly those interested in memory and CPU functional organisation, hardware/software interface, systems programming, and computer system performance evaluation. The unit will provide students with a fundamental knowledge of computer systems abstraction, design, exploitation and configuration. Students will primarily gain an insight into the low level interface between the hardware and software in terms of ISA (Instruction Set Architecture) abstraction of a computer system, where students will use assembly language to deal with memory addressing, load-store architecture, and I/O operations. The students will also learn about the hardware implementation of major datapath components and pipelined micro-architectures. After completing this unit students will understand the major issues in the state-of-the-art computer architecture, especially the modern microprocessors.

300569.1 Computer Security

Credit Points 10 **Level** 3

Assumed Knowledge

The students are expected to have general understanding on computer systems; computer fundamentals, databases, and web technologies.

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This unit identifies and analyses various principles and technologies related to security and privacy and discusses practical application of those principles and technologies in securing computer systems. It is designed to provide basic computer security skills required by any discipline that uses computer systems and also lays a solid foundation for individuals who are keen to pursue a career in computer security. In particular, but not limited to, this unit aims at the implementation and management of security and privacy policies of organisations within the standards and legal framework that is also applicable to the Australian standards.

300364.2 Computing Honours Seminar Program

Credit Points 10 **Level** 5

Special Requirements

Students must be enrolled in an Honours degree.

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The seminar program is an integral part of the Bachelor of Computing (Honours) program. It is structured in such a way that there are extensive links with the other components in the program (Research Process and Practice and Computing Honours Thesis). In undertaking and completing tasks associated with this component the student will be working towards the ultimate goal of

completion of the thesis document. Successful completion of the seminar program will allow development of skills, knowledge and a way of thinking which, with the research process and practice component, will assist in the production of the thesis. In this program, students will be given the opportunity to present work in progress reports to peers and academic staff, attend and report research seminars and develop practical experience in articulation of ideas.

300363.2 Computing Honours Thesis

Credit Points 60 **Level** 5

Special Requirements

Students must be enrolled in an Honours degree.

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The aim of this unit is to further develop the student's research and problem solving skills. The student is required to implement the research plan, complete a substantive piece of research in the field of Computing and IT and to communicate the results of that work to an interested and technically literate audience. All projects will therefore contain at least two broad areas of assessment: the substantive work itself and the oral and written communication of the work to others. All assessment components submitted in both of these areas are expected to be of a high professional standard. Students will present their research in the thesis. The thesis topic and structure will vary according to the area of interest of the student and the expertise of the supervisor. The project may comprise theoretical investigation, software or hardware development or some combination of these. The project is meant to be a significant undertaking and to incorporate some element of innovation. Throughout this unit regular planned consultations between the student and supervisor will occur. Students are expected to work to a schedule devised in consultation with their supervisor. The schedule will include set dates for the presentation of draft chapters for review by the supervisor.

300365.1 Computing Research Process and Practice

Credit Points 10 **Level** 7

Equivalent Units

300244 - Information Technology Research Methodology

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The purpose of this unit is to develop knowledge, understanding and application of the process and the practice of inquiry in the field of Computing and IT. This unit does not involve sophisticated, higher order qualitative or quantitative data treatment techniques, but it is expected that students will acquire research knowledge and skills, develop a research design and operationalise it with appropriate procedures. Students will be able to select from a range of research methods appropriate to their individual projects. A major outcome/focus of the unit is on the individualised conceptualisation and development of a structured proposal for conducting dissertation inquiry in the student's area of interest. Ethical issues such as confidentiality and responsibility to those who participate in research projects are stressed and attention is drawn to the political nature of all research. While this unit is intended to

formalise research process and practice, students will be working closely with their supervisors applying their knowledge and skills to their individual projects under the guidance of their supervisor. Emphasis will be placed on consultation and negotiation with supervisors and producing deliverables for students' individual projects.

200189.1 Concepts of Mathematics

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics, Band 4, 5, or 6, or equivalent.

Equivalent Units

300672 - Mathematics 1A

Incompatible Units

200031 - Mathematics for Business, 200195 - Mathematical Methods A, 200196 - Mathematical Methods B, 200237 - Mathematics for Engineers 1

Special Requirements

No student enrolled in the 3621 Bachelor of Engineering degree course should enrol in this unit. Although not equivalent, students will not be allowed to count Mathematical Methods A, Mathematical Methods B, Maths for Business, Engineering Mathematics 1 for credit with Concepts of Maths

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This level one hundred unit provides a solid foundation in the theory and applications of differential and integral calculus, as well as some introductory work on complex numbers and matrix algebra. This unit provides the necessary preparation for many of the later-stage mathematics units.

300736.1 Concrete Structures (UG)

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge of engineering mechanics and statics.

Prerequisite

300733.1 Introduction to Structural Engineering

Corequisite

300732.1 Structural Analysis

Equivalent Units

85251 - Concrete Structures (UG)

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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.

400184.1 Conducting Medicolegal Assessments

Credit Points 10 **Level** 3

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Experienced health professionals may choose to conduct medicolegal assessments as part of their business. These assessments and subsequent reports are different in their intent and format to those completed by treating professionals. This unit teaches students about relevant state and federal legislation and statutes, legal terminology and practices, the personal injury claim process, what is expected of an expert witness, the process of conducting an assessment, report writing skills, and giving evidence in court. While the focus will be on occupational therapy medicolegal assessments, students and professionals from other disciplines should also find this unit of interest.

300617.2 Conservation Biology

Credit Points 10 **Level** 3

Prerequisite

300792.1 Biology A - The Diversity of Life OR **300222.1** Biology 2 AND **300634.1** Ecology OR **300623.2** Genetics OR **300609.1** Plant Physiology OR **300608.1** Animal Physiology OR **300547.1** Human Genetics OR **300328.1** Botany

Equivalent Units

BI303A.1 - Environmental Biology 3.1 (V1), 300466.1 - Environmental Biology 3.3

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This unit will develop a sound understanding of the principles and practices of conservation biology in both an Australian and International context. Ethical and historical aspects of conservation biology will also be considered in addition to the science of conservation. Students will gain an understanding of the processes that have led to, and are leading to, species extinction. Methods and issues associated with conservation are considered; these include the principles of population genetics, population viability analysis, and the use of modelling. Other issues and concepts covered include the uses of wildlife, illegal wildlife trafficking and trade, biosecurity and the types of international, national and local laws and agreements that relate to conservation in general. The unit emphasises the importance of biodiversity and scientific research in conservation biology.

200504.1 Construction Economics

Credit Points 10 **Level** 4

Assumed Knowledge

Building construction including residential, light industrial and small commercial as well as building measurement and estimating.

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This subject is designed to provide students with: an understanding of economic principles, national and international economic issues; general investment issues; how the national and international economy functions; how the building industry and the building firm relates to the national and international economy; and how economic reasoning may be applied to various problems in the building industry.

200482.1 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 **BG105A.1** Graphic Communication and Design (V1) AND **BG103A.1** Building 2

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.

200484.2 Construction in Practice 3

Credit Points 10 **Level** 4

Assumed Knowledge

In-depth knowledge and of construction processes for large buildings. In-depth knowledge and understanding of construction professionals involved in large scale construction projects. Ability to carry out estimates of costs for large construction projects. In-depth understanding of the principles of Project and Construction Management. In-depth understanding of Construction Planning. In-depth understanding of Building Control legislation. In-depth understanding of energy conservation issues. In-depth understanding of contract administration and tendering procedures.

Prerequisite

200482.1 Construction in Practice 1 AND **MG313A.1** Project Management AND **PL302A.1** Construction Planning (V1)

Equivalent Units

BG408A - Building in Practice 3

This version of the unit will commence from 2010. 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.

200503.1 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 an overview of information management, data collection and storage, information classification systems, communications, specialist computer applications and artificial intelligence.

300728.1 Construction Planning

Credit Points 10 **Level** 3

Assumed Knowledge

Understand estimating preliminaries for multi storey construction.

Prerequisite

200468.1 Estimating 1

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.

300720.1 Construction Technology 1 (Civil)

Credit Points 10 **Level** 2

Prerequisite

BG101A.1 Building 1 OR **BG103A.1** 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.

300721.1 Construction Technology 2 (Substructure)

Credit Points 10 **Level** 2

Equivalent Units

BG207A - Construction Technology 2 (Substructure)

This unit will aim to further develop students knowledge of substructures. Content: Retaining walls and footing structures; strip footings, piling, piers, raft slabs, waffle-pod structures, load bearing capacity, impact of structure on surface and sub-surface drainage, underpinning and temporary substructures, waterproofing techniques.

200502.2 Construction Technology 3 (Concrete Construction)

Credit Points 10 **Level** 3

Assumed Knowledge

It is expected that students will have first studied the Building 1 and 2 units as well as Construction Technology 2.

Prerequisite

BG207A.1 Construction Technology 2 (Substructure)

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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.

200470.2 Construction Technology 4 (Steel Construction)

Credit Points 10 **Level** 3

Assumed Knowledge

Information gained from the contents of Building units and prior Construction technology units.

Prerequisite

BG207A.1 Construction Technology 2 (Substructure)

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This unit deals with the construction of structural steelwork. Students will gain 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.

200471.2 Construction Technology 5 (Envelope)

Credit Points 10 **Level** 4

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After undertaking this unit, students should understand the way building envelopes are designed and constructed to optimise thermal, visual and acoustic comfort and for energy efficiency.

300725.1 Construction Technology 6 (Services)

Credit Points 10 **Level** 4

Equivalent Units

BG406A - Construction Technology 6 (Services)

Special Requirements

Students must be enrolled in courses 2607 - Bachelor of Construction Management, 3621 - Bachelor of Engineering - Construction Key Program, 3636 - Bachelor of Engineering (Advanced) - Construction Key Program

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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.

200084.1 Consumer Behaviour

Credit Points 10 **Level** 1

Equivalent Units

61721 - Consumer Behaviour, MK105A - Buyer Behaviour

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In 2012 this unit replaced by 101828 - Advertising: Digital Media. 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. This unit covers assumptions and concepts related to understanding the consumer, including but not limited to cultural and ethnic values, social class and status, personal influence, family and household influences, situational influences, consumer resources, involvement, motivation and knowledge, attitudes, individual differences in behaviour, personality, values and lifestyle, information processing, learning, influencing attitudes, diagnosis of decision process and behaviour, consumer decision-making process and need recognition, information search, alternative evaluation, purchase and its outcomes, retailing and consumer trends, market segmentation, diffusion of innovations, global consumer markets, consumerism and social responsibility.

300360.1 Consumer Issues in Nutrition

Credit Points 10 **Level** 2

Assumed Knowledge

A basic understanding of human nutrition and the food supply chain. Computer literacy.

Equivalent Units

FS204A - Food and Nutrition Practicum 2.1

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This unit explores current food and nutrition issues relevant to health and wellbeing. It introduces students to the factors that influence public health nutrition and explores (a) the contribution food systems and food security makes to consumer wellbeing; (b) the changing global marketplace and the impact of globalisation on food security and ecological sustainability; and (c) the complex inter-

connections between government policy, globalisation, consumerism and nature of human health. The current metabolic disease epidemic highlights the importance of public health nutrition research and health promotion practice in this field as affluence is threatening personal health and sustainability. Students will assess nutritional status from available data and explore the role of community food systems in this assessment. Students will also be introduced to social research methods and plan a social research study that explores current consumer and producer challenges.

100800.2 Consumer Psychology

Credit Points 10 **Level** 3

Assumed Knowledge

Assumed knowledge of 100020 - Social and Developmental Psychology. Consumer Psychology is an applied field. Assumed knowledge of core psychological issues will facilitate learning.

Consumer Psychology is the study of how people relate to and involve with products and services that they purchase or use. It attempts to describe, predict, explain, and/or influence consumer responses to products and service-related information and experiences. It contains a broad range of theoretical, conceptual, and methodological perspectives. It is indeed the psychology of how consumers think, feel, reason, and select between different alternatives (e.g., brands, products); how the consumer is influenced by his or her environment (e.g., culture, family, signs, media) and what leads to buying behaviour. By understanding the consumer, we will be able to make informed decisions and apply appropriate marketing and advertising strategies.

400335.2 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

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.

200108.1 Contemporary Management Accounting

Credit Points 10 **Level** 2

Prerequisite

200116.1 Management Accounting Fundamentals

Equivalent Units

61122 - Advanced Management Accounting, AC303A - Advanced Management Accounting (V1), H2762 - Management Accounting

This unit views contemporary areas of management accounting from a strategic perspective, and critically examines some of the traditional concepts and techniques discussed in Management Accounting Fundamentals.

200568.2 Contemporary Management Issues

Credit Points 10 **Level** 3

Prerequisite

200571.1 Management Dynamics OR **MG102A.2** Management Foundations

Equivalent Units

H3740 - Contemporary Management Issues

This is an engaged unit that requires students to undertake real-world projects to support selected industry or community partners. The unit also 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 social and environmental issues in management, and 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.

400894.1 Contemporary Youth Health Issues

Credit Points 10 **Level** 3

Incompatible Units

400795 - Contemporary Youth Health Issues, 400280 - Sexuality, 400791 - Introduction to Drug Use in Society

The unit explores contemporary health issues which relate to young peoples' health and wellbeing through a range of topics and issues that construct young peoples' lives. Students will examine the nature of young people's lives and the biological, psychosocial, sociological, and political environments that significantly impact and influence young peoples lives and health. The nature, extent and social determinants of risk taking will be explored in light of the 'tasks of adolescence'. The unit will further equip students with the skills to seek out appropriate support networks and agencies within the community, and to put into place processes that will assist young people to better deal with these health issues.

300009.2 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

300057.1 Signals and Systems OR **300480.1** 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 utilized considerably.

300545.1 Coordination Chemistry

Credit Points 10 **Level** 2

Prerequisite

300224.1 Chemistry 1 OR **300554.1** Principles of Chemistry

Equivalent Units

300230 - Inorganic Chemistry 2, J2758 - Inorganic Chemistry 2

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Students studying at Parramatta campus should refer to 300230 - Inorganic Chemistry 2. This unit introduces students to a thorough study of coordination chemistry (discussing complexes, ligands, structure, isomerism, stability, reaction mechanisms, oxidation states, elements in the first transition series, and trends in the periodic table). That foundation is then used to study applications of coordination chemistry in biological systems, in medicine and in areas such as radiopharmaceuticals. The unit then moves on to areas of fundamental inorganic chemistry, including bonding, solution chemistry, and solid state chemistry. This unit also introduces many of the laboratory techniques and equipment that are used in synthetic procedures in coordination chemistry.

400982.1 Core Competencies in Physiotherapy Practice

Credit Points 10 **Level** 2

Prerequisite

400906.1 Introduction to Physiotherapy Practice AND **400732.1** Communication in Health AND **400881.1** Functional Anatomy AND **400882.1** Introduction to Biomechanics AND **400138.2** Pathophysiology 1

Corequisite

400981.1 Clinical Pharmacology

Special Requirements

This unit is restricted to students who are enrolled in 4662 Bachelor of Health Science/Master of Physiotherapy or 4668 Bachelor of Health Science (Honours)/Master of Physiotherapy. This is a speciality unit offered as a compulsory core unit of the physiotherapy program. It is profession specific, preparing students to practice as an occupational therapist and not relevant as an elective for non-occupational therapy students. Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National

Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010. 3) A senior first aide certificate which includes cardiopulmonary resuscitation. If students are visiting a NSW Health facility they will need to comply with the NSW Health Occupational Screening and Vaccination Against Infectious Diseases Policy. Students in this program are required to participate fully in practical classes. This involves disrobing to shorts and singlet or swim-suit equivalent in mixed gender classes. Students will practice hands-on physiotherapy examination and treatment techniques on both genders, and will personally experience these techniques which will be performed on them by other students and relevant academic staff. Students are required to wear the physiotherapy student uniform to all tutorials and during the 2-week clinical placement.

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This unit builds on the knowledge and skills developed in first one and a half years of physiotherapy study. It focuses on the core competencies of physiotherapy professional practice, which will be developed through a variety experiential and community engagement learning activities. Professional competencies addressed in this unit include communication, documentation, reflection, professional and ethical behaviour. In addition, students will develop skills in client assessment, interpretation of findings and education. A professional practice placement is incorporated into this unit.

200109.3 Corporate Accounting Systems

Credit Points 10 **Level** 3

Prerequisite

200536.1 Intermediate Financial Accounting

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This unit builds on the fundamental knowledge of accounting procedures gained in Intermediate Financial Accounting. It involves the comprehensive study of aspects of corporate accounting and reporting which are regulated by legislation, accounting standards, Australian Securities and Investment Commission and Stock Exchange requirements. This unit is designed to provide students with grounding in the regulation and practice of corporate reporting in Australia. The major orientation is towards the theoretical and practical aspects of corporate reporting, whilst at the same time exploring the reasons for regulatory disclosures.

200488.2 Corporate Financial Management

Credit Points 10 **Level** 2

Assumed Knowledge

HSC Mathematics, introductory economics or microeconomics

Prerequisite

200101.1 Accounting Information for Managers OR **200103.1** Accounting Reports and Decisions

Equivalent Units

200050 - Financial Management, 200110 - Corporate Financial Decision Making

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This unit introduces the fundamental concepts of finance theory and the tools of financial decision making in the context of the Australian institutional environment. These concepts relate primarily to the time value of money, risk and return, capital budgeting and capital structure. The unit's purpose is to develop an understanding of the basic practices of financial management from the perspective of a firm (both large and small). Students examine the investment, financing and dividend decisions of corporations.

300374.2 Crime Scene Investigation

Credit Points 10 **Level** 2

Prerequisite

300375.1 Digital Forensic Photography 1

Special Requirements

Students must be enrolled in 3589 Bachelor of Science (Forensic Science).

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Most forensic evidence used in the prosecution of criminal cases is initially established at the crime scene and the reliance of practitioners to recognise, recover, preserve and record this evidence forms a critical function within forensic science and criminal investigation. This unit introduces the learner to a range of crime scene practices that provides the learning with the knowledge and skill to unpack a complex scene with voluminous detail, into a more specifically targeted range of forensic evidence items. This unit will explore aspects of crime scene investigation including; crime scene processes, recognition of evidence, documentation of crime scenes, evidence detection and enhancement at the scene, maintaining evidence integrity, footwear impression evidence, fingerprinting, blood spatter analysis, toolmarks, hairs and fibres and others. It further introduces professional practices associated with maintaining the evidence integrity and continuity.

300616.1 Crop Production

Credit Points 10 **Level** 1

Assumed Knowledge

Basic knowledge of plants.

Equivalent Units

300451 - Horticulture Production 2, 300329 - Floriculture, 300330 - Fruit Production

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This unit aims to provide students with an understanding of the scientific basis of crop production and the physiological controls on crop yield. It develops the students' practical and technical skills while providing an understanding of scientific basis for environmental modification to improve the quality of crop products. Students will become familiar with the current sources of information available to producers and develop production and management skills through the production of fruits, vegetables, flowers and nursery crops. Students will also gain knowledge on food processing techniques after harvesting.

200586.1 Cross Cultural Management

Credit Points 10 **Level** 2

Equivalent Units

MG206A - Cross Cultural Management

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21st century businesses are looking more and more similar in the way they are designed and operated. Yet to be successful and to gain comparative advantage it is imperative that these businesses manage their workforces differently. Critical to this different way of managing is culture. Culture is the cornerstone that makes people similar, yet different. Taking a multidisciplinary and "hands on" approach, this unit examines the impacts of culture on business practices and management styles.

300715.1 Culinary Science

Credit Points 10 **Level** 3

Prerequisite

300638.1 Experimental Foods

Equivalent Units

FS325A.1 - Culinary Studies 3.2, 300640 - Culinary Studies.

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This unit aims to apply scientific principles to the students' skills and knowledge in the development, preparation and presentation of food products. Using a student-centred approach, along with small group learning, seminars and lectures, students are guided through a pathway of development as autonomous learners through problem-solving activities and experiential techniques. Students integrate and apply to food preparation knowledge and skills from other areas; such as chemistry, biology, food science principles, food skills and nutrition. Creativity and imagination founded on a strong science knowledge base are encouraged when developing and preparing food products. Students are encouraged to keep up to date with new food products, trends and methods in the dynamic food industry as well as current nutritional issues within multicultural and indigenous communities. Students will utilize knowledge and skills gained through their basic science and food science units in order to address specific nutritional issues and the development of new food products to fit within these boundaries.

400866.2 Culture, Diversity and Health

Credit Points 10 **Level** 2

Equivalent Units

700072 - Culture, Diversity and Health (UWSC)

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This unit introduces skills for understanding and engaging effectively with the culturally and socially diverse world in which we live and work. Indigenous Australia is a major theme and students will gain an appreciation of the achievements and needs of Indigenous Australians. The unit examines cultural awareness more broadly and puts these issues in the context of health professionals working in multi-cultural settings and handling culturally different health philosophies and practices. Cultural diversity is

increasingly recognised as a major issue in the delivery of health care and a major determinant of Indigenous health.

700072.1 Culture, Diversity and Health (UWSC)

Credit Points 10 **Level** 2

Equivalent Units

400866 - Culture, Diversity and Health

Special Requirements

Students must be enrolled at UWSCollege unless specific permission has been granted by the School of Biomedical and Health Sciences.

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This unit introduces skills for understanding and engaging effectively with the culturally and socially diverse world in which we live and work. Indigenous Australia is a major theme and students will gain an appreciation of the achievements and needs of Indigenous Australians. The unit examines cultural awareness more broadly and puts these issues in the context of health professionals working in multi-cultural settings and handling culturally different health philosophies and practices. Cultural diversity is increasingly recognised as a major issue in the delivery of health care and a major determinant of Indigenous health.

200036.2 Data Mining and Visualisation

Credit Points 10 **Level** 3

Assumed Knowledge

200192 - Statistics for Science or 200032 - Statistics for Business or 200263 - Biometry

Prerequisite

300104.1 Database Design and Development

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This unit presents data mining as a well structured standard process, namely, the Cross Industry Standard Process for Data Mining (CISP-DM). Further, this unit emphasizes (1) the presentation of data mining as a process, (2) the "White box" approach, emphasizing an understanding of the underlying algorithmic structures, (3) the graphical approach, emphasizing exploratory data analysis, and (4) the logical presentation, flowing naturally from the CRISP-DM standard process and the set of data mining tasks. This unit gives the insight of the data mining algorithms, by using small data sets and then provides examples of the application of the various algorithms on actual large data sets. Finally it provides the hands-on analysis problems, representing an opportunity to apply acquired data mining expertise to solving real problems using large data sets.

300010.2 Data Networks

Credit Points 10 **Level** 4

Prerequisite

300057.2 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.

300103.1 Data Structures and Algorithms

Credit Points 10 **Level** 2

Prerequisite

300580.1 Programming Fundamentals OR **300027.1** Engineering Computing OR **300155.1** Programming Principles 1 OR **300405.2** Fundamentals of Programming

Corequisite

200025.1 Discrete Mathematics OR **200237.1** Mathematics for Engineers 1

Equivalent Units

J2741 - Data Structures & File Organisations, 14906 - Data Structures, 14945 - Data Structures

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This unit introduces students to fundamental data structures and algorithms used in computing. The material covered forms the basis for further studies in programming and software engineering in later units. The unit focuses on the ideas of data abstraction, object-oriented programming, and software reuse. Issues relating to computational complexity of algorithms are addressed throughout the session. Topics covered include: the fundamental abstract data types (lists, stacks, queues, trees, hash tables, graphs); recursion; complexity of algorithms; internal and external sorting and searching algorithms; file structures; and B trees.

300104.2 Database Design and Development

Credit Points 10 **Level** 2

Assumed Knowledge

Programming Fundamentals (300580)

Incompatible Units

200129 - Database Management System for Business Information Systems.

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The main purpose of this unit is to provide students with an opportunity to gain a basic knowledge of database design and development including data modeling methods, techniques for database design using a set of business rules that are derived from a case study and finally implementation of the database using a commercial relational database management system. The unit also examines a number of important database concepts such as database administration, concurrency, backup and

recovery and security. At the same time student learning and intercommunication skills are enhanced by running tutorial presentations and group assignments.

700011.1 Database Design and Development (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300104 - Database Design and Development

Special Requirements

Students must be enrolled at UWS College.

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The main purpose of this unit is to provide students with an opportunity to gain a basic knowledge of database design and development including data modeling methods and techniques and database implementation using a database management system.

200485.1 Decision Making for Construction Professionals

Credit Points 10 **Level** 2

Prerequisite

300674.1 Engineering, Design and Construction Practice

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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.

200079.1 Derivatives

Credit Points 10 **Level** 3

Assumed Knowledge

200052.1 - Introduction to Economic Methods OR 200031.1 - Mathematics for Business 200488.1 - Corporate Financial Management

Equivalent Units

61344 - Risk Management, H3686 - Options, Futures and Derivative Products

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This unit provides an introduction to trading and the theory of pricing of options, futures and other derivative products currently used in the domestic and international financial markets.

300012.2 Design Management 1: Product Design Audit

Credit Points 10 **Level** 2

Equivalent Units

10884 - Design Management 1: Corporate Image

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Design Management 1 focuses on the development of the product / service audit process and study of a firm's corporate image, identity, brand, and products as perceived

by the target groups it aims to reach. Students will study the approach taken to develop a strategic design management plan that guides the way a firm presents itself to its target audience and differentiates itself against its competition in the targeted markets. Foundation design principles involving the evaluation of two-dimensional and three-dimensional design are explored through a series of firm-level case studies of firms with prominent and commercially successful design management strategies.

300013.2 Design Management 2: Corporate Image and Identity

Credit Points 10 **Level** 2

Prerequisite

300012.2 Design Management 1: Product Design Audit

Equivalent Units

10885 - Design Management 2: Corporate Identity

Special Requirements

The Company chosen by a student as a case study in 300012 - Design Management 1, on which the assignments are based, should be followed through to 300013 - Design Management 2.

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In Design Management 2 students will develop, based on the Corporate Image Brief and Research established in Semester 1, a methodology and program to study a corporation's approach(es) to communicate with its market audience. The evaluation of the study leads to the formulation of the corporate identity design strategy and brief. The information summarised in the design brief is then used to establish the corporate identity design program, which informs the development of the components of a client company's corporate identity. The company chosen by the students as a case study in Design Management 1, on which the assignments are based, should be followed through to Design Management 2.

300014.2 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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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.

300015.2 Design Management 4: Design Process

Credit Points 10 **Level** 3

Assumed Knowledge

The successful completion of Level 2 units and 300014 Design Management 3 or equivalent would be of advantage and will be assumed.

Equivalent Units

10887 - Design Management 4: Corporate Design

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Design Management 4 focuses on fundamental issues of the design process and design management. It exposes students to the various theories and models underlying trade-offs and choices made during the design process and issues of intellectual property. Experiential exercises and contemporary case studies are used throughout the unit. Students will consider how models of design processes impact on existing products and their own design work. This unit is part of a sequence of four units that constitute the sub-major in Design Management and eight units that constitute the major in International Design Management and Innovation Design Management.

300016.1 Design Science

Credit Points 10 **Level** 1

Assumed Knowledge

Any two units of HSC Mathematics

Equivalent Units

J1807 - Engineering Science

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An understanding of how the built environment works is essential to designers and construction professionals. This unit provides an introduction to physical units of measure, tolerance, statics, dynamics and optics. It also introduces students to electricity and magnetism as well as the concepts of momentum, energy, work, power and the operation of motors and machine. Students engage with these concepts through a hands-on learning experience including practical projects and live demonstrations.

300305.2 Design Studio 1: Themes and Variations

Credit Points 10 **Level** 2

Assumed Knowledge

It is assumed that students have completed Applied Ergonomics and Industrial Graphics 1.

Prerequisite

300462.1 Engineering and Design Concepts

Equivalent Units

10953 - Design Process 1: The Design Concept, J2815 - Design Principles 2D/3D, J2869 - Design Principles

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In this unit students are given the opportunity to apply their design and communication skills to generate a wide range of concepts in response to a number of design briefs. Students explore concepts according to aesthetic and functional criteria through hand sketching, rendering and model-making.

300308.2 Design Studio 2: The Design Proposal

Credit Points 10 **Level** 2

Assumed Knowledge

300305 - Design Studio 1: Themes & Variations, 300309 - Sustainable Design: Life Cycle Analysis, 300302 - Industrial Graphics 1: Presentation, 300282 - Industrial Graphics 2: Transition

Equivalent Units

10954 - Design Process 2: The Design Proposal, J2870 - Design Application, J3804 - Design Project 1

.....

Design Studio 2 will develop the ability of students to advance a design concept up to the point of pre-production. The unit explores the often complex influences on a design proposal - from the methods used to identify the needs of people, future purchase patterns, production limitations to price point analysis. It focuses on the integrative nature of the process of designing.

300311.2 Design Studio 3: Product Realisation

Credit Points 10 **Level** 3

Assumed Knowledge

300308 - Design Studio 2: The Design Proposal, 300309 - Sustainable Design: Life Cycle Analysis, 300306 - Sustainable Design: Sustainable Futures, 300282 - Industrial Graphics 2: Transition, 300310 - Industrial Graphics 3: 3D Solids.

Equivalent Units

10955 - Design Process 3: Product, J3765 - Advanced Design Application, J3805 - Design Project 2, J3825 - Design Project (Integrated)

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In this unit, students respond to a set design brief so that they can develop a more comprehensive understanding of the design process, from initial briefing to product realisation. Students first investigate the task from multiple perspectives then generate a wide range of possible solutions. The most promising concept, the most feasible, innovative and appropriate to the specific user and context, is then refined, developed and professionally communicated using a wide range of design techniques and media.

300313.2 Design Studio 4: Simulate to Innovate

Credit Points 10 **Level** 3

Assumed Knowledge

It is assumed students have completed Industrial Graphics 2 and Industrial Graphics 3 and are proficient in computer solid modelling. Knowledge of plastic manufacturing is also essential.

Prerequisite

300311.2 Design Studio 3: Product Realisation

Equivalent Units

10956 - Design Process 4: The Design Context

Design Studio explores the strategies for Industrial Design within the complex and contradictory context of operating as designers in late-industrial cultures. The complexity of designing in Australia for a global economy with local peculiarities will be studied with a particular emphasis on designing for users who are increasingly difficult to know. These same users are also demanding more protection from goods and services they consume and demonstrate increasing doubts about the claims that advertisers make. These factors are bringing new issues into the Industrial Design context. Product innovation with an emphasis on rapid prototyping will form the basis of assessment in this unit.

300314.1 Designed Inquiry

Credit Points 10 **Level** 3

This unit instructs students in the practical techniques required for designing, conducting and presenting research, in an action-learning environment. Actual research projects based on design-related issues will be explored. A range of research methods will be presented and students will be assisted in the strategic selection of appropriate methods in designing their research. This unit provides a forum for students to bring together and present both the design and results of research. Students will have the opportunity to select and explore their own research topics developed in consultation with the lecturer or tutor, design data collection instruments, analyse data and engage in peer discussions about the significance of their findings.

300111.1 Developing Web Applications with XML

Credit Points 10 **Level** 3

Assumed Knowledge

300582-Technologies for Web Applications, 300580-Programming Fundamentals

This third year unit provides a comprehensive coverage of XML, related emerging technologies and their use in web applications. Students will be given opportunities to develop web based information systems which rely upon these

technologies. This unit is heavily oriented to practical based work.

300723.1 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

In this unit current issues related to development control will be critiqued. These include: 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.

200030.1 Differential Equations

Credit Points 10 **Level** 2

Assumed Knowledge

200189 - Concepts of Mathematics

Incompatible Units

200238 - Mathematics for Engineers 2

Differential equations arise naturally, both in abstract mathematics and in the study of many phenomena. This unit provides the theory of ordinary differential equations and an introduction to partial differential equations, together with methods of solution. Examples are drawn from a wide range of biological, chemical, physical and economic applications.

300112.1 Digital Communication Technology

Credit Points 10 **Level** 2

Prerequisite

300086.1 Applied Data Communications and Networking OR **300094.1** Computer Networking Fundamentals

Equivalent Units

J3750 - Advanced Data Communications, 14961 - Data Communications 2

This unit is designed for students majoring in data communications. The unit introduces students to the principles, theories, techniques, and systems used in the vast area of digital communications. Students learn about coding and compression, and their corresponding industry standards. The characteristics and performance of various data communication systems such as analog and digital are also examined.

300370.1 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.

Equivalent Units

84465 - 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

300375.1 Digital Forensic Photography 1

Credit Points 10 **Level** 2

Special Requirements

This unit is only available to students who are enrolled in 3589 Bachelor of Science (Forensic Science).

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Documenting perishable and non-perishable forensic evidence is an important function in forensic science. This unit introduces the student to the practice of digital photography for forensic laboratory and crime scene applications. Digital Forensic Photography 1 exclusively uses digital photography technology due to the recent wide spread application of this technology in industry. Students will gain theoretical understanding of the technology and practical application through established workshops.

300376.2 Digital Forensic Photography 2

Credit Points 10 **Level** 2

Prerequisite

300375.1 Digital Forensic Photography 1

Special Requirements

Unit restricted to students enrolled in 3589.1 and 3589.2 Bachelor of Science (Forensic Science).

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Digital Forensic Photography 2 explores the application of digital forensic photography to preserve and enhance forensic evidence. The unit's focus is mostly on optical and digital enhancement techniques that provide essential and non-destructive methods of enhancing physical evidence. Forensic photography is a critical area within the forensic sciences and an important skill for forensic practitioners. It further provides the learner with the necessary theoretical concepts of photographic science that underpins the conceptual aspects of evidence enhancement. Topics

include; optical enhancement of evidence, digital enhancement of evidence, the detection of photographic forgeries, invisible radiation photography, polarising photomicroscopy, photomacrography, photomicroscopy, polarisation photography, photographic science and others.

300069.2 Digital Signal Processing

Credit Points 10 **Level** 3

Assumed Knowledge

Student's should be able to apply knowledge from 300005 - Circuit Theory: Employ the basic principles of analysing an AC electric circuit; Apply Kirchoff's Voltage and Current laws and their use in electric circuits; Apply Nodal analysis, mesh analysis and superposition analysis to AC electric circuits; Utilise Laplace Transform and its applications to Electric Circuits; Demonstrate the concept of Bode plot and frequency response; Examine passive and active filters.

Prerequisite

300057.2 Signals and Systems

.....

This unit is aimed to provide an introduction to fundamental concepts and principles in digital signal processing. It focuses on signal analysis, digital filter design, hardware implementation and applications.

300018.1 Digital Systems 1

Credit Points 10 **Level** 1

Assumed Knowledge

Topics from 300021 - Electrical Fundamentals: Understand the basic principles of analysing an electric circuit; Understand Kirchoff's Voltage and Current laws and their use in electric circuits; Understand the concept of operational amplifier and its circuit.

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This unit provides students with a solid background in digital logic design. Students are introduced to the fundamentals of digital logic with number systems, basic logic devices and Boolean algebra. Analysis and design of combinational and sequential logic circuits is covered in detail. Design with programmable logic devices is introduced.

300019.3 Digital Systems 2

Credit Points 10 **Level** 3

Prerequisite

300018.1 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.

300702.1 Disaster and Emergency Management

Credit Points 10 **Level** 3

Equivalent Units

300449 - Environment, Health and Emergency Management

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The unit consists of project based studies that explore how human societies prepare for and respond to disasters and emergencies. The unit uses case studies to investigate the historical practice of risk assessment and prevention strategies for community safety during times of critical incidents, including emergency management strategies for community recovery, public education about critical incidents and how the effects of emergencies can be reduced to assist with community recovery. The unit will facilitate improved understanding by developing scenarios of impending issues such as global pandemics of infectious disease, natural disasters and man made emergencies (terrorism).

200025.1 Discrete Mathematics

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics or equivalent

Equivalent Units

ST107A - Discrete Mathematics, 14349 - Discrete Mathematics

Incompatible Units

14950 - Algebra 1A and 1B, 14503 - Maths 3, 14323 - Maths for Computing

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This Level 1 unit introduces set theory, symbolic logic, graph theory and some counting problems. It serves as a grounding for further study in mathematics or computing.

300699.1 Discrete Structures and Complexity

Credit Points 10 **Level** 2

Assumed Knowledge

Basic programming such as that in 300580 - Programming Fundamentals.

Prerequisite

300700.1 Statistical Decision Making

Incompatible Units

200025 - Discrete Mathematics

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The fact that computers work at all in the way they do is due to the formal mathematical structure that is used in their design. The same holds for establishing important matters such as the reliability of our computer networks. This unit presents, in their computing context, a range of mathematical concepts that are essential for understanding a number of topics concerning computers: the ways they work, they ways they interact, and the ways we interact with them.

300782.1 Disease Prevention and Control

Credit Points 10 **Level** 3

Assumed Knowledge

A knowledge of microbiology, epidemiology or biology would be an advantage.

.....

Changes in human lifestyles, rapid urbanisation, industrial expansion, environmental degradation, international migration and travel, changing demography, and demands for mass-produced food have promoted diseases which challenge conventional clinical treatment and require integrated population health management strategies. While the newer epidemics of obesity, dementia, interpersonal violence, transport-related accidents, cardiovascular diseases and cancers predominate in industrialised areas, the earlier communicable conditions of a bacterial, viral or parasitic nature still occur, and in some cases have re-established to epidemic proportions. The unit addresses both communicable and non-communicable/chronic diseases and develops skills for planning integrated strategies for their prevention and control at population level.

300115.1 Distributed Systems and Programming

Credit Points 10 **Level** 3

Prerequisite

300167.2 Systems Programming 1 AND **300094.2** Computer Networking Fundamentals OR **300565.1** Computer Networking

Special Requirements

Students must pass 300167 Systems Programming 1 and must pass either 300094 Computer Networking Fundamentals or 300565 Computer Networking prior to enrolling in this unit.

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This unit covers concepts and design of, and programming for distributed systems. It builds on basic network communication protocols (specifically IP) to cover client-server programming using both the system level socket interface and remote procedure calls. It also examines large-scale distributed system architectures, particularly those based on distributed objects, and considers the complexities inherent in distributed transactions. Key concepts covered include data and algorithmic distribution, idempotent protocols, stateless and stateful servers, and distributed system transparency. Illustrative case studies are included.

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

.....

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.

300546.1 Drug Design and Synthesis

Credit Points 10 **Level** 3

Prerequisite

300553.1 Molecules of Life: Synthesis and Reactivity OR **300301.1** Organic Chemistry 2

Equivalent Units

300235 - Organic Chemistry 3

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Students studying at Hawkesbury or Parramatta campus should refer to 300235 - Organic Chemistry 3. This unit introduces selected areas of more advanced organic chemistry, targeted largely on the tools to synthesise and identify organic molecules of biological and medicinal interest. The practical skills required are learnt through laboratory exercises which complement the theory.

400961.1 Drugs on Line

Credit Points 10 **Level** 1

Equivalent Units

E1250 - Drugs On Line

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This unit deals with selected issues in drug use, misuse and abuse. An introductory section discusses mechanisms of drug action in the body and their likely effects. Some topical areas include recreational drugs, drugs in sport, vitamins and herbal supplements, oral contraceptives, antidepressants and weight management therapeutic agents.

300480.1 Dynamics of Mechanical Systems

Credit Points 10 **Level** 3

Prerequisite

300035.1 Kinematics and Kinetics of Machines AND **300040.1** Mechanics of Materials

Equivalent Units

300020 - Dynamics and Mechanical Systems

.....

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.

200120.1 E-Business Fundamentals and Systems

Credit Points 10 **Level** 2

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Developments in information systems, particularly those associated with the Internet, have created new opportunities for businesses. Organisations can better manage their internal operations and obtain competitive advantages such as breaking into new markets or offering enhanced levels of service by exploiting these systems. As a consequence, the term 'e-business' (electronic business) has arisen. It refers to activities such as buying and selling, servicing customers and collaborating with business partners, as well as conducting business transactions within an organisation, where these are computer-based or use digital communications. This unit introduces students to the concept of e-business (and its subset, electronic commerce or e-commerce) and shows how this is impacting on the ways businesses are conducted. The unit examines major examples of the types of systems supporting e-business, employing, where appropriate, case studies drawn from business, government, industry and society. It considers the characteristics of these systems, how they are utilised, the opportunities they create, the practical limitations they face, current developments and future trends. The unit particularly looks at their business, legal, ethical and social impacts and implications, both at national and international level.

300634.1 Ecology

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of first-year university biology equivalent to satisfactory completion of 300221 - Biology 1 and 300222 - Biology 2.

Equivalent Units

EY210A - Ecology 2.1

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We live in a society where environmental and ecological problems dominate public discourse. Reference is often made to ecology; terms and ideas that came originally from ecology are used in public discussions, and appear in legislation. This unit will introduce students to ecology: what is studied in ecology, how it is studied, what are the strengths and weaknesses or limitations of ecology. The scope of current ecological thinking will be covered, from the scale of individual organisms, through populations, and up to communities and ecosystems. Methods of study will be highlighted; the practical component of the course will introduce the techniques of conducting basic ecological investigations.

200053.2 Economic Modelling

Credit Points 10 **Level** 3

Prerequisite

200052.1 Introduction to Economic Methods OR **200032.1** Statistics for Business

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This unit builds on concepts explored in Introduction to Economic Methods. The unit broadens the application of the stochastic linear model in econometrics, exploring its use in the estimation of economic models and in the testing of economic hypotheses associated with these models. The emphasis is on learning by doing in small group workshops.

200537.2 Economics and Finance Engagement Project

Credit Points 10 **Level** 3

Assumed Knowledge

Students need to have completed at least four semesters of a course, key program or major run by the School of Economics and Finance.

Special Requirements

Must have achieved at least 150 credit points within the key programs of Economics and Finance, Applied Finance, International Trade and Finance or Applied Economics of course 2739 Bachelor of Business and Commerce OR must have achieved at least 150 credit points within the key programs of Applied Finance or Applied Economics of courses 3659 Bachelor of Science/Bachelor of Business and Commerce and 3655 Bachelor of Information and Communications Technology/Bachelor of Business and Commerce or must have achieved at least 150 credit points within the course 2504 Bachelor of Economics or the course 2526 Bachelor of Economics/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 be confronted with 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 as well as how realistic the solutions they are proposing are, and 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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The unit provides opportunities for students to examine theories and practices associated with Transformative Learning (TL), within oneself and society, and its potential role for the development of professional educators, change agents and leaders in society. TL is learning that is liberating, emancipatory, empowering, profound, deep, and life changing. It occurs through critical reflection on experience, subsequent testing through discourse, and also through intuitive and affective processes. This unit enables students to design and facilitate life-affirming and transformative learning experiences in others.

101663.1 Education for Sustainability

Credit Points 10 **Level** 2

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Sustainable learning requires students to appreciate key ecological issues and to reflect upon their place in contemporary teaching and learning. These ecological

issues suggest the need for ongoing reflection upon subject matter in all discipline alongside reflection upon the ways in which learning relationships are imagined and enacted. Here personal sustainability, the sustainable school and the sustainable society are subject matter alongside social-ecological relationships and the learning systems that underpin them. This unit serves as an introduction to these matters and a provocation to develop a personal relationship to key issues in the area.

101661.1 Education in a Cosmopolitan Society

Credit Points 10 **Level** 3

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This unit responds to the question of what it might mean to educate "world teachers" for cosmopolitan classrooms and schools. For some time multicultural education as policy and practice has dominated schooling in Australia. In globalizing times there has been a shift to considering alternatives and one of these is cosmopolitanism. The unit examines the thesis that cosmopolitanism as a philosophy already underpins western education. The central component of this ideal is the facilitation of reason. In the light of this philosophy, the unit explores arguments about inclusion, examines NSW curricula and pedagogical frameworks.

300567.2 e-Health

Credit Points 10 **Level** 3

Prerequisite

300566.1 Introduction to Health Informatics

Special Requirements

Students in 3663 – Graduate Certificate in Health Informatics are not required to complete the pre-requisite unit 300566 – Introduction to health Informatics before enrolling in 300567 – E-Health.

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This unit exposes students to the processes and techniques of the development of e-Health applications. It extends the students knowledge of Health Informatics by introducing concepts relating to electronic communications within the Health Industry. Areas include the Electronic Health Record Standards, Security, Privacy and Trust together with TeleHealth / TeleMedicine approaches, methodologies, tools and techniques.

300070.3 Electrical Drives

Credit Points 10 **Level** 3

Prerequisite

300071.1 Electrical Machines 1

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The unit aims to introduce the study of electrical machines and drives. The subject covers various types of electrical motors and drive systems, their applications and control. The unit covers various types of the speed control, starting and braking systems and the dynamics of different electrical drives.

300021.1 Electrical Fundamentals

Credit Points 10 **Level** 1

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The objective of this unit is to provide an introduction to fundamental electromagnetism and electric circuit principles. Discussion is restricted to DC, although first-order systems are presented and second order systems introduced in preparation for on-going development. Basic definitions of charge, current, potential difference/relative potential, power, and the electric circuit as a complete path are presented, together with the basic laws - Ohm's Law and Kirchoff's nodal and loop laws. Examples from different engineering disciplines are related to circuit's laws. Basic nodal and mesh analysis are presented together with Thevenin and Norton circuit equivalents, real versus ideal current and voltage sources and the maximum power transfer principle. The operational amplifier as a circuit element is introduced. Energy storage elements (capacitors and inductors) are discussed leading into first-order systems and their natural responses and time-constants. Several basic electromagnetic concepts related to electric and magnetic flux and induced voltage are also discussed.

700024.1 Electrical Fundamentals (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300021 - Electrical Fundamentals

Special Requirements

Students must be enrolled at UWS College.

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The objective of this unit is to provide the student's first introduction to fundamental electromagnetism and electric circuit principles. Discussion is restricted to DC, although first-order systems are discussed and second order systems introduced as a pointer to on-going development. Basic definitions of charge, current, potential difference/relative potential, power, and the electric circuit as a complete path are presented, together with the basic laws - Ohm's Law and Kirchoff's nodal and loop laws. Examples from different engineering disciplines are related to circuit's laws. Basic nodal and mesh analysis are presented together with Thevenin and Norton circuit equivalents, real versus ideal current and voltage sources and the maximum power transfer principle. The operational amplifier as a circuit element is introduced. Energy storage elements (capacitors and inductors) are discussed leading into first-order systems and their natural responses and time-constants. Several basic electromagnetic concepts related to electric and magnetic flux and induced voltage are also discussed.

300071.1 Electrical Machines 1

Credit Points 10 **Level** 3

Prerequisite

300052.1 Power and Machines

Equivalent Units

89010 - Electrical Machines, Electrical Machines 1 (unit codes 84742, 81441, 84140, 84232, 84240, 84243), Electrical Machines 2 (unit codes 84272, 84872, 84280)

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This unit introduces the fundamental principles of electrical machines: DC generators and motors, induction motors and synchronous machines. The unit also introduces various special purpose electrical machines, such as permanent magnet machines, step motors and reluctance machines.

300024.1 Electronic Systems Design

Credit Points 10 **Level** 3

Prerequisite

300069.1 Digital Signal Processing AND **300025.1** Electronics AND **300076.1** Microprocessor Systems

.....

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).

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

.....

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).

300025.2 Electronics

Credit Points 10 **Level** 2

Assumed Knowledge

Topics associated with the unit 300464 - Physics and Materials: Vibrations and wave phenomena; Photoelectric

effect, atomic structure and periodic table; Electricity and magnetism.

Prerequisite

300021.1 Electrical Fundamentals

Special Requirements

Students should have a sound understanding of: The 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.

.....

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.

300584.2 Emerging Trends in Information Systems

Credit Points 10 **Level** 3

Prerequisite

300573.1 Information Systems in Context AND **300583.1** Web Systems Development

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This unit provides a means for students to explore the changing nature of information systems in organisations. Specifically, the role that emerging technologies play in both the design and development of information systems is critically examined. Students will be able to research and assess new technologies, as well as develop and implement effective strategies for achieving change in information systems based on the feasibility of the introduction of the technologies.

200610.1 Employee Training and Development

Credit Points 10 **Level** 2

Prerequisite

200300.1 Managing People at Work

Equivalent Units

61422 - Employee Training and Development

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This unit explores such questions as: Training -- what is it!! How is it linked to strategic development!! It explores education versus training versus development; managing the training department, upper management involvement, career development; cost-effectiveness of training and development; training and development needs -- how people learn, implications for training and development of staff, models and roles for training; needs analysis, objective setting, and the implications of politics, culture

and government; curriculum -- methods content, people, sequencing of curriculum; the advantages and disadvantages of various training methods; measurement of success philosophies, instruments of measurement and post-training measurement.

300026.2 Energy Systems

Credit Points 10 **Level** 3

Assumed Knowledge

Basic knowledge of power frequency devices and systems

Prerequisite

300052.1 Power and Machines AND **300025.2** Electronics

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The unit introduces the global energy picture of electric energy systems, including a look at 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.

300462.1 Engineering and Design Concepts

Credit Points 10 **Level** 1

Equivalent Units

300011 - Design Issues and Principles, J1803 - Impact of Design and Technology, J1757 - Design Issues, J1758 - Engineering Design

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This unit equips students with the fundamental skills that will enable them to use creative design and engineering approaches to solve challenging problems and to understand the design process. Students will be exposed to 2D and 3D visualisation techniques, will learn how to interpret abstract information, and will work on practical projects in an interdisciplinary context. The aim is to provide a common first-year subject that is thematic, rather than discipline-centred and presents students with foundation concepts in engineering and industrial design.

700021.1 Engineering and Design Concepts (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300462 - Engineering and Design Concepts

Special Requirements

Students must be enrolled at UWS College, except under specific circumstances approved by UWS.

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This unit equips students with the fundamental skills that will enable them to use creative design and engineering approaches to solve challenging problems and to understand the design process. Students will be exposed to 2D and 3D visualisation techniques, will learn how to interpret abstract information, and will work on practical projects in an interdisciplinary context. The aim is to provide a common first-year subject that is thematic, rather than

discipline-centres and presents students with foundation concepts in engineering and industrial design.

300027.1 Engineering Computing

Credit Points 10 **Level** 1

Assumed Knowledge

Basic knowledge in use of computers and Windows operating system

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Students are introduced to the techniques of data manipulation and presentation using the common functions of a spreadsheet facility. The unit also aims to instil sound principles of program design that can be utilised in many units throughout the student's course. The basic elements and structures of a high level language are taught. Students are exposed to many engineering problems and are encouraged to implement solutions using an algorithmic approach.

700018.1 Engineering Computing (UWSC)

Credit Points 10 **Level** 1

Assumed Knowledge

Basic knowledge in use of computers and Windows operating system

Equivalent Units

300027 - Engineering Computing

Special Requirements

Students must be enrolled at UWS College.

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Students are introduced to the techniques of data manipulation and presentation using the common functions of a spreadsheet facility. The unit also aims to instill 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 many engineering problems and are encouraged to implement solutions using an algorithmic approach.

700038.2 Engineering Design and Construction Practice (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300034 - Introduction to Professional Practice, 300461- Engineering and Industrial Design Practice, 300674 - Engineering, Design & Construction Practice

Special Requirements

Students must be enrolled at UWS College.

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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.

300481.1 Engineering Electromagnetics

Credit Points 10 **Level** 2

Assumed Knowledge

The students should have a good understanding of 300021 - Electrical Fundamentals

Prerequisite

300464.1 Physics and Materials AND **200238.1** Mathematics for Engineers 2

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.

300482.1 Engineering Geology and Concrete Materials

Credit Points 10 **Level** 1

Equivalent Units

85002 - Engineering Geophysics, 300039 - Mechanics and Materials

.....

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.

300483.2 Engineering Project

Credit Points 20 **Level** 4

Prerequisite

300053.2 Professional Practice

Equivalent Units

85018 - Civil and Environmental Engineering Project 2

Incompatible Units

300484 - Engineering Thesis, 300668 - Advanced Engineering Thesis

Special Requirements

Must have completed at least 240 credit points in their course so that they have a sufficiently solid grasp of their particular major field of engineering.

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This unit includes a capstone project which demonstrates student's professional level of identifying, planning, designing, executing, testing and documenting an engineering project or activity.

300029.2 Engineering Visualization

Credit Points 10 **Level** 2

Assumed Knowledge

C++ Programming and 3-D Geometry

Prerequisite

300027.1 Engineering Computing

Equivalent Units

80151 - Computer Graphics

.....

This unit is aimed 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 modeling, illumination models and image manipulation.

300674.1 Engineering, Design and Construction Practice

Credit Points 10 **Level** 1

Equivalent Units

300461 Engineering and Industrial Design Practice; 300034 Introduction to Professional Practice

Special Requirements

3621 Bachelor of Engineering students must be enrolled in a Key Program.

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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.

300117.2 Enterprise Database

Credit Points 10 **Level** 3

Assumed Knowledge

General understanding of database design and development processes and techniques. Familiarity with at least one programming language.

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The emphasis of this unit is to expose students to the process and techniques of the development of enterprise databases. This unit extends students' basic knowledge of database systems through analysis of suitable strategies for record storage, primary file organisation and database indexing techniques, transaction recovery and concurrency control strategies, general security and integrity considerations, understanding of emerging technologies in distributed databases, object-oriented databases and the world wide web.

200614.1 Enterprise Industrial Relations

Credit Points 10 **Level** 2

Prerequisite

200300.1 Managing People at Work

Equivalent Units

61432 - Enterprise Industrial Relations

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This unit looks at workplace reform and restructuring -- the devolution approach to industrial relations management, workplace reform, organisation and behaviour, the role of workplace committees, trade unions at the enterprise level, shop-floor and industry unionism; the enterprise bargaining process -- overall framework definitions, dimensions and scope; strengths and weaknesses; the processes -- negotiation, psychological, sociological and economic approaches, stages; impact of enterprise bargaining, workplace flexibility, efficiency, remuneration practices and employee satisfaction; grievance handling and grievance procedures; differences with other forms of negotiation, formal or informal; consultation and participation; issues involved, differences with negotiation; impact of changes in wage determination on workplace, particularly the work choices changes and current and future strategic and legislative directions in enterprise bargaining and workplace agreements.

200154.2 Entrepreneurial Management and Innovation

Credit Points 10 **Level** 2

Corequisite

200571.1 Management Dynamics

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This unit examines the theory, practice and nature of entrepreneurship, as a virtual but often neglected and misunderstood mode of management. A basic premise underlying this unit is that all business entities require enterprising management to enhance their survival ability. This proposition is relevant to new and older, small and

large organisations. Additionally, contemporary management practice requires the modern manager to be creative in a learning context and the ways in which these creative environments are reached through entrepreneurship are explored.

300362.2 Environment and Health

Credit Points 10 **Level** 1

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This unit introduces students to the holistic and socio-ecological nature of human health and its inextricable linkages with the socio-cultural and physical environment, focussing specifically on noise as a significant risk to physical and mental health in the urban environment. Students are challenged to identify the underlying causes of traditional and contemporary environmental health issues and to explore the changing nature of environmental health, its professional practice and associated policy and the changing roles and responsibilities of stakeholders in government, business and industry. Students select from a range of health promotion and community education models in order to design and evaluate community intervention strategies to address selected environmental health issues.

300647.1 Environmental Biotechnology

Credit Points 10 **Level** 3

Assumed Knowledge

Sound knowledge of undergraduate Level 2 microbiology and biochemistry. Microbiology laboratory skills.

Equivalent Units

MI303A - Environmental Biotechnology (V1)

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This unit focuses on microbial processes in the environment and illustrates how these processes may be employed in the control of pollution problems, pests and diseases, and in the recovery of minerals and fuel from the environment, including: microbial interactions in the environment; model ecosystems in the study of microbial environments; the role of biofilms in biofouling; micro-organisms in the removal of contaminants in the environment; microbial control of plant, pests and diseases; microbial systems in mineral and fuel recovery; strain construction in environmental biotechnology; ethics and the release of genetically engineered micro-organisms.

300737.1 Environmental Engineering

Credit Points 10 **Level** 2

Prerequisite

200237.1 Mathematics for Engineers 1 AND **300482.1** Engineering Geology and Concrete Materials

Equivalent Units

85021 - Environmental Engineering

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This unit outlines the essential issues of the environment that a civil and environmental engineer will address as a personal and professional contributor to the development of

Australia. It has a bias towards water-related environmental issues.

300614.1 Environmental Geochemistry

Credit Points 10 **Level** 3

Prerequisite

300224.1 Chemistry 1 AND **300225.1** Chemistry 2

Equivalent Units

14525 - Environmental Geochemistry

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This unit covers composition of ocean, ground and surface waters and their interactions with the atmosphere, rocks, soils, sediments and man-made pollutants; transfer of dissolved material between environments and detection and control of toxic waste materials; environmental quality criteria, field assessment and sampling and modelling of selected environmental systems.

300783.1 Environmental Planning and Climate Change

Credit Points 10 **Level** 2

Equivalent Units

EH324A - Environmental Planning, 300629 - Environmental Planning

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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 and where appropriate, seek to mitigate, climate induced impacts on the environment and on community health and well being. The climate change policy covered in this unit includes sea level rise policy and sustainability policy with particular reference to BASIX and part J of the Building Code of Australia.

300784.1 Environmental Regulation and Policy

Credit Points 10 **Level** 3

Equivalent Units

EH325A - Environmental Regulations, 300630 - Environmental Regulations

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This unit aims to provide students with a broad understanding of the current environmental regulations available to environment protection and planning authorities at the State and Local Government level to protect and manage the natural and built environments. It is a suitable subject for students entering government or industry in environmental management, health and planning roles.

This unit focuses on the environmental management opportunities provided by the Local Government Act, Protection of the Environment Operations Act, and Environmental Planning and Assessment Act with particular emphasis on the use of legislation to manage environmental and population health risks. This unit will focus on the provision of knowledge and skills to enable the identification of offences against the environment, gathering evidence and preparation for legal action. Students will demonstrate competencies with the use of the legislation and will be able to prepare notices and orders requiring action to solve environmental and health risks to the community.

300284.3 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.

300626.1 Epidemiology

Credit Points 10 **Level** 2

Equivalent Units

EH214A - Epidemiology

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Epidemiology is the analytical science concerned with the distribution and determinants of health-related states in populations aimed at the management of health problems. Epidemiology is not limited to the study of epidemics but is a method for measuring and managing physical, mental and social well-being in the living, working and recreational environments. The unit introduces a range of approaches for identifying and understanding risk factors for human health and disease, and guides the student in designing an investigation protocol aimed at assessing a specific health state within the student's own particular field of interest. The unit thus addresses a range of vocational needs relating to health studies while introducing the epidemiological analytical approach to risk assessment and research.

400168.1 Ergonomics and Work Occupations

Credit Points 10 **Level** 3

Equivalent Units

E2044 - Ergonomics 1, E3025 - Ergonomics 2

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In 2013 this unit will be replaced by 400926 - Ergonomics and Work Occupations. The productivity role is a key aspect of adult life for most people. Occupational therapists and other professionals play a major role in assisting clients

who have had their productivity role affected in some way. This unit explores the importance of productivity for adults, in particular those engaged in paid employment. The focus of this unit is the rehabilitation of the injured worker within the context of the OHS legislation and the WorkCover case management system. In addition, this unit will explore vocational counselling and rehabilitation for clients with psychosocial, cognitive and physical disabilities.

400926.1 Ergonomics and Work Occupations

Credit Points 10 **Level** 7

Assumed Knowledge

Human anatomy, functional anatomy.

Special Requirements

Students must be enrolled in courses 4663 - Bachelor of Health Science/Masters of Occupational Therapy and 4664 - Master of Occupational Therapy. To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) possess a current WorkCover Authority approved First Aid Certificate.

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The productivity role is a key aspect of adult life for most people. Occupational therapists play a major role in assisting clients who have had their productivity role affected in some way. This unit explores the importance of productivity for adults, in particular those engaged in paid employment. The focus of this unit is the rehabilitation of the injured worker within the context of the OH&S legislation and the WorkCover case management system. In addition, this unit will explore vocational counselling and rehabilitation for clients with psychosocial, cognitive and physical disabilities.

200468.1 Estimating 1

Credit Points 10 **Level** 2

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To provide an understanding of factors that affect the cost of buildings; introduce costing techniques for new and existing buildings and provide students with the skills necessary to prepare builder's estimates.

300726.1 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.

400249.1 Ethical and Legal Issues in Health Care

Credit Points 10 **Level** 3

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This unit enables students to explore and develop an understanding of the ethical and legal issues important within contemporary health care. Through the use of case studies students will analyse profound ethical and legal challenges facing current health care that are equally important to health professionals, consumers and society generally. Additionally, students studying to work within health care, including as complementary health practitioners will develop a comprehensive understanding of the requirements for ensuring that their practice conforms to legal doctrines and ethical standards.

400893.1 Ethical Issues in Sports and Athletics

Credit Points 10 **Level** 3

Prerequisite

300361.1 Introduction to Human Biology OR **400868.1** Human Anatomy and Physiology 1 AND **400880.1** Fundamentals of Exercise Science AND **400892.1** Physical Activity, Nutrition and Health

Special Requirements

This unit is only available to students enrolled in course 4659 - Bachelor of Health Science (PDHPE).

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This unit examines the growing importance of the study of ethics and sports. Such study not only includes the increasing incidence of the abuse of nutritional and pharmacological ergogenic aids, but also address such local and global socio-economic and cultural issues as inequalities in opportunity for sport participation and excellence, professional athlete challenges to the Olympic movement, age appropriateness of youth talent identification and specialized training, etc.

300746.1 Evidence and Crime Scene Management

Credit Points 10 **Level** 2

Assumed Knowledge

Student must first complete a minimum of 60 CP's in their enrolled course.

Incompatible Units

300374 - Crime Scene Investigation

Special Requirements

Students enrolled in 3589 Bachelor of Science (Forensic Science) are not eligible to take this unit as an elective.

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Evidence and Crime Scene Management is a unit designed to provide students with an understanding and knowledge of critical principles associated with the management of evidence and sites considered as crime scenes. The unit is particularly designed for students wishing to enter professional domains involving; policing, nursing, animal welfare, workplace investigators, health inspectors, OH&S officers, fire investigation, council and park rangers, social welfare, fraud and insurance investigation and others where the collection of evidence is a component of professional practice within the discipline. The unit covers topics such as; recognition of various evidence, the recording and documentation of evidence, crime scene or site photography, managing scenes, CCTV as evidence, maintaining evidence integrity, sexual assault evidence, the reporting and presentation of evidence in court and others.

400755.2 Evidence-Based Nursing 1

Credit Points 10 **Level** 2

Equivalent Units

400057 Nursing Context 4

Special Requirements

Students must be enrolled in a Bachelor of Nursing program.

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This unit explores concepts related to 400755 Evidence Based Nursing, which will further develop student understanding of the significance of scholarship, research and the research processes and how these may inform professional nursing knowledge and practice.

400824.2 Evidence-Based Nursing 1 (Advanced)

Credit Points 10 **Level** 2

Incompatible Units

400055 - Nursing in Context 4, 400755 - Evidence-Based Nursing 1 (EBN1)

Special Requirements

This unit is only available to students enrolled in course 4648 - Bachelor of Nursing (Advanced)

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This unit explores and critically applies the concepts related to Evidence-Based Nursing which will further develop student understanding of the significance of scholarship, research and the research processes and how these may inform professional nursing knowledge and practice. The unit will enable the student to discuss research related topics, applying them to nursing practice.

400765.2 Evidence-Based Nursing 2

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge and content related to 400755 - Evidence Based Nursing 1.

Prerequisite

400755.1 Evidence-Based Nursing 1

Equivalent Units

400060 - Nursing Context 5

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This unit consolidates and assists student's synthesis of the major methodological approaches to support evidence-based practice, the process of research/inquiry and their application in the development of a defensible and justifiable nursing research project.

400827.2 Evidence-Based Nursing 2 (Advanced)

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge and content related to Evidence-Based Nursing 1 (Advanced) (EBN1-Adv).

Prerequisite

400824.1 Evidence-Based Nursing 1 (Advanced)

Incompatible Units

400765 - Evidence-Based Nursing 2 (EBN2) or equivalent unit

Special Requirements

Students must be enrolled in course 4648 - Bachelor of Nursing (Advanced). Students must maintain a GPA of 5.5 or greater.

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This unit consolidates and assists student's synthesis of the major methodological approaches to support evidence-based practice, the process of research/inquiry, and their application in the development of a defensible and justifiable nursing research project.

400865.1 Evidence-Based Practice

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge and skills of Foundations of Research & Evidence-based Practice and Research Methods (Qualitative and Quantitative).

Prerequisite

400864.1 Research Methods (Quantitative and Qualitative)

Equivalent Units

400154 - Integrating Evidence into Practice

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In this unit, students incorporate previous research and biostatistics knowledge to develop new skills for using evidence to inform all aspects of their professional practice. Evidence-based practice uses an enquiry led approach to manage expanding and uncertain knowledge by formulating answerable questions, effectively searching literature, critically appraising evidence validity and results, and to assess its significance in clinical practice and healthcare decision-making.

400944.1 Evidence-Based Practice (Advanced)

Credit Points 10 **Level** 5

Assumed Knowledge

The unit is intended for prospective honours students and will usually require a GPA of 5 (credit average) for enrolment

Prerequisite

400864.1 Research Methods (Quantitative and Qualitative)

Incompatible Units

400865 - Evidence-Based Practice 400154 - Integrating Evidence into Practice 400180 - Occupational Therapy Honours Thesis 1

Special Requirements

Restricted to students eligible to enrol in honours in the nominated courses. The unit is only relevant to honours students in health science and is specifically tailored to accommodate the course and progression requirements of such students. It is not appropriate as a general elective.

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In this unit, students incorporate previous research and biostatistics knowledge to develop new skills for using evidence to inform all aspects of their professional and research practice. Evidence-based practice uses an enquiry led approach to manage expanding and uncertain knowledge by formulating answerable questions, effectively searching literature and critically appraising the validity of evidence to assess its significance in clinical practice and healthcare decision-making. Students will embark on research training through studying the theory and application of research methods to honours research in their chosen field and practising the skills to analyse evidence in the health sciences.

400883.1 Exercise Bioenergetics

Credit Points 10 **Level** 2

Prerequisite

400880.1 Fundamentals of Exercise Science AND

400885.1 Sport and Exercise Physiology

Equivalent Units

400325 - Bioenergetics of Exercise

Special Requirements

This unit is only available to students enrolled in course 4658 - Bachelor of Health Science (Sport and Exercise Science).

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This unit investigates exercise metabolism in an integrated fashion. Covering: energy pathways; metabolic control; metabolism, oxygen consumption and respiratory quotient relationships; metabolic responses to acute and chronic exercise; pathway contributions to exercise; metabolic limitations to exercise; metabolic contributions to fatigue; metabolic acidosis, cellular and systemic implications of metabolic thresholds, conditions that can alter cellular metabolism (eg. altitude, heat stress, anaemia, ischemia, ergogenic aids). Skeletal muscle metabolism is the primary

focus, liver and adipose tissue metabolism are also considered as are anabolic pathways. Students will be exposed to basic biochemical assays of interest to the exercise physiologist.

400902.1 Exercise in Musculo-Skeletal Rehabilitation

Credit Points 10 **Level** 3

Prerequisite

400326.1 Exercise Prescription for General Populations AND **400885.1** Sport and Exercise Physiology

Equivalent Units

400327 - Exercise in Musculoskeletal Injury Rehabilitation

Incompatible Units

400329 - Sports Physiology

Special Requirements

Students must be enrolled in courses 4658 - Bachelor of Health Science (Sport and Exercise Science). To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) possess a current WorkCover Authority approved First Aid Certificate.

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This unit focuses on the role of exercise in the functional rehabilitation of musculoskeletal injuries including work and sporting injuries. It covers injury and re-injury prevention strategies; mechanisms of injury; patho-physiology of injury and repair process; design and evaluation of rehabilitation exercise programs; how the exercise program functions in concert with other methods of injury treatment and management; important pharmacological, communication, psychosocial and cultural considerations; the role of the exercise physiologist in the rehabilitation team; the effects of nervous system disorders and injury on skeletal muscle control, injury and rehabilitation are also considered.

400884.1 Exercise Nutrition, Body Composition and Weight Control

Credit Points 10 **Level** 2

Prerequisite

400880.1 Fundamentals of Exercise Science AND **400881.1** Functional Anatomy

Special Requirements

Students must be enrolled in course 4658 - Bachelor of Health Science (Sport and Exercise Science). To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) provide evidence of compliance with the occupational screening and

immunisation policy of NSW Health 4) possess a current WorkCover Authority approved First Aid Certificate.

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This unit provides students with an understanding of the interdependent areas of nutrition, body composition and body weight control within the context of sport, physical activity, and exercise. Nutritional needs and recommendations for all levels and types of physical activity are covered along with the links between nutrition and health, body composition, control of body weight and composition. Students will develop skills in nutritional analysis, body composition assessment and the development of exercise programmes for weight control. Students will use these skills and knowledge in the individualisation of advice on exercise nutrition and body composition control.

400326.3 Exercise Prescription for General Populations

Credit Points 10 **Level** 2

Prerequisite

400884.1 Exercise Nutrition, Body Composition and Weight Control AND **400882.1** Introduction to Biomechanics AND **400885.1** Sport and Exercise Physiology

Special Requirements

Students must be enrolled in course 4658 - Bachelor of Health Science (Sport and Exercise Science). To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) possess a current WorkCover Authority approved First Aid Certificate.

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The exercise prescription area is designed to give students an understanding of and experience in exercise prescription and fitness program construction for the general population of all ages and both genders, including pre exercise screening and fitness testing. It will focus on the development of general health related fitness programs which improve aerobic and anaerobic fitness, flexibility, muscular strength and endurance, including resistance training. Students will design, implement and evaluate exercise programs with individual clients.

300638.1 Experimental Foods

Credit Points 10 **Level** 3

Equivalent Units

FS321A - Experimental Foods

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This unit aims to extend students' knowledge of food preparation, basic food science and principles, the interaction of ingredients with one another and the added effects of physical procedures on the end product. Students develop advanced scientific methodologies to give reproducibility. This is a recommended unit for those

intending to advance in the areas of recipe development and new product development.

200589.1 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

200591.1 Introduction to International Business

Equivalent Units

61126 - International Business Project 2

Internationalisation has become a strategic necessity for many firms wishing to survive and grow in today's increasingly competitive domestic economy. Globalisation in its many forms is a powerful driver of change. 'Export Strategy & Applications' will give students the practical skills needed to manage the day to day international trading activities of any company. This unit examines how and why exporting firms select and plan their entry into foreign markets, the management of intermediaries in the distribution channel, ways of promoting goods and services overseas, and the methods of trade finance, insurance and logistics that companies use on a daily basis as they pursue success internationally. This unit provides students with those essential skills sought by any employer company operating in international markets.

300507.1 Extended Computing Project 1

Credit Points 20 **Level** 3

Incompatible Units

300097 - Computing Project 1

Special Requirements

All students must have completed 160 credit points, including an Analysis and Design unit, a Programming unit and a Database unit. Students must have passed two units from the following: 300104 Database Design and Development or 300131 Introduction to Analysis and Design or 300404 Formal Software Engineering. Plus one unit from the following: 300156 Programming Principles 2 or 300167 Systems Programming 1.

This unit is the culmination and application of knowledge a student will have gained as part of their studies to date. The projects are undertaken within a team environment and are to provide solutions for real computing problems sourced from main ICT vendors, governmental departments and other relevant businesses. The problems will apply to a wide range of fields including but not limited to: computer science, computer forensics, e-Business, information systems, games and editors, e-Health, e-Government and e-Voting, biomedical applications, e-Learning and PDA, mobile and wireless technologies, latest technologies and service-oriented architectures (SOA). The group will follow

established software engineering methodology in all stages of the design and implementation of project, including elements of project management, version control and required documentation. The focus of the unit is the delivery of a software product of a marketable quality, including complete technical documentation and user manuals.

300508.1 Extended Computing Project 2

Credit Points 20 **Level** 3

Prerequisite

300507.1 Extended Computing Project 1

Incompatible Units

300098 - Computing Project 2

Extended Computing Project 2 builds on the experience gained in Extended Computing Project 1 (ECP1), which is its prerequisite unit. As in ECP1, the projects are undertaken within a team environment. This unit will maintain the range and scope of ECP1, but it will allow the students to further refine the projects undertaken as well as add to them the elements of research and innovation. Note: For those degrees where 300098 Computing Project 2 is a core unit, students will be able to complete the new extended unit as an alternative. Both units will be mutually exclusive, i.e. do not count for credit with one another.

300415.1 Fabrication of Nanostructured Devices

Credit Points 10 **Level** 3

Assumed Knowledge

Chemistry 1 and Chemistry 2. Biology 1 and Nanotechnology 2. Applied Instrumentation in Nanotechnology. Organic Chemistry 2

This unit deals with methods of synthesising and assembling nanostructures (eg rotaxanes and catenanes) and spectroscopic techniques used to characterise their composition and structure. The students will learn about the functional groups and their applications such as wiring molecular components to a frame. These molecules will act as moving components in nanomachines, molecular switches, prodders, chemical rotors, paddles, gears, molecular brakes and molecular shuttles. The movements are controlled and driven by pH of the medium, introduction of metal ions, light and electron potential. Case studies on evolution of nanodevices from concept to commercialisation will also be pursued in this unit.

400760.2 Family Health Care: Child and Adolescent Nursing

Credit Points 10 **Level** 2

Incompatible Units

400408 - Child and Family Health, 400643 - Child and Family Health Practice

Special Requirements

Students must be enrolled in the Bachelor of Nursing or the Bachelor of Early Childhood Studies (Child and Family).

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This unit explores physical, social, political and community issues which impact on the health of children, adolescents and families. The knowledge gained will be appropriate for working with children and families within a hospital or community setting. The promotion of health and prevention of illness underpins this unit.

400763.2 Family Health Care: Chronicity and Palliative Care Nursing

Credit Points 10 **Level** 3

Assumed Knowledge

Completion of all Year 1 and Year 2 Nursing units

Prerequisite

400753.1 Medical-Surgical Nursing 1 AND **400757.1** Medical-Surgical Nursing 2

Equivalent Units

400065 - Nursing Therapeutics 10

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This unit engages students in the assessment, planning, implementation and evaluation of professional nursing care for those individuals and their families living with a chronic illness and those dying from a life threatening illness.

400756.2 Family Health Care: Health Issues and Australian Indigenous People

Credit Points 10 **Level** 2

Special Requirements

Students must be enrolled in the Bachelor of Nursing or the Bachelor of Nursing (Graduate Entry).

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This unit provides the student with opportunities to investigate and discuss health issues as they relate to Aboriginal and Torres Strait Islander Peoples.

400761.2 Family Health Care: High Acuity Nursing

Credit Points 10 **Level** 3

Assumed Knowledge

Completion of all Year One and Year Two Nursing units.

Prerequisite

400753.1 Medical-Surgical Nursing 1 AND **400757.1** Medical-Surgical Nursing 2

Equivalent Units

400062 - Nursing Therapeutics 9

Special Requirements

Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1

June 2010 3)Adult Health Immunisation 4) Workcover accredited Senior First Aid Certificate

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This unit will elaborate and consolidate mechanisms of health breakdown and complex nursing concepts and professional nursing practices that promote, maintain and support health and wellness. The focus is on providing professional nursing care of people who are experiencing acute, profound physiological, psychosocial and spiritual health breakdown.

400767.2 Family Health Care: Older Adult Nursing

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge and skill gained in Years 1 and 2 of a nursing degree.

Prerequisite

400753.1 Medical-Surgical Nursing 1 AND **400757.1** Medical-Surgical Nursing 2

Equivalent Units

400644 - Gerontic Practice

Special Requirements

Special Requirements are those stipulated by NSW Health and UWS. At present these include: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3)Adult Health Immunisation 4) Workcover accredited Senior First Aid Certificate

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The health and wellbeing of older people reflect their genetic inheritance, the environment, lifestyle choices and a complex set of developmental experiences upon which individuals, groups and socio-political influences have impinged. Nevertheless, being or becoming 'old' is only one part of a person's life experience. Thus, in order to understand 'being old', we need to have knowledge of such influences and experiences. By promoting the health and therefore the potential of people, nurses have the opportunity to be in the forefront of health care. This opportunity places nurses in a position to intervene therapeutically in the lives and upon the lifestyles of older people by working with individuals and groups to facilitate healthy aging and by promoting positive attitudes towards aging and older people.

400855.1 Family Health Care:Chronicity and Palliative Care Nursing (Advanced)

Credit Points 10 **Level** 3

Assumed Knowledge

Completion of all Year 1 and Year 2 Nursing units. Completion of all Year 2 Bachelor of Nursing (Advanced) units.

Prerequisite

400753.1 Medical-Surgical Nursing 1 AND **400825.1** Medical Nursing 2 (Advanced)

Incompatible Units

400763 - Family Health Care: Chronicity and Palliative Care Nursing

Special Requirements

Restrictions on clinical practicum placements students must be enrolled in the Bachelor of Nursing (Advanced) and meet special requirements for safety and professional issues when dealing with the public. Special Requirements are those stipulated by NSW Health and UWS. At present these include: Prohibited Employment Declaration (PED), Criminal Record Check (CRC), Adult Health Immunisation and Workcover accredited Senior First Aid Certificate.

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This unit engages students in advanced assessment, planning, implementation and evaluation of professional nursing care for those individuals and their families living with a chronic illness and those dying from a life threatening illness. The unit will enable the student to collaboratively work with medical students to apply nursing skills and critical thinking skills to the challenges of patients with chronic and life threatening illnesses. The unit will enable the student to undertake an advanced health assessment , apply critical thinking skills in nursing practice and to understand the impact of chronic and life threatening illness on the nurse, client and their family.

400854.2 Family Health Care:Health Issues and Australian Indigenous People (Advanced)

Credit Points 10 **Level** 2

Incompatible Units

400756 - Family Health Care: Health Issues and Australian Indigenous People

Special Requirements

Restrictions on clinical practicum placements students must be enrolled in the Bachelor of Nursing (Advanced) and meet special requirements for safety and professional issues when dealing with the public. Special Requirements are those stipulated by the NSW Health and UWS. At present these include: • Prohibited Persons Employment Declaration (PPED) • Criminal Record Check (CRC) • Adult Health Immunisation • Workcover accredited Senior First Aid Certificate

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This unit version replaces version 1 from 2010. This unit provides the student with opportunities to investigate and discuss health issues as they relate to Aboriginal and Torres Strait Islander Peoples. Further, this unit will enable the student to understand the role of the nurse in health promotion programs for Indigenous and/or Torres Strait Island people.

300659.1 Field Project 1

Credit Points 10 **Level** 3

Assumed Knowledge

Progression requirements met for Bachelor of Natural Science undergraduate Level 1 and Level 2 units.

Equivalent Units

AG301A - Agricultural Systems Project, 300420 - Animal Systems Project, 300286 - Environmental Practice 1

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This unit requires students to initiate a major project with clients from industry, research organizations or public utilities associated with the professional practice domains of the natural sciences. The project work includes a number of activities (eg developing project proposal and methodology etc) negotiated with the client and will draw together all of the previous learning in the B. Nat Sci./BSc. The project will entail interdependent relationships with the client, staff supervisor and other resource people and will involve the full range of project management skills. Students will be required to demonstrate their capacity to implement the project by production of a literature review and detailed project proposal. This subject prepares students for 300660 Field Project 2 which focuses on students putting their knowledge into action in a professional setting.

300660.1 Field Project 2

Credit Points 10 **Level** 3

Assumed Knowledge

Progression requirements met for Bachelor of Natural Science undergraduate level 1 and level 2 units.

Prerequisite

300659.1 Field Project 1

Equivalent Units

AG301A - Agricultural Systems Project, 300420 - Animal Systems Project, 300286 - Environmental Practice 1

.....

This unit requires students to undertake a major project with clients from industry, research organizations or public utilities associated with the professional practice domains of the natural sciences. The project work includes a number of activities developed in 300659 Field Project 1. The project will entail interdependent relationships with the client, staff supervisor and other resource people and will involve the full range of project management skills. Students will be required to demonstrate their capacity to implement the project by production of a major report and seminar. The unit places a heavy emphasis on continued development of professional competency in preparation for students to enter the workforce.

200111.1 Financial Accounting Applications

Credit Points 10 **Level** 1

Prerequisite

200101.1 Accounting Information for Managers OR **200103.1** Accounting Reports and Decisions

Equivalent Units

AC105A - Finance and Accounting, AC103A - Introductory Financial Accounting, H2818 - Financial and Management Accounting II, 61111 - Introductory Financial Accounting

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This unit gives students the practical skills necessary to analyse the accounting transactions of an entity and then be able to measure and record these transactions in a systematic manner for the preparation of accounting reports to external users.

200059.1 Financial Economics

Credit Points 10 **Level** 3

Assumed Knowledge

200052 - Introduction to Economic Methods (or equivalent).

Prerequisite

200046.1 Microeconomics AND **200488.1** Corporate Financial Management

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This unit provides students with a unifying theoretical perspective on the most important concepts in the field of finance. The presentation is rigorous and students develop their ability to critically evaluate the principal theoretical results in the finance literature.

200048.1 Financial Institutions and Markets

Credit Points 10 **Level** 1

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The investment, financing and risk management decisions that all firms make are implemented by creating and trading financial instruments in financial markets, often with the involvement of a variety of institutions. Using the Australian financial system as an illustration, this unit introduces students to the theory and functions of financial intermediaries and the operation of financial systems. Students also develop an understanding of the role and functions of markets in equities, debt, foreign exchange, options and futures, and theories of interest rate determination and the term structure of interest rates.

300762.1 Fluid Mechanics

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

300740 -Water 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.

300785.1 Food Analysis and Quality Assurance

Credit Points 10 **Level** 3

Prerequisite

300499.1 Food Science 2

Incompatible Units

300636 - Food Processing and Analysis, 300701 - Food Quality Assurance

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This unit introduces students to the standard methods of analysis of foods as used for nutritional analysis and quality assessment of foods. Practicals will include determination of major and minor food components; functionality tests and sensory analysis of foods. The data obtained in the laboratory will be compared to published data and students will gain an appreciation of the limitations of data collection. Students will learn how to construct nutrition information panels for food labels and develop a working knowledge of food labelling legislation. The unit integrates previous studies in food science and food safety to develop an understanding of food quality assurance, good manufacturing practices and quality management systems as they are applied to the control and quality management of food. Food laws, regulations and codes at State, National and International levels are covered. The students will develop a working knowledge of the implementation of food safety quality management systems such as ISO22000.

300637.1 Food Product Development Practicum

Credit Points 10 **Level** 3

Assumed Knowledge

Skills and knowledge gained from previous units of study in Food Science and Nutrition and Food program such as Experimental Foods, Culinary Studies, Food Science 1 and 2.

Equivalent Units

FS304A - Food Product Development Practicum 3.1

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This unit aims to allow students to work in a product development team as in industry. The entire process of product development includes: idea generation; collating market, technical and consumer information; consumer surveying to establishing need/desire for a new product; development processing, testing and evaluation, packaging; promotion and marketing. Students will develop a specialised knowledge of the total product development system with ability to design, conduct and analyse consumer surveys; develop product formulations and recipes with evaluation of sensory properties, nutritional composition and other functional attributes; design, organise and analyse sensory/acceptance/ performance during the development of the product.

300639.1 Food Safety

Credit Points 10 **Level** 3

Assumed Knowledge

Students are expected to have some basic knowledge of microbiology and chemistry.

Equivalent Units

FS323A - Food Safety A

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Food safety is rapidly evolving with the emergence of new food-borne diseases, changing patterns of disease, evolving approaches to risk analysis (based upon a solid scientific foundation and international harmonisation) and an emerging requirement that food producers, processors, handlers and consumers take shared responsibility for the safety of food within their care. The overall purpose of this unit is to equip students with the necessary skills to identify, evaluate and control food-borne hazards, and to enable those completing the unit to better protect the safety and quality of the food supply. This can be achieved by employing knowledge of regulatory requirements; food contamination; food spoilage agents and hazards; principles of good hygienic practice and preservation in food production, preparation and distribution; and other key elements of food safety.

300498.1 Food Science 1

Credit Points 10 **Level** 1

Assumed Knowledge

Basic Knowledge of chemistry and biology.

Equivalent Units

FS108A - Food Science & Technology Practicum 1.1

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Food provides the sustenance of life and plays many key roles, including nutrition for good health, enjoyment and cultural identity. This unit introduces the basic principles for the understanding of food. Students will gain an awareness of the history and cultural significance of food and its traditions in Australia and around the world. Students will be introduced to the science behind food, including composition, physical and functional characteristics. Fruits and vegetables, cereal, meat and dairy products will be covered, exploring their sources, processing and impacts on food quality and nutrition. The connections between diet and health will be explored; including obesity and other food health related issues. Activities include small scale processing and testing of fruit, cereal and dairy products, local site visits and seminars.

300499.1 Food Science 2

Credit Points 10 **Level** 1

Assumed Knowledge

Basic knowledge of chemistry and biology; understanding of food composition.

Equivalent Units

FS109A - Food Science & Technology Practicum 1.2

This unit introduces students to the scientific principles of food preservation and the factors affecting food quality with respect to microbial, chemical and physical changes in food. The application of heat treatments, freezing and chilling, concentration and dehydration, fermentation, cook-chill, preserves and pickling will be explored, to determine the effects of food processing conditions on safety, nutritional value and sensory quality of food. The basic principles and application of good manufacturing practises, sanitation and Hazard Analysis Critical Control Point (HACCP) for control of food safety will be also be studied, with the aim of understanding the concepts needed for the design of safe food processes. Activities include small scale processing of meat, vegetable and fruit products, and HACCP analysis of a food process.

300377.1 Forensic Analysis of Physical Evidence

Credit Points 10 **Level** 2

Assumed Knowledge

Successful completion of at least one first year undergraduate chemistry unit.

Special Requirements

Students must be enrolled in 3589 Bachelor of Science (Forensic Science).

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'Physical Evidence' is tangible evidence left at crime scenes and/or found on suspects, which is in some way related to a criminal incident and links or eliminates suspects to these activities. Examples of physical evidence include; glass fragments, hairs and fibres, paint chips, fingerprints, footwear impressions (footprints), biological material (blood, semen etc), narcotics, toolmarks, tape comparison, explosive residue, GSR (gun shot residue) and others. This unit explores the processes required for the analysis of physical evidence and combines analytical and physical comparative examination methodologies. Students will use these methods to examine; the chemical composition of trace evidence and identify unique physico-chemical markers, the detection of chemical residues and biological material, physical comparison of suspect and exemplar items such as footwear impressions and toolmarks left at the crime scene, and the comparison of paint chips, glass fragments, hairs and fibres. Students will explore these methodologies using practical case studies and will be required to present their evidence/findings at the completion of the unit.

300493.1 Forensic and Environmental Analysis

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of general chemistry equivalent to satisfactory completion of Chemistry 1 and Chemistry 2.

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This unit extends the student's knowledge and understanding of analytical instrumentation that is relevant to forensic investigations and analysis in the environmental and food sciences. It will provide an understanding of the chemical and physical principles underlying the utilisation of

instrumentation in chemical analysis. Topics include principles of spectroscopic techniques separation methods; sample collection and storage; presumptive testing; an extended range of modern chemical instrumentation including gas and liquid chromatography; atomic spectroscopy; mass spectroscopy; x-ray methods and spectroscopic methods.

300378.1 Forensic Archaeology

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge of general aspects of recording and crime scene documentation, 300375 Digital Forensic Photography 1, 300374 Crime Scene Analysis and 300377 Forensic Analysis of Physical Evidence.

Special Requirements

Students must be enrolled in 3589 Bachelor of Science (Forensic Science).

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This unit provides an understanding of the processes of locating, recovering and undertaking scientific examination of material remains as part of a forensic investigation. The unit will place particular emphasis on the decay processes affecting such material recovered from buried environments and the importance of scientific excavation and recovery in any investigative study undertaken on the material. Students will investigate a number of case studies of the successful use of forensic archaeology, as well as learning the dangers that can befall an investigation that does not take sufficient account of diagenetic changes affecting material remains once buried.

300494.1 Forensic Chemistry

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge of general and analytical chemistry equivalent to satisfactory completion of Chemistry 1, Chemistry 2 and a second year analytical chemistry unit.

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This unit extends the student's knowledge and understanding of chemical topics that are relevant to forensic investigations and provides a deeper understanding of the underlying chemical and physical principles. Topics are taught in the context of the correct principles and procedures for collecting and conserving evidence and the safe handling of chemical substances. Topics include an extended range of modern chemical instrumentation; the chemistry and analysis of various classes of drugs; clandestine drug laboratories; fire, arson and accelerants; explosions and explosives; chemical and biological warfare agents.

300654.1 Forensic Science

Credit Points 10 **Level** 1

Assumed Knowledge

Basic academic skills, including the ability to write essays in English at a level appropriate to a first-year undergraduate student.

Equivalent Units

SC103A - Forensic Science

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This unit aims to give students a basic understanding of scientific methodology as it applies to the collection, analysis and interpretation of forensic evidence. Students are introduced to a range of analytical methods that are used with various types of forensic evidence, and these are discussed in relation to case studies. The role of human factors is discussed, together with the importance of critically evaluating forensic evidence and the means by which it was obtained.

300121.1 Formal Languages and Automata

Credit Points 10 **Level** 3

Prerequisite

200025.1 Discrete Mathematics

Equivalent Units

14948 - Formal Languages and Automata, 14909 - Formal Languages and Automata

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Three abstract models of computation are studied in this unit. The first is the finite automaton, together with regular languages and regular expressions. The second is the pushdown automaton, together with the associated languages and grammars. The third is the Turing machine. This allows study of the power of computers in general and their limitations, in particular situations: it is shown that there are problems for which there is no algorithmic solution. This unit explores the application of formal languages in the design of compilers and text processors.

300404.1 Formal Software Engineering

Credit Points 10 **Level** 3

Prerequisite

200025.1 Discrete Mathematics AND **300103.1** Data Structures and Algorithms

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This unit is concerned with the design, development and post-delivery maintenance of software systems. The unit pays special attention to requirements engineering, formal specification techniques and design methodologies. The B-method is used to produce consistent, re-usable specifications and develop code that is both efficient and correct.

300485.1 Foundation Engineering

Credit Points 10 **Level** 3

Prerequisite

85012.1 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.

400861.1 Foundations of Medicine 1

Credit Points 80 **Level** 1

Assumed Knowledge

Year 12 Chemistry.

Special Requirements

Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate; 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010; 3) signed a declaration that they understand and comply with: - Infectious Diseases Policy - Health Records and Information Privacy Act (HRIPA), 2002 - UWS' submitting their details to the NSW Medical Board; 4) successfully completed a WorkCover accredited Senior First Aid Certificate and have an up to date Adult Vaccination Record.

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Students must be enrolled in 4641 Bachelor of Medicine, Bachelor of Surgery. The major objectives are to gain an integrated understanding of the structure and function of the human body. This will be addressed at the levels of organ systems, tissues, cells and molecules. The scientific basis of the following topics will be discussed: whole body organisation including basic anatomy, roles of the major organ systems, functional organisation of cells and their specific organelles, characteristics of specialised cells, structure-function characteristics of major biological molecules including carbohydrates, lipids, proteins, enzymes and DNA, the biochemical basis of complex processes such as homeostasis, reproduction and inheritance, growth and development, defence against infectious agents, pathological changes, ageing and death. The course then examines nutrition and metabolism before exploring the structure, function and pathology of the gastrointestinal system (including liver), cardiovascular system and respiratory system. The students will also explore the complexity of medical practice and areas from doctor/patient interaction to an examination of the health care system. A particular focus will be the communities that make up Greater Western Sydney. Topics covered include: communication skills, patient history and examination, ethics, psychosocial aspects of medicine, impacts of gender, culture and deprivation on health and medical care, professionalism, population health and evidence based medicine.

400862.1 Foundations of Medicine 2

Credit Points 80 **Level** 2

Prerequisite

400861.1 Foundations of Medicine 1

Equivalent Units

400739 - Scientific Basis of Medicine 2, 400740 - Health Practice 2

Special Requirements

Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 OR a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate; 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 OR a Working with Children Check Student Declaration after 1 June 2010; 3) signed a declaration that they understand and comply with: - Infectious Diseases Policy - Health Records and Information Privacy Act (HRIPA), 2002 - UWS' submitting their details to the NSW Medical Board; 4) successfully completed a WorkCover accredited Senior First Aid Certificate and have an up to date Adult Vaccination Record.

.....

Students must be enrolled in 4641 Bachelor of Medicine, Bachelor of Surgery. The major objectives are to gain an integrated understanding of the structure and function of the human body. This will be addressed at the levels of organ systems, tissues, cells and molecules. The scientific basis of the following topics will be discussed: renal system, musculoskeletal system, neuroscience, reproduction and development, endocrinology, infectious disease and cancer. The students will continue their exploration of the complexity of medical practice and areas from doctor/patient interaction to an examination of the health care system. A particular focus will be the communities that make up Greater Western Sydney. Topics covered include: communication skills, patient history and examination, ethics, psychosocial aspects of medicine, impacts of gender, culture and deprivation on health and medical care, professionalism, population health and evidence based medicine.

400863.1 Foundations of Research and Evidence-Based Practice

Credit Points 10 **Level** 1

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This unit will consider the reasons and roles of evidence-based practice and research, and introduce students to their language and core concepts. Skills will be developed for asking clinical or professional healthcare questions and to translate these into search strategies for finding evidence. To make sense of that evidence, students will be introduced to quantitative and qualitative research methods, types of data, how data is described and how biostatistics is used to provide meaning to research data.

700064.1 Foundations of Research and Evidence-Based Practice (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

400863 - Foundations of Research and Evidence-Based Practice

Special Requirements

This unit is only available to UWS College students.

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This unit will consider the reasons and roles of evidence-based practice and research, and introduce students to

their language and core concepts. Skills will be developed for asking clinical or professional healthcare questions and to translate these into search strategies for finding evidence. To make sense of that evidence, students will be introduced to quantitative and qualitative research methods, types of data, how data is described and how biostatistics is used to provide meaning to research data.

300606.1 Foundations of Statistical Modelling and Decision Making

Credit Points 10 **Level** 2

Assumed Knowledge

200192 - Statistics for Science, or 200032 - Statistics for Business or 200263 - Biometry

Equivalent Units

J2781 - Statistical Theory, 200034 - Statistical Theory

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This Level 2 unit completes an introduction to the basic principles and concepts of statistics. There are two strands to the subject: distribution theory and statistical inference. The aim of the unit is to present a solid foundation in statistical theory and to provide an understanding of the relevance and importance of the theory in solving practical problems in the real world. The theoretical basis of the dual arms of classical statistical inference (estimation and hypothesis testing) is discussed relating the probabilistic half of the course to the final objective - inference.

400962.1 Foundations of Wellbeing

Credit Points 10 **Level** 1

Equivalent Units

100663 - Foundations of Wellbeing

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Whereas health is commonly understood in terms of objective signs and symptoms (or their absence), wellbeing emphasizes subjective experience in the context of social and environmental factors that may support or impede a personal sense of wellbeing. This unit approaches wellbeing through a self-investigatory and reflective model that seeks to integrate systemic analysis of the individual, social, emotional, environmental and spiritual aspects of health and wellbeing in a personally meaningful way. Consideration of how issues of social justice and equity have differential impacts on both individuals and communities, and develop frameworks for taking personal and social action to enhance wellbeing.

400734.1 Functional Analysis

Credit Points 10 **Level** 2

Special Requirements

This is a specialist professional unit for occupational therapy practice so is not suited to students from other programs. Enrolment is restricted to students enrolled in 4520 - Bachelor of Applied Science (Occupational Therapy) and 4521 - Bachelor of Applied Science (Honours) Occupational Therapy.

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In 2011 this unit is being replaced by 400908 - People, Environment and Occupations. The ability to analyse human movement and occupations is essential for occupational therapy practice. In this unit, students will be introduced to the principles of biomechanics and kinesiology necessary for the understanding and analysis of human movement, functional activities and occupations. Students will demonstrate the ability to set goals, describe appropriate interventions and outcome measures to use with clients.

400881.1 Functional Anatomy

Credit Points 10 **Level** 1

Prerequisite

400868.1 Human Anatomy and Physiology 1

Equivalent Units

400134 - Human Medical Sciences 3

Incompatible Units

300319 - Introduction to Human Anatomy and Histology, 300320 - Introduction to Human Physiology, 400256 - Human Medical Sciences 2

Special Requirements

This unit is only available to students enrolled in courses 4658 - Bachelor of Health Science (Sport and Exercise Science), 4661 - Bachelor of Health Science/Master of Podiatric Medicine, 4662 - Bachelor of Health Science/Master of Physiotherapy, 4663 - Bachelor of Health Science/Master of Occupational Therapy, 4666 - Bachelor of Health Science (Honours)/Master of Podiatric Medicine, 4668 - Bachelor of Health Science (Honours)/Master of Physiotherapy.

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This unit covers in depth the functional anatomy of the musculoskeletal system. Special attention is given to the relationship between form and function, the terminology used to describe human movement and thorough knowledge of the bony landmarks, joints, muscle attachments, innervation, blood supply along with detailed actions of specific muscles and muscle groups. Emphasis is on a practical functional context with the relevance to clinical applications such as surface and imaging anatomy, and the anatomical basis of common injuries. Learning experience intends to stimulate proactive deep approach in learning anatomy motivated by the outcomes driven from specialist work within the Health professions.

400880.1 Fundamentals of Exercise Science

Credit Points 10 **Level** 1

Equivalent Units

400802 - Professional Practice of Sport Exercise Science

Special Requirements

Students must be enrolled in course 4658 - Bachelor of Health Science (Sport and Exercise Science) or 4659 - Bachelor of Health Science (Personal Development, Health and Physical Education).

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This unit is designed to provide fundamental basic science and sport and exercise science content, with the intent to prepare the students for the more advanced scientific applications to the study and research of the sport and exercise sciences. Students will be exposed to computer software applications to aid data processing used in the sport and exercise sciences, with special applications to fields such as biomechanics, exercise physiology, motor learning, skill acquisition and sport psychology. In addition, students will be exposed at the introductory level to principles of cycle ergometry, treadmill exercise, and resistance training.

700073.1 Fundamentals of Exercise Science (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

400880 - Fundamentals of Exercise Science

Special Requirements

Students must be enrolled in the UWS College Diploma of Health Science (PDHPE stream) unless specific permission has been granted by the School of Biomedical and Health Sciences.

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This unit is designed to provide fundamental basic science and sport and exercise science content, with the intent to prepare the students for the more advanced scientific applications to the study and research of the sport and exercise sciences. Students will be exposed to computer software applications to aid data processing used in the sport and exercise sciences, with special applications to fields such as biomechanics, exercise physiology, motor learning, skill acquisition and sport psychology. In addition, students will be exposed at the introductory level to principles of cycle ergometry, treadmill exercise, and resistance training.

200191.3 Fundamentals of Mathematics

Credit Points 10 **Level** 1

Incompatible Units

200195 - Mathematical Methods A; 200196 - Mathematical Methods B; 14505 Engineering Mathematics 1; 200031 - Mathematics for Business; 200237 - Mathematics for Engineers 1; 200189 - Concepts of Mathematics; 300672 - Mathematics 1A; Mathematics 1B

Special Requirements

Permission required for students enrolled in course code 3562 Bachelor of Science (Advanced).

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This unit is designed to assist in the transition from secondary school mathematics to university first year level mathematics, and gradually bring students to the required standard. It provides a sound foundation in basic mathematical tools in the areas of algebra, trigonometry, probability and calculus, which are particularly relevant to first year mathematics and statistics core subjects. The algebra section revises basic arithmetic manipulation before introducing functions, polynomial, logarithmic and exponential functions, solving equations, matrix

manipulation and applications. The probability section covers basic concepts of probability, including permutations, combinations and probability calculations. The trigonometry section introduces the concept of angles, trigonometric functions and their fundamental identities. The calculus section includes limits, differentiation, maximum and minimum values, graphing and integration. These mathematical methods and simple concepts are illustrated using practical examples derived from many different subject areas. Students entering without assumed knowledge of HSC Mathematics are advised to take this unit as an elective.

300463.1 Fundamentals of Mechanics

Credit Points 10 **Level** 1

Equivalent Units

300063 - Statics and Materials

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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.

700023.1 Fundamentals of Mechanics (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300463 - Fundamentals of Mechanics.

Special Requirements

Students must be enrolled at UWS College.

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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.

300491.1 Games Technology

Credit Points 10 **Level** 2

Assumed Knowledge

A basic understanding of the principles of programming equivalent to Programming Principles 1.

Incompatible Units

300162 - Client Server Applications

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This unit provides an introduction to the game industry as well as introducing students to the techniques of game design and construction. Students will be exposed to the history of game development and the key aspects of different genres of computer games.

300492.1 Games Theory and Design

Credit Points 10 Level 3

Assumed Knowledge

Understanding of programming concepts and details of programming in C++, knowledge of systems analysis methods including object orientated analysis and design.

Prerequisite

300491.1 Games Technology

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This unit provides students with an in-depth understanding of the development and structure of games engines. It provides students with a unifying overview of the many modules that are incorporated in a games engines well as a detailed examination of game-play and engine programming.

300331.2 General Microbiology

Credit Points 10 Level 2

Assumed Knowledge

A knowledge of introductory biology, especially an understanding of the diversity of living organisms and basic concepts of cell structure and function is essential for students undertaking this unit. The unit assumes that students are familiar with basic biological laboratory techniques such as use of the light microscope. This is taught in Biology 1.

Prerequisite

300221.1 Biology 1 OR **300222.1** Biology 2 OR **300543.1** Cell Biology OR **BI107A.1** Biological Sciences 1.1 (X) OR **300539.1** Biodiversity

Corequisite

BI107A.1 Biological Sciences 1.1 (X)

Incompatible Units

300300 - Microbiology 1, MI104A - Microbiology 1.1

Special Requirements

Only students in courses 3569 - Bachelor of Applied Science (Environmental Health) and 405A - Bachelor of Applied Science (Environmental Health) may use BI107A - Biological Sciences 1.1 (X) as a co-requisite.

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This is a unit in general microbiology designed for students in Applied Science and Natural Science degrees. It builds on students' existing knowledge of cell biology and biodiversity, and provides an overview of the nature of micro-organisms and their significance. The unit emphasises the role of micro-organisms in environments such as water, soil, animals and plants, as well as in foods, industry and waste treatment. The unit focuses on the applications of microbiological concepts in these applied areas.

300623.2 Genetics

Credit Points 10 Level 2

Prerequisite

300793.1 Biology B - Cellular Processes OR **300221.1** Biology 1

Equivalent Units

BI201A.1 - Genetics 2.2

Incompatible Units

300547 - Human Genetics

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The scientific study of heredity is called genetics. Genetics impacts on all aspects of life, including forensic science, agriculture, medicine, law, pharmaceuticals biotechnology, plant and animal breeding, behaviour, biodiversity and even climate change. This unit is designed to introduce the student to a wide range of genetic concepts from Mendel to DNA and genes, from chromosome behaviour to karyotype analysis and from population and quantitative genetics to animal behaviour. The student will investigate the nature and organisation of heredity; the various levels and mechanisms of expression of inheritance, the basis of variation within populations; and the genetic basis of biological evolution.

300612.1 Geochemical Systems

Credit Points 10 Level 2

Prerequisite

300224.1 Chemistry 1 AND **300225.1** Chemistry 2

Equivalent Units

14510 - Geochemical Systems

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This unit covers selected topics taken from the following: limits of chemical conditions in the natural environment (redox, pH, concentrations); mobilisation and transport of selected elements in primary and secondary environments – aqueous and supercritical fluids, gases; complexing and ion-pairing phenomena; metal ions buffers in geochemical cycles – adsorption, co-precipitation, mineral formation; dispersion of elements in the weathering environment; geochemical cycling of the elements; biogeochemistry.

200667.1 Global Enterprise Resource Planning

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

200476 - Materials Management And Distribution (ERP), 200552 - Global Materials Management and Distribution (ERP)

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Global Enterprise Resource Planning (ERP) provides students with the knowledge and skills required in

understanding broader concepts of managing within ERP system environments. Students are introduced to data, organisational structure, logistics and supply chain related processes and the role of enablers in understanding global logistics operations. Global ERP equips the students with basic decision-making tools, techniques and concepts. It also illustrates how technology can be utilised to better manage logistics across global supply chain with emphasis on the effective use of data and information, coordination and integration of cross functional activities and processes towards achieving best practice performance levels.

300786.1 Global Nutrition Food and Community

Credit Points 10 **Level** 3

Assumed Knowledge

Basic Human nutrition

Equivalent Units

300651 - Nutrition and Community Health

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This unit aims to develop an understanding of the inter relationship between nutrition and health in Australian and Global contexts. The aim is to provide the student with a sound foundation in nutritional anthropology, public health nutrition and health promotion in order that they can systematically analyse nutritional problems associated with world food issues; including those affecting minority and culturally and linguistically diverse groups within Australia; diseases of affluence and current health and nutrition issues in the community. An important objective of the unit is that students learn the principles of health promotion and how to apply effective nutrition promotion strategies in community and population settings in order to reduce the burdens of various nutritional and lifestyle related disorders and diseases like: obesity, some cancers, diabetes and cardiovascular disease and malnourishment.

200588.1 Global Operations and Logistics Management

Credit Points 10 **Level** 3

Assumed Knowledge

Students are expected to have gained an introductory level of knowledge in operations and supply chain management.

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Global Operations and Logistics Management is an expansive unit designed for students interested in the organisational processes undertaken in providing products and services to customers. A range of tactical and strategic considerations are investigated to help students understand the role of global operations and logistics within an organisational context. The unit covers internal activities of manufacturing and service organisations. A range of quantitative tools and techniques that support managerial decision making involving trade-offs, priorities and choices are introduced. While the latest trends in logistics and operations management are also reviewed.

200677.2 Global Supply Chain Management

Credit Points 10 **Level** 1

Equivalent Units

200555 - Global Warehousing and Transport Management,
200642 - Global Logistics and Supply Chain Management,
200477 - Warehousing and Transport Management

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This contemporary unit focuses on the importance of supply chain management in the success and profitability of organisations. Supply chain management is defined theoretically and practically, with critical issues in designing a global supply chain network discussed. Several case studies enabling students to understand issues within supply chain management are discussed throughout, covering areas such as collaboration, transport, warehousing and the various relationships within the supply chain.

200541.1 Globalisation and Trade

Credit Points 10 **Level** 2

Assumed Knowledge

200525 - Principles of Economics

Equivalent Units

200071 - International Trade Theory and Policy

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This unit introduces students to the history and analytical methods of international trade theories and their applications. The theories are applied to contemporary issues in their institutional settings, in particular to: growth and development; economic integration and trading blocs; and the transformation of formerly planned economies as participants in global market structures.

300729.1 Graphic Communication and Design

Credit Points 10 **Level** 1

Equivalent Units

BG105A - Graphic Design and Communication

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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.

400896.1 Gymnastics and Dance

Credit Points 10 **Level** 3

Incompatible Units

100671 - Human Movement 5, 100672 - Introduction to Dance

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Students will actively engage in a variety of dance styles and gymnastics movement experiences to develop their own composition and skill competencies and examine the elements of movement and composition that underpin these forms of physical activity. Development of student ability to plan and implement quality-learning experiences that will enhance enjoyment of these forms of physical activities will be an integral component of this subject.

400275.1 Health Planning Project

Credit Points 10 **Level** 3

Prerequisite

400273.1 Health Politics, Policy and Planning

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This unit applies the theoretical concepts introduced in the unit, Health Politics, Policy and Planning namely the conduct of a health review, needs analysis, priority determination, and strategic planning. The emphasis is on group experiential learning, developing analytical skills required for comprehensive assessment, planning, implementation and evaluation of health plans. The topics are selected from current health priority issues and represent a realistic exercise. Students, functioning as a working party, develop knowledge and skills in negotiation, group work, committee structure and functioning, consultation and research processes, planning process and report writing.

400966.1 Health Politics, Policy and Planning

Credit Points 10 **Level** 2

Equivalent Units

400273 - Health Politics, Policy and Planning

Special Requirements

Prior to enrolling in this unit students must have submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate. Students must also complete NSW Health Immunisations.

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The Australian health care system is highly complex, consisting of inter-related sub-systems and is influenced by the broader socio-political environment. It is essential that health professionals understand and consider the economic, political and social context within which health policy and planning occur, so that strategies and policies are developed which are economically and politically viable, as well as socially acceptable and responsive to the actual needs of the community. This unit aims to develop an understanding of the policy making and planning processes within this broad context and to introduce the theory and skills related to such activities.

400738.1 Health Practice 1

Credit Points 20 **Level** 1

Corequisite

400737.1 Scientific Basis of Medicine 1

Special Requirements

Students must be enrolled in 4641 Bachelor of Medicine, Bachelor of Surgery. Students must have completed a Prohibited Employment Declaration; undergone a Criminal Record Check; have completed a WorkCover accredited Senior First Aid Certificate; and have an up to date Adult Vaccination Record. Students must also sign a declaration that they understand and comply with Infectious Diseases Policy, Health Records and Information Privacy Act (HRIPA) 2002; and UWS' submitting their details to the NSW Medical Board.

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The corequisite for this unit is 400737 Scientific Basis of Medicine 1. Both units must be completed successfully in the same year, in order for you to progress to the next year of the course. If one unit is failed or if both are failed, you must repeat both together in your next year of enrolment. The practice of medicine occurs within a psychological, social and cultural context. Health Practice 1 explores the complexity of medical practice and covers areas from doctor/patient interaction to an examination of the health care system. A particular focus will be the communities that make up Greater Western Sydney. Topics covered include: Communication skills; Patient history and examination; Ethics; Psychosocial aspects of medicine; Impacts of gender, culture and deprivation on health and medical care; Professionalism; and Population health.

400784.1 Health Promotion Practice 1

Credit Points 10 **Level** 3

Prerequisite

400271.1 Introduction to Health Promotion

Equivalent Units

400274 - Advanced Health Promotion Practice

Special Requirements

Prior to enrolling in this unit students must have submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate. Students must also complete NSW Health Immunisations.

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This unit builds on the knowledge gained in Essentials of Health Promotion. It provides the opportunity to apply health promotion theory to practical projects in the field related to current population health priorities, through 140 hours placement experience. It examines a range of political, social and economic issues and the way in which they impact on current health promotion practice. Working intersectorally, building capacity and applying best practice guidelines in the implementation of quality health promotion interventions is examined.

400784.2 Health Promotion Practice 1

Credit Points 10 **Level** 3

Prerequisite

400867.1 Approaches to Health Promotion

Special Requirements

Prior to enrolling in this unit students must have submitted a Criminal Record Check form prior to 1 June 2010 OR a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate. Students must also complete NSW Health Immunisations.

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This unit version will commence from 2012. This unit builds on the knowledge gained in Approaches to Health Promotion. It provides the opportunity to apply health promotion theory to practical projects in the field related to current population health priorities, through 120 hours service learning experience. It is concerned with developing knowledge and skills related to needs analysis, prioritising, and awareness of core values and principles associated with health promotion practice.

400785.1 Health Promotion Practice 2

Credit Points 10 **Level** 3

Prerequisite

400271.1 Introduction to Health Promotion AND **400274.1** Advanced Health Promotion Practice

Equivalent Units

400274 - Advanced Health Promotion

Special Requirements

Prior to enrolling in this unit students must have submitted a Criminal Record Check form prior to 1 June 2010 OR a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate. Students must also complete NSW Health Immunisations.

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This unit builds on the knowledge gained in Health Promotion Practice through web based teaching and 140 hours placement in the field. It provides the opportunity to develop higher order health promotion skills with practical projects in the field related to current population health priorities. It also examines community development strategies, capacity building approaches, social marketing and media through involvement in an extended placement. Furthermore, students gain project management skills.

400785.2 Health Promotion Practice 2

Credit Points 10 **Level** 3

Prerequisite

400867.1 Approaches to Health Promotion OR **400784.2** Health Promotion Practice 1

Equivalent Units

400276 - Community Development and Health

Special Requirements

Prior to enrolling in this unit students must have submitted a Criminal Record Check form prior to 1 June 2010 OR a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate. Students must also complete NSW Health Immunisations.

.....

This unit version will commence from 2012. This unit builds on the knowledge gained in Health Promotion Practice 1 through continuing with phases necessary for project design and management health promotion. It provides the opportunity to apply health promotion theory to practical projects in the field related to current population health priorities, through 120 hours service learning experience. It is concerned with developing knowledge and skills related to implementation and evaluation of health promotion projects, showing awareness of core values and principles necessary for effective health promotion practice.

400279.2 Health Services Financial Management

Credit Points 10 **Level** 3

Prerequisite

400277.2 Health Services Management

Special Requirements

This unit is restricted to 4545 students only. Prior to enrolling in this unit students must have submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate. Students must also complete NSW Health Immunisations.

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The Australian health care system must account for use of resources, and ensure their equitable and efficient use. Increasingly devolution of management function to cost centre level in health care organisations is occurring. Managers must consider the financial implications of clinical decisions, understand and act on accounting information. They are held responsible for the financial outcomes of their activities. This unit develops a basic knowledge of accounting principles, health services funding arrangements, government reforms, financial reporting, preparation of budgets, business cases and economic appraisals. There are 140 hours of placement in the field working with health managers on financial issues.

400277.2 Health Services Management

Credit Points 10 **Level** 2

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The health workplace is a complex and sophisticated environment that can be understood in many different ways and mean different things to different members of an organisation. Assumptions about organisational structure and action are based on one's conceptualisations and beliefs about the nature and goals of an organisation. This unit aims to develop an understanding of organisational theory and its application to management practice and organizational analysis in the health arena.

400787.1 Health Services Management Practice

Credit Points 10 **Level** 3

Prerequisite

400277.2 Health Services Management

Equivalent Units

400278 - Health Services Management 2

Special Requirements

This unit is restricted to 4545 - Bachelor of Health Science students only. Prior to enrolling in this unit students must have submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate. Students must also complete NSW Health Immunisations.

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The unit begins with an overview of the complexity and variability of health services and provides an understanding of component organisations, federal and state policy issues and environmental factors including the role of the private sector and non-government organisations. The changing role of the health services manager and competencies required for effective managing are examined. Influences on organisations are reviewed, including structures, culture, power and politics. Various management functions are explored through 140 hours of placement e.g. strategic planning, performance management, people management including workplace relations, conflict resolution, resource management (financial and asset), risk management, OH&S and quality assurance.

400788.1 Health Services Workforce Management

Credit Points 10 **Level** 3

Prerequisite

400277.1 Health Services Management 1

Special Requirements

Prior to enrolling in this unit students must have submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate. Students must also complete NSW Health Immunisations.

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This is a flexible learning unit looking at HRM as a strategic activity of health organisations especially as workforce shortages pose significant challenges to the health and aged care sectors. The workforce, with appropriate knowledge and expertise, is essential to the efficient and effective delivery of quality health services. Successful organisations shape their workforce to anticipate current and future business directions and goals. Workforce planning is a crucial element of this approach and its success.

400945.1 Honours Research 1

Credit Points 20 **Level** 5

Prerequisite

400944.1 Evidence-Based Practice (Advanced)

Special Requirements

This unit would only be relevant to honours students in health science courses studying their honours as part of an embedded program of study. This unit will be specifically tailored to accommodate the course and progression requirements of such students and therefore would not be relevant as a general elective.

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This unit commences the significant research component of the student's honours degree. Students will work on their specific research project in conjunction with their supervisor, engaging in the early stages of the research process related to critical review of the literature, designing their project, considering ethical dimensions of their study, and collecting data. The emphasis of this unit is on the application of research knowledge gained in other units to the practical conduct of the individual honours project.

400946.1 Honours Research 2

Credit Points 20 **Level** 5

Prerequisite

400945.1 Honours Research 1

Special Requirements

This unit would only be relevant to honours students in health science courses studying their honours as part of an embedded program of study. This unit will be specifically tailored to accommodate the course and progression requirements of such students and therefore would not be relevant as a general elective.

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In this unit students will complete the significant research component of their honours study. They will build upon the skills and knowledge of research, evidence-based practice and scholarly enquiry gained in units completed earlier in the program. The emphasis of this unit is the completion of a supervised honours research project. Each student will work individually with their supervisor to complete the stages of data collection and data analysis and will write their results into a format suitable for submission for examination. Students will also present their final at a student conference that is at professional conference level.

400872.1 Honours Research Design and Methodology

Credit Points 20 **Level** 4

Assumed Knowledge

Students need to have completed at least one unit in research methodology in an undergraduate degree program.

Equivalent Units

400471 - Exercise & Health Science Research & Practice,
400472 - Exercise & Health Science Honours Seminar

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Students will build upon the skills and knowledge of research, evaluation and scholarly enquiry gained in units completed in the undergraduate program. The unit aims to explore: the nature of research and experience of researching in health related areas, as well as technical skills of data collection, management, analysis and interpretation in health practice. A major outcome of the unit is the development of a formal project proposal for conducting the student's thesis inquiry. Ethical issues and aspects such as human rights and ethics clearances, confidentiality and respect for participants in research projects and the obligations placed on researchers will be covered. This unit will also provide students with a professional forum in which to discuss and present major aspects of their research project.

400959.1 Honours Research Project 1

Credit Points 0 **Level** 5

Prerequisite

400810.2 Integrated Clinical Rotations 1

Corequisite

400811.1 Integrated Clinical Rotations 2

Special Requirements

Students must be enrolled in 4641 - Bachelor of Medicine, Bachelor of Surgery.

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Students studying 4641, Bachelor of Medicine Bachelor of Surgery are offered an embedded Honours program. The program runs over Years 4 & 5 and this Unit is undertaken in conjunction with Integrated Clinical Rotations 2 (400811) in 2H Session 2010. The Honours Research Project 1 consists of approximately 100 hours work. The main objectives are to give students a heightened awareness and knowledge of the principles and methodology of medical research, and an enhanced ability to critically evaluate scientific literature. The research component will be assessed by an Honours dissertation to be submitted by the end of the following year. The award of MBBS Honours will require satisfactory completion of this unit plus Honours Research Project 2 and the appropriate GPA across the MBBS course.

400960.1 Honours Research Project 2

Credit Points 0 **Level** 5

Prerequisite

400811.1 Integrated Clinical Rotations 2 AND **400959.1** Honours Research Project 1

Corequisite

400977.1 Integrated Clinical Rotations 3

Special Requirements

Students must be enrolled in 4641 - Bachelor of Medicine, Bachelor of Surgery.

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Students studying 4641, Bachelor of Medicine Bachelor of Surgery are offered an embedded Honours program. The

program runs over Years 4 & 5 and this Unit is undertaken in conjunction with Integrated Clinical Rotations 3 (400977) from 2011. The Honours Research Project 2 consists of approximately 100 hours work. The main objectives are to give students a heightened awareness and knowledge of the principles and methodology of medical research, and an enhanced ability to critically evaluate scientific literature. The research component will be assessed by an Honours dissertation to be submitted by the end of this year. The award of MBBS Honours will require satisfactory completion of this unit plus Honours Research Project 1 and the appropriate GPA across the MBBS course. (see UWS Policy).

300675.1 Honours Thesis

Credit Points 40 **Level** 5

Prerequisite

300053.2 Professional Practice

Corequisite

81999.1 Industrial Experience (Engineering)

Equivalent Units

300484 - Engineering Thesis, 300036 - Major Investigation and Report 1, 300037 - Major Investigation and Report 2

Incompatible Units

300483 - Engineering Project, 300668 - Advanced Engineering Thesis

Special Requirements

This unit will be only offered to Bachelor of Engineering and Bachelor of Construction Management Honours level students. 3621 - Bachelor of Engineering students must be enrolled in a Key Program. Students should have achieved at least 240 credit points and must have a course Grade Point Average greater than or equal to 5.0.

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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.

400898.1 Honours Thesis in Health Science A

Credit Points 20 **Level** 4

Incompatible Units

400558/400559/400560 - Honours Thesis in Health Science/F-T/P-T year 1/P-T year 2; 400477/400478/400479/400480 - Sport & Exercise Science Thesis A/B/C/D

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This unit is the culmination of studies for students who have completed an undergraduate degree in Health Science and provides substantial training in research. Under staff supervision, students choose the particular topic for their research, design their own programme of research, perform the research and analyse the results. The culmination of this process is the production of a thesis in which students describe the rationale for their topic, their research programme, ethical issues, results, and their conclusions.

400899.1 Honours Thesis in Health Science B

Credit Points 40 **Level** 4

Incompatible Units

400558/400559/400560 - Honours Thesis in Health Science/F-T/P-T year 1/P-T year 2;
400477/400478/400479/400480 - Sport & Exercise Science Thesis A/B/C/D

.....

This unit is the culmination of studies for students who have completed an undergraduate degree in Health Science and provides substantial training in research. Under staff supervision, students choose the particular topic for their research, design their own programme of research, perform the research and analyse the results. The culmination of this process is the production of a thesis in which students describe the rationale for their topic, their research programme, ethical issues, results, and their conclusions.

400900.1 Honours Thesis in Health Science C

Credit Points 20 **Level** 4

Incompatible Units

400558/400559/400560 - Honours Thesis in Health Science/F-T/P-T year 1/P-T year 2;
400477/400478/400479/400480 - Sport & Exercise Science Thesis A/B/C/D

.....

This unit is the culmination of studies for students who have completed an undergraduate degree in Health Science and provides substantial training in research. Under staff supervision, students choose the particular topic for their research, design their own programme of research, perform the research and analyse the results. The culmination of this process is the production of a thesis in which students describe the rationale for their topic, their research programme, ethical issues, results, and their conclusions.

400901.1 Honours Thesis in Health Science D

Credit Points 20 **Level** 4

Incompatible Units

400558/400559/400560 - Honours Thesis in Health Science/F-T/P-T year 1/P-T year 2;
400477/400478/400479/400480 - Sport & Exercise Science Thesis A/B/C/D

.....

This unit is the culmination of studies for students who have completed an undergraduate degree in Health Science and provides substantial training in research. Under staff supervision, students choose the particular topic for their research, design their own programme of research, perform the research and analyse the results. The culmination of this process is the production of a thesis in which students describe the rationale for their topic, their research programme, ethical issues, results, and their conclusions.

200708.1 Hospitality Industry

Credit Points 10 **Level** 3

Assumed Knowledge

Basic knowledge of hospitality is assumed for this unit

Equivalent Units

200562 - Hospitality Markets, MK301A - Hospitality Marketing

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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.

200561.2 Hospitality Management Applied Project

Credit Points 10 **Level** 3

Assumed Knowledge

Advanced unit - students are expected to have gained an introductory level of knowledge in hospitality management.

Prerequisite

200707.1 Service Industry Studies

Equivalent Units

200140 - Tourism and Hospitality Research Project

Incompatible Units

200580 - Sport Management Applied Project

.....

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.

200584.2 Hospitality Management Operations

Credit Points 10 **Level** 3

Assumed Knowledge

Advanced unit, students are expected to have gained an introductory level of knowledge in hospitality management.

Equivalent Units

HS206A - Hospitality Management Operations

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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.

400868.1 Human Anatomy and Physiology 1

Credit Points 10 **Level** 1

Incompatible Units

300361 - Introduction to Human Biology, 300319 - Introduction to Human Anatomy and Histology, 300320 - Introduction to Human Physiology, 400130 - Human Medical Sciences 1, 400256 - Human Medical Sciences 2

This is the first of two units covering systematic anatomy and physiology at an introductory level. This unit is designed to provide students especially those in applied health science programs with an overview of body systems and their functions to ensure a suitable basis for their future studies. The unit studies the basic concepts of biochemistry and histology, general anatomy and physiology of the major body systems such as central and peripheral nervous systems, integumentary system, musculoskeletal system (bones, muscles and joints), special senses and endocrine system. Emphasis will be placed on the interconnection and relationship between structure and function at every level of organisation.

400869.1 Human Anatomy and Physiology 2

Credit Points 10 **Level** 1

Assumed Knowledge

400868 - Human Anatomy and Physiology 1

Prerequisite

400868.1 Human Anatomy and Physiology 1

Incompatible Units

14466 - Human Biology 2, 300319 - Introduction to Human Anatomy and Histology, 300320 - Introduction to Human Physiology, 400256 - Human Medical Sciences 2, 400130 - Human Medical Sciences 1

This is the second of two units covering systematic anatomy and physiology at an introductory level. This unit is designed to provide students especially those in applied health science programs with an overview of body systems and their functions to ensure a suitable basis for their future studies. The unit studies the general anatomy and physiology of the major body systems such as cardiovascular, respiratory, digestive, urinary, reproductive and lymphatic system/immunity, body fluids & acid-base balance and metabolism. Emphasis will be placed on the interconnection and relationship between structure and function at every level of organisation.

300426.1 Human Animal Interactions

Credit Points 10 **Level** 1

This unit introduces students to the varying relationships between humans and animals. It deals with domestication, the role of animals for companionship and as workers, the traditional role of animals in agriculture, wildlife and zoo animals and their increasingly recognized aesthetic and therapeutic roles. Students are exposed to a variety of external animal industries and organizations working with animals, including wildlife parks and zoos but also work with captive mammals and reptiles on campus.

300547.1 Human Genetics

Credit Points 10 **Level** 2

Assumed Knowledge

Structure of basic biomolecules, cell structure, knowledge of chromosomes and role in mitosis and meiosis. Structure of DNA and processes of replication, transcription and translation, Mendelian genetics.

Prerequisite

300543.1 Cell Biology OR **300221.1** Biology 1

Incompatible Units

BI210A - Genetics 2.2

This unit will provide a sound knowledge of the genetic basis of disease and genetic problems of human development. Students will learn basic genetic principles as they study examples of genetic problems in human health and disease. Topics include Mendelian and multifactorial genetics, autosomal and X-chromosomal abnormalities, population genetics, oncocyto-genetics, and the use of DNA technologies in gene mapping, disease diagnosis, screening and therapy. The focus will be on cytogenetics since molecular genetics will be covered in other units.

400130.1 Human Medical Sciences 1

Credit Points 10 **Level** 1

Equivalent Units

E1231 - Human Biology

Incompatible Units

E1241 - Human Medical Sciences I

Special Requirements

Students who have successfully completed both Human Medical Sciences 1 and Human Medical Sciences 2 are eligible for advanced standing in only 400868 - Human Anatomy and Physiology 1. Students who have completed either Human Medical Sciences 1 or Human Medical Sciences 2 must apply for a rule waiver to enrol in 400868 - Human Anatomy and Physiology 1 to complete course requirements.

The unit studies the basic concepts of biochemistry and histology, general anatomy, and physiology of the major body systems. This unit is designed to provide students

especially applied health science students with an overview of body systems and their functions to ensure a suitable basis for their future studies of regional anatomy, clinical neurosciences, microbiology, pharmacology, pathology and other clinical sciences.

400134.1 Human Medical Sciences 3

Credit Points 10 **Level** 1

Prerequisite

400130.1 Human Medical Sciences 1

Equivalent Units

E1237 - Human Biology 2, 400881 - Functional Anatomy

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In 2010 this unit will be replaced by 400881 - Functional Anatomy. This unit is intended to provide students with an in depth and clinical study of those human medical sciences which underpin specific intervention principles and procedures to be taught in the professional units. Primary contact health care providers have professional requirements that cover a broad spectrum of diagnostic, medical and physical practices. In order to ensure a suitable basis for later practice of osteopathy, podiatry, and occupational therapy, students require a detailed knowledge and understanding of anatomy and physiology with emphasis on musculoskeletal system, innervation and blood supply of relevant body structures.

300548.1 Human Metabolism and Disease

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of protein structure and function, gene expression, principles of enzyme catalysis, including the structure of enzymatic active sites and catalytic mechanisms, knowledge of eukaryotic intracellular compartments and their broad function.

Prerequisite

300555.1 Proteins and Genes OR 300219.1 Biochemistry 1

Equivalent Units

14427 - Biochemistry 2, 14440 - Biochemistry 2, 300220 - Biochemistry 2, J2821 - Biochemistry of Metabolism

Incompatible Units

300227 - General Biochemistry, BC202A - Biochemistry 2.2

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Students studying at Hawkesbury or Parramatta campus should refer to 300220 - Biochemistry 2. Understanding human metabolism at a molecular level underpins our understanding of human health and metabolic diseases, such as diabetes and obesity. Kinetics and regulation of enzymes will be studied as a preliminary to learning how metabolic pathways work. The central pathways of energy metabolism, their control and inter-relationships will be analysed in detail, including carbohydrate and fat metabolism; ATP synthesis involving electron transport and ATP synthase; and nitrogen metabolism, including aspects of amino acid degradation and urea synthesis. Emphasis will be placed on enzyme and hormonal regulations, the roles of different tissues in metabolic homeostasis; and the

consequences for human health when enzymes or their regulations are defective.

300549.1 Human Molecular Biology

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge of DNA, gene and chromosome structure in eukaryotes; the basic events in eukaryotic transcription, including the structure and role of eukaryotic RNA polymerase; post-transcriptional events in eukaryotes and their purpose; the basic events in eukaryotic translation; protein structure and conformation, and the importance of post-translational modifications for protein function.

Prerequisite

300555.1 Proteins and Genes OR 300219.1 Biochemistry 1

Equivalent Units

14439 - Cell and Molecular Biology, 300234 - Molecular Biology, BI305A Molecular Biology, J3678 - Molecular Genetics

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Students studying at Hawkesbury or Parramatta campus should refer to 300234 - Molecular Biology. This unit concentrates on the Molecular Biology of eukaryotic cells (human) and studies gene regulation at an advanced level, leading into the processes and practical applications of DNA technology. Students gain a thorough grounding in major techniques involved in gene cloning, such as DNA manipulation using restriction enzymes, PCR, DNA fingerprinting. Cloning vectors, DNA libraries, genetic engineering in different types of eukaryotic cells and organisms and are studied. Students are introduced to functional genomics, bioinformatics and issues in biosafety and ethics relating to gene technology.

300620.1 Human Physiology 1

Credit Points 10 **Level** 2

Assumed Knowledge

This unit relies upon knowledge gained from previous units studied, particularly First-Year Biology and Chemistry.

Equivalent Units

BC206A - Human Physiology 2.2; 300320 - Introduction to Human Physiology

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This unit aims to provide the student with an understanding of the physiological mechanisms which operate to maintain homeostasis. The structure and normal functioning of some of the major body systems are examined, as well as certain disturbances to normal functioning caused by disease processes or environmental factors.

300622.1 Human Physiology 2

Credit Points 10 **Level** 3

Assumed Knowledge

Demonstrated sound understanding of undergraduate Level 1 biology and Level 2 physiological systems of the human body.

Equivalent Units

BC306A - Human Physiology 3.1, 300326 - Topics in Physiology

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This unit emphasises detailed functional aspects of the nervous system, particularly sensory (vision, hearing, taste, smell) and skeletal systems and their physiological responses via neural pathways to external stimuli. Underpinning these broader concepts is a detailed examination of electrophysiology i.e. ion channel structure and function, membrane potential, neurotransmitters and neurotransmission.

200740.1 Human Resource and Industrial Relations Strategy

Credit Points 10 **Level** 3

Prerequisite

200300.1 Managing People at Work

Incompatible Units

200618 - Human Resource Strategy, 200615 - Industrial Relations Strategy

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This unit analyses 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. It covers the development of human resource management and industrial relations as a professional field, the relationship between business strategies and HR/IR strategies, stakeholders and strategic choice, ethics and professional standards, strategic HR/IR interventions; evaluation of strategy.

200381.3 Human Resources Development Seminar

Credit Points 10 **Level** 3

Prerequisite

200300.1 Managing People at Work

Equivalent Units

200575 - Process and Evaluation in Employment Relations

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This unit uses engaged learning to allow students to apply knowledge and develop skills developed in the Human Resource Development and Organisational Development Key Program. Student will participate in consultancy teams that will undertake empirical research and problem diagnosis and solution for a specified project, normally for a real-world organisation, which may include commercial firms, not-for-profit organisations and community/public organisations. Projects will be reported upon and presented to clients from the organisation. Project topics may include training needs analysis, HRD evaluation, a change management project, employee attitude or organisational climate surveys, employee well-being and health promotion, work/life balance initiatives, etc.

300570.2 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 organizational 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.

300765.1 Hydraulics

Credit Points 10 **Level** 3

Assumed Knowledge

200238 – Mathematics for Engineers 2

Prerequisite

300762.1 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.

300766.1 Hydrology

Credit Points 10 **Level** 4

Assumed Knowledge

200238 – Mathematics for Engineers 2

Prerequisite

300765.1 Hydraulics OR **300740.1** Water Engineering

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.

300136.3 I.T. Support Practicum

Credit Points 10 **Level** 3

Prerequisite

300150.1 PC Workshop AND **300138.1** LAN Workshop OR **300576.1** Networking Workshop

Special Requirements

Students can only enrol in this unit in their final session of study. The unit is restricted to students undertaking the Bachelor of Technology (IT Support), the Bachelor of Computing, the Bachelor of Computer Science, the Bachelor of Information Technology, the Bachelor of Mathematics and Information Technology or the Bachelor of Information and Communications Technology.

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This unit provides students real-world experience in the area of Information Technology (IT) support. Students are located with industry partners in the Greater Western Sydney region in IT support positions for 10 hours per week over a 12 week period. In addition, students receive instruction and tuition in aspects of professional practice such as code of ethics.

300229.2 Immunology

Credit Points 10 **Level** 3

Prerequisite

300219.2 Biochemistry 1 OR **300555.1** Proteins and Genes

Incompatible Units

300223 - Cell signalling and Molecular Immunology

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This unit aims to provide students with an understanding of structure and function of immune system, and in particular how the individual components integrate to cause normal function. The students will also become familiar in laboratory techniques involving immunological principles, develop investigative skills leading to understanding the knowledge base and laboratory skills and procedures, develop self learning at a sophisticated level consistent with that expected in the work place, enhance their science communication skills.

300631.2 Indigenous Landscape

Credit Points 10 **Level** 1

Corequisite

300664.1 Science in Society

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This unit aims to integrate traditional Aboriginal ways of knowing landscape into the undergraduate key programs in Environmental Management and Nature Conservation. Specifically, the unit incorporates UWS generic Indigenous core curriculum content that acknowledges and values pre-colonial Australian history and land use practice. Content includes traditional land management, protected area management, co-management, Native Title, Indigenous versus statute law, sustainable land use, cultural heritage and heritage landscapes. The unit aims to equip students to address issues of dispossession and disadvantage

brought about by the historical destruction and disruption of ecological integrity.

300773.1 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

300313.1 Design Studio 4: Simulate to Innovate AND **300314.1** Designed Inquiry

Equivalent Units

85032 - Industrial Design Project (Commencement)

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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 (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 Commencement, candidates produce a comprehensive research design (and seek ethics approval as needed), literature review, preliminary concept explorations and a detailed industrial design brief.

300774.1 Industrial Design Project (Completion)

Credit Points 40 **Level** 5

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

300773.1 Industrial Design Project (Commencement)

Equivalent Units

85033 - Industrial Design Project (Completion)

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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.

300775.1 Industrial Experience

Credit Points 0 **Level** 3

Assumed Knowledge

Successful completion of 160 credit points in either course 3502 - Bachelor of Design and Technology or 3503 - Bachelor of Industrial Design or 3504 - Bachelor of Industrial Design Engineering.

Equivalent Units

10915 - Industrial Experience

Special Requirements

Students must be enrolled in 3502 Bachelor of Design and Technology or 3503 Bachelor of Industrial Design.

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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".

300741.1 Industrial Experience (Engineering)

Credit Points 0 **Level** 3

Assumed Knowledge

A broad background knowledge in the relevant Engineering discipline (ie., equivalent to that obtained after completing 3 years of the Engineering program)

Equivalent Units

81999 - Industrial Experience (Engineering)

Special Requirements

Successful completion of 240 credit points.

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Students will 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 company or more.

300302.1 Industrial Graphics 1: Presentation

Credit Points 10 **Level** 1

Equivalent Units

J3764 - Industrial Graphics (Presentation)

.....

The presentation and promotion of designs in the form of 2D graphics is a necessary component of the overall design process. The ability to apply a wide range of both manual and computer based processes in the production of these graphical images and presentations is essential. The objective of this subject is to introduce students to the

industry standard software and hardware employed to generate this type of material, and more importantly this unit exposes students to the techniques used by professionals who currently work in this area of the design community. Industrial Graphics 1 Presentation is part of a sequence of five units that constitute the sub-major in Industrial Graphics and eight units that constitute the major in Interactive Industrial Graphics.

300282.1 Industrial Graphics 2: Transition

Credit Points 10 **Level** 2

Equivalent Units

J1756 - Industrial Graphics (2D Drawing), J1759 - Industrial Graphics (Transition), 10940 - Technical Presentation 2

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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.

300310.2 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 from outside 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)

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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.

300312.2 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)

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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.

300315.2 Industrial Graphics 5: Integrated

Credit Points 10 **Level** 3

Assumed Knowledge

It is assumed students have computer and hand rendering capabilities along with graphic computer presentation skills. Knowledge of consumer markets and Manufacturing is also essential.

Prerequisite

300312.2 Industrial Graphics 4: Surface AND **300310.2** Industrial Graphics 3: 3D Solids

Equivalent Units

J3824 - Industrial Graphics (Integration)

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The ability to draw on a broad range of industrial graphics skills and techniques and to apply them appropriately to design projects is a cornerstone of the modern design process. It is the aim of this unit to synthesise the components of the industrial graphics strand and provide a single project with a range of components to which these skills can be applied and evaluated.

300724.1 Industry Based Learning

Credit Points 0 **Level** 5

Equivalent Units

BG311A - Industry Based Learning

Special Requirements

Students must be enrolled in 2607 - Bachelor of Construction Management.

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Students are required to undertake 1200 hours industry based experience as required by course and professional accreditation bodies.

300128.2 Information Security

Credit Points 10 **Level** 3

Assumed Knowledge

Basic understanding of data structures, number theory and probability theory. Basic programming skills in C or java, etc.

Prerequisite

200025.1 Discrete Mathematics OR **200031.1** Mathematics for Business OR **200190.1** Finite Mathematics AND **300103.1** Data Structures and Algorithms OR **300156.1** Programming Principles 2 OR **300125.1** Fundamentals of Computer Science

Special Requirements

Students need to undertake one pre-requisite unit from the following three units: 200025 - Discrete Mathematics, 200031 - Mathematics for Business, 200190 - Finite Mathematics AND one pre-requisite from the following three units: 300103 - Data Structures and Algorithms, 300156 - Programming Principles 2, 300125 - Fundamentals of Computer Science

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This unit is concerned with the protection and privacy of information in computer systems. The focus of the course is primarily on introducing basic concepts in computer and information security and then using this knowledge as the vehicle to study the design and implementation of secure computer and network systems. This unit also provides students with practical experience with security programming. In more specific terms, the unit is intended to provide the following: basic concepts of conventional and public key encryption; number theory and its application in public key encryption and signatures; protocols used in secure computer systems.

300572.1 Information Systems Deployment and Management

Credit Points 10 **Level** 3

Assumed Knowledge

- A general understanding of various Information Systems in the eBusiness environment - Familiarity with information system development processes

Prerequisite

300585.1 Systems Analysis and Design AND **300580.1** Programming Fundamentals

Equivalent Units

300272 - Enterprise Information Management

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This unit provides a detailed overview of system implementation stages taking into the consideration steps necessary to place the newly developed system into production, educate consumers and system users, confirm accuracy of data needed for the system's accurate functionality and assure that all business functions that interact with the system are performing properly. In addition, this unit aims to portray how project management skills are crucial in timely production and delivery of the final product. At the completion of the successful deployment system is usually transitioned to system support and

maintenance therefore the overview of the transition process is also portrayed.

CP308A.1 Information Systems Ethics and Law

Credit Points 10 **Level** 3

Special Requirements

Students enrolled in course 2502 - Bachelor of Laws (Non graduate entry) must obtain permission to enrol in this unit.

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This unit aims to provide students with an appreciation of the ethical and legal issues surrounding the use of information systems, particularly the internet. It examines the regulatory framework to facilitate an understanding of the legal boundaries within which e-commerce may operate. Matters including the abuse of computers, the privacy of computerised data and electronic communications are critically analysed to reveal a variety of issues which are legally significant.

300573.1 Information Systems in Context

Credit Points 10 **Level** 1

Assumed Knowledge

2 Unit Mathematics and 2 Unit English (General)

Incompatible Units

200128 - Introduction to Information Systems

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This unit aims to give students the ability to recognise and expound about business information systems with regard to type, function, and purpose, and the frameworks within which these systems are used. Topics in this unit include computing fundamentals; computer hardware and software; computers and society; use of business application packages – spreadsheets, word processing, database, graphics; organisational information systems; information systems development and acquisition; data and knowledge management; electronic commerce, internets, extranets; networking; enterprise-wide information systems; the internet and information systems security; privacy, ethics and computer crime.

70000.2 Information Systems in Context (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300573 - Information Systems in Context

Incompatible Units

200128 - Introduction to Information Systems

Special Requirements

Students must be enrolled at UWS College.

.....

This unit aims to give students the ability to recognise and expound about business information systems with regard to type, function, and purpose, and the frameworks within which these systems are used. Topics in this unit include computing fundamentals; computer hardware and software;

computers and society; use of business application packages – spreadsheets, word processing, database, graphics; organisational information systems; information systems development and acquisition; data and knowledge management; electronic commerce, internets, extranets; networking; enterprise-wide information systems; the internet and information systems security; privacy, ethics and computer crime. A major theme of this unit is in developing an understanding of the importance of the use of information for decision making in organisations.

300486.1 Infrastructure Engineering

Credit Points 10 **Level** 2

Prerequisite

85003.1 Surveying for Engineers OR **300738.1** Surveying for Engineers

Equivalent Units

85007 - Civil & Environmental Engineering Construction, 85008 - Engineering Urban Environments, 300296 - Road & Traffic Engineering

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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 looks at local, regional and international as well as specific project-related infrastructure issues.

400286.2 Injury Prevention

Credit Points 10 **Level** 3

Prerequisite

400867.1 Approaches to Health Promotion

Special Requirements

Prior to enrolling in this unit students must have submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate. Students must also complete NSW Health Immunisations.

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Injury Prevention is a National Health Priority. Injury is the preferred term rather than 'accident' with its connotations of inevitability and lack of apparent cause, to allow development of inter-disciplinary prevention initiatives. A systematic scientific approach to injury research and prevention is in evidence for road and occupational safety, backed by well resourced implementation structures. Other settings/sectors include sport, recreation, falls, firearms, farm, product and water safety, which are also seeing the benefits of injury prevention principles, which include health promotion issue analysis and strategic hierarchical implementation strategies using the 4Es of education, enforcement, engineering and environment.

200163.1 Innovation and Product Development

Credit Points 10 **Level** 2

Assumed Knowledge

Assumed understanding of business management fundamentals in the context of an enterprise's competitive activities in the marketplace.

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Innovation is an imperative for the competitiveness of enterprises. This unit gives students an understanding of innovation and product development as management processes within an enterprise that provide impetus for their continuing competitiveness. Studies have shown that the development of new products has a greater leverage on a company's profits than any other growth strategy, including acquisition. This unit also gives students insight into how the process of innovation can be enhanced within enterprises. It also examines various processes adopted by enterprises for undertaking new product development, and how product development can be a means of achieving growth for a firm.

300230.1 Inorganic Chemistry 2

Credit Points 10 **Level** 2

Assumed Knowledge

A demonstrated understanding of and competence with basic chemical principles including SI units, chemical symbols, formulas and equation, nomenclature, stoichiometry, the mole concept, bonding, molecular shape and polarity, states and properties of matter, thermodynamics, equilibria, acids and bases, pH and electrochemistry, to a standard equivalent to that presented in Chemistry 1 (or equivalent). An understanding of basic organic chemistry, particularly functional groups, their structures and properties, will be advantageous.

Prerequisite

300224.1 Chemistry 1 OR **300554.1** Principles of Chemistry

Equivalent Units

14247 - Inorganic and Analytical Chemistry, 300545 - Coordination Chemistry, CH206A - Chemistry 2.2, J2758 - Inorganic Chemistry 2

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Students studying at Campbelltown campus should refer to 300545 - Coordination Chemistry. This unit develops students' knowledge and comprehension of fundamental inorganic chemistry. A detailed introduction to co-ordination chemistry, discussing ligands, geometry, isomerism and oxidation states is provided, with particular emphasis on elements in the first transition series. Bonding in inorganic chemistry, solution chemistry, solid state chemistry, descriptive chemistry of representative main-group elements, and trends in the periodic table are also covered. Bioinorganic chemistry and some environmental aspects of inorganic chemistry are introduced. This unit also introduces students to many of the laboratory techniques and equipment that are used in this discipline.

300231.1 Inorganic Chemistry 3

Credit Points 10 **Level** 3

Assumed Knowledge

A demonstrated understanding of and competence with the principles of inorganic chemistry, including bonding and structure, coordination chemistry, bioinorganic chemistry and laboratory techniques, to a standard equivalent to that presented in Inorganic Chemistry 2 (or equivalent).

Prerequisite

300230.1 Inorganic Chemistry 2

Equivalent Units

J3668 - Inorganic Chemistry 3

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Students studying at Campbelltown campus should refer to 300538 - Advanced Inorganic Chemistry. This unit is built on the foundations laid in the unit 300230 - Inorganic Chemistry 2/300545 - Coordination Chemistry. Initially, this unit focuses on the nature of structure and bonding in inorganic chemistry. The spectroscopic and magnetic properties of inorganic compounds are evaluated as a consequence of the concepts of structure and bonding. Kinetics and mechanism of inorganic reactions are examined, and the important area of organo-transition metal chemistry is introduced. Laboratory sessions emphasise experimental design and planning by students, while introducing important techniques such as anaerobic synthesis. Students become familiar with inorganic chemistry literature and begin to appreciate recent work in this field. The laboratory component focuses on a variety of advanced techniques such as anaerobic syntheses and instrumental techniques of characterisation such as NMR, IR and electronic spectra. As well as requiring core studies, this unit recognises the diversity of inorganic chemistry by allowing students to specialise in certain advanced topics. Students select two out of five advanced topics: characterisation of inorganic compounds; selected descriptive inorganic chemistry; bioinorganic chemistry; aqueous chemistry of cations and metallic oxyanions; inorganic materials chemistry.

300075.3 Instrumentation and Measurement

Credit Points 10 **Level** 3

Prerequisite

300005.1 Circuit Theory

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This unit covers all topics associated with the measurement of physical quantities and the instrumentation required to accurately present this information to a controller. 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-analog and analog-to-digital circuits. The application of these modules in modern measurement equipment – multimeters, digital CROs and PLC/PC interfacing modules is discussed.

400979.1 Integrated Clinical Rotations (General)

Credit Points 120 **Level** 4

Prerequisite

400810.1 Integrated Clinical Rotations 1

Incompatible Units

400811 - Integrated Clinical Rotations 2 and 400977 - Integrated Clinical Rotations 3

Special Requirements

Students must be enrolled in 4641 Bachelor of Medicine, Bachelor of Surgery. Students will have achieved all following special requirements in the preceding years of the course. 1. Criminal record check 2. Immunisations required by Health Service 3. Registration with Medical Board NSW 4. Child protection check. Immunisation status will be reviewed prior to the start of Year 3.

Integrated Clinical Rotations (General) is a specific unit for students who have deficiencies in performance at the end of Integrated Clinical Rotations 3. The content will be tailored to each student to enable them to achieve competence in medicine. The unit will run from the middle of one year to the middle of the following year and the assessment will be held in conjunction with Integrated Clinical Rotations 3.

400810.2 Integrated Clinical Rotations 1

Credit Points 80 **Level** 3

Prerequisite

400862.1 Foundations of Medicine 2

Special Requirements

Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate; 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010; 3) signed a declaration that they understand and comply with: - Infectious Diseases Policy - Health Records and Information Privacy Act (HRIPA), 2002 - UWS' submitting their details to the NSW Medical Board; 4) successfully completed a WorkCover accredited Senior First Aid Certificate and have an up to date Adult Vaccination Record.

ICR1 is the first major clinical year of the MB BS program. It consists of 12 weeks in each of Surgery, Medicine and Community based health care. There will also be 3 Conference weeks where all students will be based on the Campbelltown campus. Surgery and medicine rotations will be at Campbelltown, Blacktown and Mt Druiitt hospitals. In each rotation students will spend 6 weeks in each of two sub-specialities. The Community rotations will involve general practice, aboriginal medical services and other community based aspects of the health care system. Students will also undertake 3 online learning modules. Students will also undertake one assignment in Evidence-based Medicine.

400811.1 Integrated Clinical Rotations 2

Credit Points 80 **Level** 4

Prerequisite

400810.1 Integrated Clinical Rotations 1

Special Requirements

Students must be enrolled in 4641 Bachelor of Medicine, Bachelor of Surgery. Prior to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop; 2) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate; have an up to date Adult Vaccination Record and Registration with Medical Board NSW. Immunisation status will be reviewed prior to the start of Year 3.

ICR2 is the second major clinical year of the MB BS program. It consists of ten weeks in each of Paediatrics, Obstetrics & Gynaecology and Psychiatry and four weeks in each of Oncology and Palliative Care and Community based Research project. There will also be three Conference weeks where all students will be based on the Campbelltown campus. Students will be based at a number of appropriate hospitals throughout Sydney. Students will also undertake three online learning modules (Scientific Streams). Students will also undertake a reflective portfolio.

400812.1 Integrated Clinical Rotations 3

Credit Points 80 **Level** 4

Prerequisite

400811.1 Integrated Clinical Rotations 2

Special Requirements

Students must be enrolled in 4641 Bachelor of Medicine, Bachelor of Surgery. Prior to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop; 2) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate; have an up to date Adult Vaccination Record and Registration with Medical Board NSW. Immunisation status will be reviewed prior to the start of Year 3.

ICR3 is the third major clinical year of the MB BS program. It consists of five weeks in each of Medicine x2, Surgery x2, General Practice, Indigenous Health and ICU, ED and Anaesthetics. There will also be four Conference weeks where all students will be based on the Campbelltown campus. Students will be based at a number of appropriate hospitals throughout Sydney. Students will also undertake four online learning modules (Scientific Streams). Students will also undertake a reflective portfolio.

400977.1 Integrated Clinical Rotations 3

Credit Points 40 **Level** 4

Prerequisite

400811.1 Integrated Clinical Rotations 2

Special Requirements

Students must be enrolled in 4641 Bachelor of Medicine, Bachelor of Surgery. Students will have achieved all following special requirements in the preceding years of the course. 1. Criminal record check 2. Immunisations required by Health Service 3. Registration with Medical Board NSW 4. Child protection check. Immunisation status will be reviewed prior to the start of Year 3

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Integrated Clinical Rotations 3 is the first session of the third major clinical year of the MB BS program. It consists of 5 weeks in each of Medicine, Surgery, General Practice or Indigenous Health or ICU, ED & Anaesthetics. There will also be 2 Conference weeks where all students will be based on the Campbelltown campus. Students will be based at a number of appropriate hospitals throughout Sydney. Students will also undertake 2 online learning modules (Scientific Streams).

400978.1 Integrated Clinical Rotations 4

Credit Points 40 **Level** 4

Prerequisite

400977.1 Integrated Clinical Rotations 3 OR **400979.1** Integrated Clinical Rotations (General)

Special Requirements

Students must be enrolled in 4641 Bachelor of Medicine, Bachelor of Surgery. Students will have achieved all following special requirements in the preceding years of the course. 1. Criminal record check 2. Immunisations required by Health Service 3. Registration with Medical Board NSW 4. Child protection check. Immunisation status will be reviewed prior to the start of Year 3.

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Integrated Clinical Rotations 4 is the final Unit in the MBBS course and consists of clinical rotations in Medicine, Surgery and two of General Practice, Indigenous Health and ICU/Emergency/Anaesthetics. Students also undertake two Scientific Streams and two Conference weeks.

300661.1 Integrated Science 1

Credit Points 10 **Level** 1

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Integrated Science 1 is an innovative new introductory unit aimed at breaking the barriers and connecting the concepts between the traditional science disciplines. The content is based on the science that is important for the future of life on earth, often spanning discipline areas including physics, chemistry, biology and maths. The central role of mathematics is emphasized throughout. The pedagogy has at its heart a problem-based learning experience for students, so that they are engaged in an authentic and meaningful learning experience. Problem solving analysis and communication are stressed over rote learning and regurgitation of facts.

400154.1 Integrating Evidence into Practice

Credit Points 10 **Level** 5

Equivalent Units

400865 - Evidence Based Practice

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In 2012 this unit will be replaced by 400865 - Evidence Based Practice. Research should be an important component of all health professionals' practice. This unit prepares students to graduate as evidence-based professionals and competent research consumers, by advancing skills learned in earlier research units. The early stages of the unit will build on students' previous study of research methods. Searching for, appraising, and summarising research in a relevant clinical area will be used to illustrate the process of evidence-based practice, and will provide a context for the further study of the technical principles of research. Barriers to the implementation of research in practice, policy-making, and health care planning will be explored.

300368.1 Intelligent Systems

Credit Points 10 **Level** 3

Assumed Knowledge

Basic understanding of data structures and algorithms and basic programming skills in Pascal C/C++ or Java etc.

Prerequisite

200025.1 Discrete Mathematics

Equivalent Units

300087 - Artificial Intelligence, 300137 - Knowledge Based Systems

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This unit provides basic studies in the major areas of artificial intelligence: search, knowledge representation, logic programming, machine learning and knowledge based systems, agent planning and learning. The first part of this unit will focus on the foundation of artificial intelligence: search algorithms and their implementations, game playing, logics and knowledge representation, and inference in reasoning systems. The second part will cover the principles of knowledge based systems (intelligent systems), planning, and machine learning.

100789.2 Interactive Design I

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 cd creation. Skills in design principles: layout, colour and typography. Literacy with Image manipulation software - e.g. Photoshop or Fireworks

Prerequisite

300302.1 Industrial Graphics 1: Presentation

Equivalent Units

100778 - Designing Multimedia

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This unit focuses on design methodology for the development and delivery of contemporary interactive media applications. Particular concepts addressed will also include conceptual integration and convergence of various media forms, screen design, navigational hierarchy and structures, and designing engaging interactive interfaces. General principles of interface, interaction design and information architecture will be introduced, alongside basic principles of digital media production.

100949.2 Interactive Design II

Credit Points 10 **Level** 2

Prerequisite

100789.1 Interactive Design I

Equivalent Units

100799 - Online Design

.....

This unit focuses on interactive design from an experience design perspective. Approaches utilising current digital technologies for advanced interactive design are explored. Students will design and produce interactive products and examine and critique current content and trends within these technologies. The focus of the unit is communication and experience design, rather than technical implementation. Interactive design examples are examined from the context of shifting production languages, convergent technologies and the design professional contexts.

200536.1 Intermediate Financial Accounting

Credit Points 10 **Level** 2

Prerequisite

200111.1 Financial Accounting Applications

Equivalent Units

200112 - Financial Accounting Issues, 61112 - The Anatomy of Financial Accounting

Incompatible Units

AC304A - Advanced Financial Accounting, H3327 - Financial Accounting 3

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This unit extends the knowledge and understanding of financial accounting through the application of problem solving to selected entities drawing upon accounting theory and critical analysis.

200595.2 International Business Finance

Credit Points 10 **Level** 3

Equivalent Units

61124 - International Business Finance

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The unit is designed to provide students with an overview of the economic, political and institutional environment in which international business is conducted. Particular attention is given to the historical development of the international monetary system, the transnational corporation and the impact of globalization upon international financial transactions and international business practices.

200590.1 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

200591.1 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.

200626.1 International Business Strategy

Credit Points 10 **Level** 3

Assumed Knowledge

An understanding of the basic principles of marketing and international business.

Prerequisite

200083.1 Marketing Principles AND **200591.1** 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.

200055.3 International Finance

Credit Points 10 **Level** 3

Prerequisite

200488.1 Corporate Financial Management AND **200525.1** Principles of Economics

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The study of international finance from the vantage point of a multinational enterprise provides students with a global insight into international trade for both manufactured and financial products. The unit recognises the increasing importance of global integration of money and capital markets - a trend that is creating expanded opportunities for both investors and organisations that need to raise capital. The recognition and management of risks associated with international operations are explored including cost of capital and financial structure, international financial markets crisis, international financial management, international monetary system, international diversification, foreign exchange risk management including the use of futures and options, foreign investment analysis, determination of exchange rates, balance of payments analysis, international debt crisis and country risk analysis.

200621.2 International Human Resource Management

Credit Points 10 **Level** 3

Prerequisite

200300.1 Managing People at Work

Equivalent Units

61472 - International Human Resource Management

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This unit covers concepts of international human resource management (HRM). It examines the internationalisation of firms, a range of comparative systems and structures of employment relations internationally, global stakeholders, human rights, and strategic management of global organisations. It includes analysis of issues including recruitment, training, management of expatriates, pay, and the impact of society, politics, economics and culture of host countries on human resource strategies.

61671.1 International Management

Credit Points 10 **Level** 3

Prerequisite

200571.1 Management Dynamics OR **MG102A.2** Management Foundations OR **61611.1** Management Studies OR **H1727.1** Business Management

Equivalent Units

200623 - International Management

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In 2008 this unit replaced by 200623 - International Management. In an era of ever increasing globalisation, it is essential that students of management are aware of salient global factors and issues that determine the process of applying management concepts and techniques in a multinational environment. This unit provides this

knowledge through an examination of topics such as: the nature of international management and emergence of the global economy; determinants of the international competitiveness of nations, agencies and firms (with a focus on the Australian Situation); the cultural/political/economic/financial dimensions of the international management environment; international law; dimensions of international business strategy; the internationalisation of the firm, and organisation and control of international operations.

200094.1 International Marketing

Credit Points 10 **Level** 3

Assumed Knowledge

Marketing principles including consumer/buyer behavioural concepts, business market dynamics, 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, statistics and general communications are also assumed.

Prerequisite

200083.1 Marketing Principles

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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. Globalisation in its many forms is a powerful driver of change. '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. This unit will examine the role of marketing research, international finance, overseas market entry and expansion strategies and the marketing mix in international markets. This unit provides students with a sound theoretical basis and, particularly, a practical understanding of how companies operate in international markets.

200374.2 International Marketing Research

Credit Points 10 **Level** 2

Assumed Knowledge

An understanding of the basic principles of marketing, international business and statistics

Prerequisite

200083.1 Marketing Principles AND **200032.1** Statistics for Business AND **200591.1** Introduction to International Business

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This unit aims to provide students with tools to undertake and critically evaluate simple international marketing research projects. It covers basic marketing research concepts and statistical techniques with emphasis on the impact of the international environment in conducting both primary and secondary data research.

300130.1 Internet Programming

Credit Points 10 **Level** 3

Assumed Knowledge

Basic knowledge on internet browsing and any object-oriented programming language.

Prerequisite

300027.1 Engineering Computing OR **300147.1** Object Oriented Programming OR **300156.1** Programming Principles 2 OR **300581.1** Programming Techniques

Equivalent Units

300246 - Internet Computing, 14020 - Object Oriented/Internet Programming

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This unit offers students basic concepts and latest technologies of internet programming and web-based application development. Utilising one of the popular internet programming languages, such as Java, it aims to develop the programming skills and methodologies required for both client-side and server-side programming as well as general purpose programming. The range of topics covered by the unit includes HTML, XML, Java applets, desktop application in Java, servlets, JavaServer Pages and JDBC.

300574.1 Internet Structures and Web Servers

Credit Points 10 **Level** 2

Assumed Knowledge

Fundamentals of computer networking and basic knowledge of web technology

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This unit seeks to develop an understanding of the structures of the Internet and the organization of the World Wide Web, and the basic skills in setting-up and maintaining Web servers, proxy servers, email servers, and Internet firewalls.

300778.1 Introduction to Anatomy

Credit Points 10 **Level** 1

Assumed Knowledge

Basic biology.

Equivalent Units

E1231 - Human Biology 1, 300319 - Introduction to Anatomy & Histology, 300752 - Introduction to Anatomy & Histology

Incompatible Units

300361 - Introduction to Human Biology, 400130 - Human Medical Sciences 1, 400256 - Human Medical Sciences 2, 400134 - Human Medical Sciences 3

Special Requirements

Because of space and resource limitations, this unit will be restricted to students in the following courses: 3577 Bachelor of Medical Science, 3657 Bachelor of Medical

Science/Bachelor of Information and Communications, 3589 Bachelor of Science (Forensic Science).

.....

This unit provides a basic understanding of human anatomy. It undertakes this by utilising a systems approach (in contrast to a regional approach), emphasising the special relationship between form and function.

300560.1 Introduction to Animal Science

Credit Points 10 **Level** 1

Equivalent Units

AG111A - Introduction to Equine Studies

Special Requirements

All activities in the unit involving live animals must be approved by the UWS Animal Care and Ethics Committee. All activities in the unit involving the use of animal specimens must be approved by the UWS Institutional Biosafety and Radiation Safety Committee.

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The aim of the unit is to give students an introduction to different areas of study within Animal Science. This unit gives the basic skills and knowledge base for further development in the program. The unit will include a balance of theoretical and practical work in the areas of classification, behaviour and handling, structure and locomotion, basic health care, feeding, reproduction and growth and development.

400882.1 Introduction to 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 - Biomechanics & Kinesiology

Special Requirements

Students must be enrolled in courses 4658 - Bachelor of Health Science (Sport and Exercise Science), 4661 - Bachelor of Health Science/Master of Podiatric Medicine and 4662 - Bachelor of Health Science/Master of Physiotherapy.

.....

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.

200184.2 Introduction to Business Law

Credit Points 10 **Level** 1

Corequisite

200336.1 Business Academic Skills

Equivalent Units

LW110A - Business Law, F1011 - The Australian Legal System, F1012 - Introduction to Business Law, 61511 - Introduction to Legal Principles

Special Requirements

External offerings for this unit are only available to students who are enrolled in a Property course or Property key program. Students in courses 2739 Bachelor of Business and Commerce and 2741 Bachelor of Business and Commerce (Advanced Business Leadership) must complete the co-requisite - 200336 - Business Academic Skills.

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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 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.

700004.1 Introduction to Business Law (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

200184 - Introduction to Business Law

Special Requirements

Students must be enrolled at UWS College.

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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 structure of the legal system, the way law is made, and legal problem solving. The main areas of law covered include contracts, torts consumer protection and agency.

101560.2 Introduction to Crime and Criminal Justice

Credit Points 10 **Level** 1

Equivalent Units

400680 - Crime and Criminal Justice

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The definition of particular social problems as crimes, how crime is measured and explained and who are identified as criminals or victims is not straightforward. This unit challenges the commonsense view that accepts at face

value that crime can be defined by criminal law or by a conceptual analysis of the harm done. With a discussion of fundamental elements of institutions and practices the unit examines how police, courts and corrections influence processes of criminalisation and victimisation and the societal context in which this occurs.

101559.2 Introduction to Criminology

Credit Points 10 **Level** 1

Equivalent Units

400681- Crime and Criminology

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This unit introduces major approaches within criminology offering explanations of the causes of crime, with consideration of the impact of such other fields as sociology and ethnography. Its scope ranges from classicism and positivism to the rise of social perspectives in the twentieth century including the Chicago school, strain theory, labelling, Marxism and left realism, feminism, governmentality, risk theory and critical criminology. Final consideration will be given to psychosocial approaches to crime, and the revival of free will and rationality in neo-liberal analyses. These traditions and perspectives will be illustrated by consideration of key research examples.

300232.1 Introduction to Earth Sciences

Credit Points 10 **Level** 1

Equivalent Units

14511 - Geology 1

.....

This unit covers the nature of the earth's surface and physical processes operating on it; properties and behaviour of the crust of the earth; mineral products, especially energy, metals and water; maps and geologic structures; and minerals, rocks, fossils. Two one-day field excursions are undertaken.

400750.2 Introduction to Health Breakdown

Credit Points 10 **Level** 1

Assumed Knowledge

Content equivalent to 400746 - Understanding Good Health

Equivalent Units

400051 - Nursing Science 4

.....

This unit introduces students to the concepts and mechanisms of health breakdown and their application to professional nursing practice.

300566.1 Introduction to Health Informatics

Credit Points 10 **Level** 2

Assumed Knowledge

Familiarity with use of common business software eg. Spreadsheets and database

.....

This unit introduces key concepts and skills required in the emerging Health Informatics domain including: Australian and International healthcare data representation and interchange standards; health care data modelling including patient journey modelling; overview of health information systems with a focus on decision support and clinical systems; telehealth and communication technologies; and electronic health records.

300361.2 Introduction to Human Biology

Credit Points 10 **Level** 1

Equivalent Units

400130 - Human Medical Sciences 1, 25009 - Physical and Biological Sciences 1, E1231 - Human Biology 1

Special Requirements

Closed footwear is required in the workshops.

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This unit gives a basic understanding of the human body and introduces the scientific and medical terminology used for anatomy, physiology and biochemistry. It deals with gross structure and microscopic structure of the human body. It also examines microbial organisms, their classification, how they differ from eukaryotic cells and how our body defends against them. Where appropriate, examples of functional diseases will be discussed.

700061.1 Introduction to Human Biology (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300361 - Introduction to Human Biology

Special Requirements

Students must be enrolled at UWS College

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This unit gives a basic understanding of the human body and introduces the scientific and medical terminology used for anatomy, physiology and biochemistry. It deals with gross structure and microscopic structure of the human body. It also examines microbial organisms, their classification, how they differ from eukaryotic cells and how our body defends against them. Where appropriate, examples of functional diseases will be discussed.

300753.1 Introduction to Human Physiology

Credit Points 10 **Level** 1

Equivalent Units

E1237 - Human Biology 2, BC206A - Human Physiology 2.2, 300320 - Introduction to Human Physiology

Incompatible Units

400130 - Human Medical Sciences 1, 400256 - Human Medical Sciences 2, 400134 - Human Medical Sciences 3

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This unit uses a body-systems approach to examine the physiology of tissues, organs and systems in order to develop an integrated view of the regulated functioning of

the human body. The unit concludes with a critical examination of the concept of homeostasis.

300134.1 Introduction to Information Technology

Credit Points 10 **Level** 1

Equivalent Units

B1582 - Introduction to Computers, J1742 - Computer Fundamentals, 61211 - Information Technology

Special Requirements

Permission required for students enrolled in course code 3562 Bachelor of Science (Advanced).

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This introductory unit gives students an insight into the history, structure, operations and uses of computers, and their impact on society. This will be complemented by hands-on use of computers and popular application software packages in a graphical user interface environment. Students gain a basic understanding of the uses of computers, and the skills necessary to use popular applications software, including word processing, spreadsheet and database packages, and Internet tools and services.

200591.1 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 with a focus on the Asian region. The first part of the unit covers the growth in the proportion of international business in world trade; the emergence of different types of organisations involved in international trade, including multinational corporations; the nature of international business strategy, planning and operations, including the growing role of electronic commerce; how international business differs from domestic business; and the interaction of international business with its environment, including ethical issues. The second part of the unit introduces some of the main features of the socio-economic environment of the countries of Asia, including social, cultural, political, legal and economic factors that affect business operations.

400244.1 Introduction to Leisure and Recreation Theory

Credit Points 10 **Level** 1

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This unit uses a multidisciplinary approach to explore the different meanings of leisure and recreation. It explores the social psychology of leisure and recreation in addition to the principles and processes of leisure education and leisure counselling. This unit provides the knowledge base that underpins the practical skills of leisure and recreation assessment, program planning and evaluation for a variety of client groups.

400776.2 Introduction to Nursing Practice

Credit Points 20 **Level** 1

Assumed Knowledge

Knowledge gained from a biological or arts/ behavioural science degree or a 3 year post secondary school, overseas registered nurse qualification.

Incompatible Units

400640 - Foundations of Nursing Practice, 400462 - Medical-Surgical Nursing Therapeutics

Special Requirements

Space restriction in relation to CPU's safety dealing with the public.

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This unit introduces the student to nursing concepts, principles and skills that identify, promote, maintain and support health and well being across the lifespan. Students will also acquire knowledge of nursing concepts and practices that support people who are affected by health breakdown. This introductory unit prepares students for entry into the second year of the Bachelor of Nursing 4642 degree course.

400160.2 Introduction to Occupational Therapy

Credit Points 10 **Level** 1

Special Requirements

This is a specialty unit offered as a compulsory core unit of the occupational therapy program. It is profession specific, preparing students to practice as an occupational therapist and not relevant as an elective for non-occupational therapy students. If students are visiting a NSW Health facility they will need to comply with the NSW Health Occupational Screening and Vaccination Against Infectious Diseases Policy.

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This unit introduces students to the profession of occupational therapy, conceptual foundations underpinning the profession, and areas of clinical practice. Students will learn about the important and unique contribution made by occupational therapists in people's lives to promote health and well-being. The important role of occupation in daily life will be discussed. In particular, this unit presents an overview of how occupational therapy reduces activity limitations people may have, and in doing so enhances the social participation for people of all ages and abilities. The problem solving process used by occupational therapists to assist clients will be introduced.

200042.2 Introduction to Operations Research

Credit Points 10 **Level** 2

Assumed Knowledge

HSC Mathematics or equivalent.

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This unit introduces the ideas of systems and their mathematical modelling, with special reference to the

allocation, inventory, scheduling, queuing and other processes taking place within social systems. It introduces modelling and heuristic problem solving techniques and goes on to introduce the standard techniques of linear programming, network analysis, critical path analysis, inventory control and simulation. Throughout, an emphasis is placed upon the mathematical development of algorithms and their computerisation.

400906.1 Introduction to Physiotherapy Practice

Credit Points 10 **Level** 1

Special Requirements

Students must be enrolled in course 4662 - Bachelor of Health Science/Master of Physiotherapy.

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This unit introduces students to the concept of physiotherapy as a profession and its scope of practice in Australia. It includes exploration of the roles and responsibilities of physiotherapists in the context of the changing health environment. Ethical issues and relevant legal and regulatory requirements will be discussed. In addition, students will be introduced to complexity of normal development, and its relation to human movement. Finally students will learn therapeutic techniques of soft tissue mobilisation. Unit material is presented to students in three blocks.

400905.1 Introduction to Podiatry

Credit Points 10 **Level** 1

Special Requirements

Podiatry specific - students will be participating in podiatry related knowledge and skills that apply to podiatric practice units and designed to be an integrated part of the suite of units where one unit builds upon the competencies that complement units in Year 2, 3 and 4.

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The broad aim of this unit is to introduce the work of podiatrists in health care and explain the important role of podiatric services in the community. Students will develop basic skills in dealing with professional and health issues. The focus will primarily be on areas designed to prepare students for incorporating the correct clinical protocols for infection control and to identify relevant clinical skills involving dermatology, functional anatomy, gait, cursory examinations and communication.

400137.1 Introduction to Research for Health Sciences

Credit Points 10 **Level** 1

Equivalent Units

E1235 - Research Methods in Health Care

Incompatible Units

63235 - Introduction to Social Research

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In 2010 this unit replaced by 400863 - Foundations of Research and Evidence-Based Practice. This unit lays down broad foundations of research as used in various

disciplines of health sciences, including health and well-being, physical fitness, physical activity, and nutrition. The aim is to create an overall understanding of the significance of research in the students' fields of endeavour. It is designed to introduce the student to foundational concepts and principles in quantitative and qualitative research methods and to explore the complementary role of research paradigms as they underpin the quest for knowledge in the health sciences. It will also address essential research themes such as epidemiology research, validity, reliability, and research ethics.

400164.1 Introduction to Sociology of Health

Credit Points 10 **Level** 2

Equivalent Units

E2231 - Social Dimensions of Health & Illness, 25006 - Introduction to Sociology of Health, 101336 - Introduction to Sociology

Incompatible Units

400781 - Dynamics of Health

In The aim of this unit is to offer students new understandings of people in their relations with each other in complex social and cultural contexts. The unit uses health and illness as the prism through which such understandings can be gleaned. The unit introduces students to sociological perspectives and it applies sociological ways of thinking to questions of health, illness and disability. Students will study the influence of culture and social institutions, and of social determinants such as class (socio-economic status), gender, race/ethnicity in shaping social relations and in the production of differing patterns of health and illness. The 'body' as a social and cultural construct, as well as a physical entity, will be explored, as will models of health and health care.

300733.1 Introduction to Structural Engineering

Credit Points 10 **Level** 2

Prerequisite

300040.1 Mechanics of Materials

Equivalent Units

85006 - Introduction to Structural Engineering

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

400136.1 Introduction to the Psychology of Health

Credit Points 10 **Level** 1

Equivalent Units

E2238 - Health & Human Behaviour

This unit introduces some of the core concepts, models, theories and methods of inquiry in psychology as they apply

to health. Assumptions of human behaviour are examined, showing how these assumptions form the four foundational models of psychology. Those models being psychobiological, learning, cognitive and social. The application of these models to issues of development, personality, motivation and clinical applications allows students to address health topics such as stress, resilience and coping, smoking, eating disorders, disability and health practices.

300425.2 Introduction to Wildlife Studies

Credit Points 10 **Level** 1

This unit will study the basic biology, ecology, conservation and management of selected terrestrial animals (amphibian, reptiles, birds and mammals) grouped according to their taxonomic affiliations. It will examine the various strategies used in the management of both wild roaming and captive reared animals including those propagated for human use. Students will learn the different management systems and research methods used in the conduct of wildlife research. The use of wildlife as a sustainable resource will be analysed within the context of ecological sustainable development and animal ethics.

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

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.

300613.1 Introductory Geochemistry: Earth, Resources and Environments

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Chemistry or equivalent.

Equivalent Units

14524 - Introductory Geochemistry: Earth, Resources and Environments

This unit covers rocks and minerals as chemical systems; acquisition, presentation and use (modelling) of geochemical data; chemical evolution of Earth's atmosphere and oceans; monitoring Earth's major and minor climatic events; land degradation; remote sensing and aerial photographic interpretation; chemical aspects of ore genesis; minerals and phase equilibria; transport and cycling of the elements.

300334.1 Invertebrate Biology

Credit Points 10 **Level** 3

Assumed Knowledge

An understanding of biology, especially invertebrates. An understanding of basic chemistry.

Equivalent Units

BI203A - Biology of Non-Plant Organisms

.....

This unit aims to build plant protection skills for students wishing to learn a detailed understanding of arthropods causing plant damage, their characteristics, physiology and behaviour, ecology and taxonomy.

200057.2 Investment Management

Credit Points 10 **Level** 3

Assumed Knowledge

200488 - Corporate Financial Management

.....

This unit describes the theory and practice of investment decision making. The general objective of the unit is to introduce students to the tools of financial decision making by providing a conceptual framework within which the key financial decision of investment can be analysed. The objectives of this unit are as follows: To provide an overview of the theory of investing in Australian Financial Markets: Equity Markets in Australia, Stock Exchange Trading, Taxation, Australian Debt Markets: Money and Bond Markets. International Investment Environment Foreign Exchange, Equity Debt and Property Market; To apply theoretical concepts of investing to practical applications; Evaluate Asset Allocation, Security selection and Security analysis in Australian Derivatives Markets, International Derivatives Market; Describe Equity Valuation Models, Macro and Industry Analysis of Share Markets; Futures and Forward Contracts. Characteristics of futures/ forwards; Analyse Qualitative and Quantitative Stock Selection; Be knowledgeable about Investor Preferences and Passive and Active Portfolio Management; Describe the risk-return trade-off and know the meaning of efficient markets.

300035.2 Kinematics and Kinetics of Machines

Credit Points 10 **Level** 2

Prerequisite

300463.1 Fundamentals of Mechanics AND **200237.1** Mathematics for Engineers 1

Equivalent Units

86222 - Engineering Mechanics 2

.....

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.

400752.2 Knowing Nursing

Credit Points 10 **Level** 1

Assumed Knowledge

400748 - Becoming a Nurse

Equivalent Units

400049 - Nursing Context 2

.....

This unit introduces students to further constructs that inform professional nursing and nursing practice related to health breakdown.

300656.1 Laboratory Quality Management

Credit Points 10 **Level** 3

Assumed Knowledge

A demonstrated understanding of and competence with laboratory techniques in analytical chemistry or microbiology, corresponding to successful completion of a Level 2 Microbiology or Analytical Chemistry unit.

Equivalent Units

SC301A - Laboratory Quality Management, BCT321 - Biological/Chemical Technology Practicum 6A, SSCB34 - Practicum 6 (NATA Registration)

.....

The unit is directed towards the accreditation of a laboratory for chemical, microbiological or forensic testing. Throughout their undergraduate studies, students will have acquired and developed a wide range of practical skills. Competency in the laboratory, however, encompasses much more than the ability to demonstrate a range of manipulative skills. This unit focuses upon the importance and coordination of good laboratory management, teamwork, calibration, record keeping and laboratory manuals. Students are required to develop, establish and operate a Laboratory Quality Management system designed for a specific class of chemical or microbiological test. The quality system is then subjected to a mock accreditation following the guidelines laid down by the National Association of Testing Authorities (NATA). Students will staff the laboratory system under evaluation while academic staff and visitors act as the assessors.

300624.1 Landuse and the Environment

Credit Points 10 **Level** 2

Equivalent Units

DN207A - Landuse and the Environment

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This unit will assist students develop a sound framework for the analysis of land use and its interactions with the environment. The skills gained will assist in evaluation of land use at various levels from household to international level. Particular emphasis will be placed on students gaining a sound conceptual framework from which to

examine sustainability at the environmental, economic, social, and production levels. Emphasis will be placed on the use of ecological footprinting as a tool.

200183.3 Law of Business Organisations

Credit Points 10 **Level** 2

Prerequisite

200184.2 Introduction to Business Law

Equivalent Units

LW208A - Law of Business Organisations, 61522 - Business Associations Law, F2066 - Business Associations Law

.....

This unit version replaces 200183.2 Law of Business Organisations from Autumn 2011. This unit deals with legal issues concerning the creation and control of companies and compares this structure with other forms of business organisations, such as partnership, trusts and sole traders. This unit will provide students with an appreciation of the law of partnership, and companies and, for the sake of completeness and comparison, a brief examination of the law regarding unincorporated and incorporated non-profit associations.

400766.2 Leadership in Graduate Practice

Credit Points 10 **Level** 3

Equivalent Units

400063 - Nursing Context 6

Special Requirements

Students must be enrolled in the Bachelor of Nursing OR Bachelor of Nursing (Graduate Entry).

.....

This unit introduces the student to the role of the professional nurse as leader and manager.

400849.1 Leadership in Graduate Practice (Advanced)

Credit Points 10 **Level** 3

Assumed Knowledge

Completion of all Year 1 and Year 2 Nursing units.
Completion of all Year 2 Bachelor of Nursing (Advanced) units

Incompatible Units

400766 - Leadership in Graduate Practice

Special Requirements

Restrictions on clinical practicum placements students must be enrolled in the Bachelor of Nursing (Advanced) and meet special requirements for safety and professional issues when dealing with the public. Special Requirements are those stipulated by the NSW Health and UWS. At present these include: • Prohibited Persons Employment Declaration (PPED) • Criminal Record Check (CRC) • Adult Health Immunisation • Workcover accredited Senior First Aid Certificate

This unit introduces the student to the role of the professional nurse as leader and manager. The unit provides opportunities to explore the role of the nurse as leader and manager of a team alongside medical students. The student will be provided with an opportunity to participate in a mentored relationship with appropriate School and College staff.

101259.2 Learning and Creativity

Credit Points 10 **Level** 2

Equivalent Units

SE111A - Learning and Creativity

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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. 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 emphasizes 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.

101117.1 Learning through Community Service

Credit Points 20 **Level** 3

Assumed Knowledge

Competence in various forms of communication, such as written, visual, or media-based, to underpin the preparation of a final report. The students need to be at third-year level, adept at working with others and capable of carrying out project work independently.

.....

Learning through Community Service is a 20 credit point unit in which students apply discipline-based knowledge as they carry out projects of substantial benefit to community agencies. The unit will run over a 6-month period (1H or 2H) and will include common symposium sessions, a 10-week placement in a community agency, an on-line learning system for student/team support, and a final report to the agency. Cohorts available in 2007.1H include International Student Social Support Networks; MMADD about the arts: Music, Media Arts, Dance and Drama in the Primary School; Students in Free Enterprise (SIFE); Community Language School Development; Video Production; Equity Buddies; Strategic Communications; Children and Technology; and Languages in Educational and Community Settings. Cohorts available in 2007.2H include MMADD about the arts: Music, Media Arts, Dance and Drama in the Primary School, Students in Free Enterprise (SIFE), Literacy, Practically Primary and Serving Children, Families and Professionals as Children Start School.

400789.2 Leisure Education Programming and Mental Health

Credit Points 10 **Level** 3

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In this unit students will explore leisure education that is used in a broad range of service industries that focus on the development and acquisition of a range of leisure, recreation and programming related skills, knowledge and attitudes. Students will develop a philosophical approach to leisure and recreation and skills in communication and facilitation strategies to enable them to use appropriate decision-making processes in developing recreation programs for a range of people across the lifespan. Students will utilise a variety of leisure, recreation and tourism resources to develop recreation programs that will assist in enhancing the lifestyle opportunities and leisure experiences for the client populations they serve.

200027.1 Linear Algebra

Credit Points 10 **Level** 2

Assumed Knowledge

Content of 200025 - Discrete Mathematics

Equivalent Units

J1730 - Mathematics 1.2, J2764 - Mathematics 2.1, 14501 - Mathematics 1, 14503 - Mathematics 3

.....

Objective of this unit is to present the main fundamentals of linear algebra and includes such topics as solving systems of linear equations, matrix algebra, determinants, eigenvalues and eigenvectors, Euclidean vector spaces, general vector spaces, inner product spaces and linear transformations.

300632.1 Living in Country

Credit Points 10 **Level** 2

Assumed Knowledge

Students will be expected to have some basic understanding of Indigenous culture and landscape values.

Prerequisite

300631.1 Indigenous Landscape

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This unit complements and builds on the content of unit 300631 Indigenous Landscape. It aims to integrate traditional Aboriginal ways of living in landscape into the undergraduate Bachelor of Natural Science program. Specifically, the unit explores how landscape has influenced Indigenous Australians in terms of their cultures, diet, water supply and shelter and how traditional Indigenous stewardship practices underpin the practice and principles of 'living off the land' and 'Caring for Country'. This unit adopts an ecological approach to the exploration of sustainable land use and the concept of self-sustaining systems.

400768.2 Maintaining Clinical Currency

Credit Points 10 **Level** 3

Assumed Knowledge

An understanding of the nature of health, principles and mechanisms involved in body function, principles of safe nursing practice including safe administration of medications and components of effective interpersonal communication.

Prerequisite

400064.1 Nursing Context 7

Equivalent Units

400619 Nursing Therapeutics 12

Special Requirements

Students must be in final session of course 4642. Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) Adult Health Immunisation 4) Workcover accredited Senior First Aid Certificate

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This unit provides students with the opportunity to review: the pathophysiological aspects of health breakdown in individuals; the knowledge of pharmacological processes within nursing practice; and to demonstrate competency in skills essential to the nursing management of individuals with various types of health breakdown. In addition, students will complete a four-week negotiated clinical practicum prior to graduate employment.

300459.1 Major Project Commencement

Credit Points 20 **Level** 4

Assumed Knowledge

Knowledge related to the successful completion of year 3 Industrial Design is assumed.

Prerequisite

300313.1 Design Studio 4: Simulate to Innovate AND **300314.1** Designed Inquiry

Corequisite

10915.1 Industrial Experience AND **300012.1** Design Management 1: Product Design Audit OR **300312.1** Industrial Graphics 4: Surface OR **86301.1** Automated Manufacturing

Special Requirements

Successful completion of 220 credit points.

.....

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,

field and practical research in order to find design opportunities for detailed development in the second semester of the fourth year program. Peer learning is an important part of the learning experience, as is a user-centred design research approach and is facilitated by an intensive off-campus field trip in the project start-up phase.

300460.1 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 and Major Project Commencement's co-requisite units.

Prerequisite

300459.1 Major Project Commencement

Corequisite

300013.1 Design Management 2: Corporate Image and Identity OR **300015.1** Design Management 4: Design Process OR **300315.1** Industrial Graphics 5: Integrated

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.

300536.1 Major Project in Construction

Credit Points 10 **Level** 4

Prerequisite

200485.1 Decision Making for Construction Professionals

Equivalent Units

BG402A - Major Project 1

This unit will enhance the ability of students to investigate a selected topic with a construction industry focus. The unit involves the preparation of a literature review, in consultation with an external supervisor from industry. Content: 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.

300408.1 Mammalian Cell Biology and Biotechnology

Credit Points 10 **Level** 3

Assumed Knowledge

First year biology and second year biochemistry units.

Prerequisite

300219.1 Biochemistry 1 OR **300555.1** Proteins and Genes

Equivalent Units

BI302A - Cell Biology, 300318 - Mammalian Cell Biology and Biotechnology

This unit deals with the molecular mechanisms within cells that co-operate to create a system that feeds, moves, responds to stimuli, grows and divides. The unit will initially build on existing knowledge of the properties that are common to most eukaryotic cells and that are necessary to an understanding of how any individual cells live, reproduce and form mammalian tissue.

300407.1 Mammalian Molecular Medicine

Credit Points 10 **Level** 3

Assumed Knowledge

Basic knowledge in plant, animal and microbial genetics and molecular biology.

This unit focuses on the science that is critical to our understanding of the basic biology, pathophysiology, diagnosis and treatment of acute and chronic diseases. This unit prepares students for future innovations in prevention, management and cure of catastrophic diseases, such as autoimmune diseases, fatigue illnesses, rheumatic diseases, cancer and infectious and genetic diseases.

200116.3 Management Accounting Fundamentals

Credit Points 10 **Level** 1

Prerequisite

200101.2 Accounting Information for Managers OR **200103.1** Accounting Reports and Decisions

Corequisite

200111.1 Financial Accounting Applications

This unit provides an introduction to management accounting in an e-commerce environment. The interrelations of management accounting to other functional areas, to suppliers, to customers, and to other sources of external information relevant to planning and control are examined. Topics include the development and logic of routine and non routine analysis performed to support management decision making.

200571.1 Management Dynamics

Credit Points 10 **Level** 1

Corequisite

200336.1 Business Academic Skills

Special Requirements

External offerings for this unit are only available to students who are enrolled in a Property course or Property key program.

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This unit provides an opportunity for students to engage with the dynamics of the management of organisations. Students will be introduced to the connection between the way work and systems are organised and managed and their impact on individuals and societies. This is achieved by using case based opportunities to examine real life contexts. This is an essential unit for business students that can be taken by any student needing a broad initial understanding of management.

700003.2 Management Dynamics (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

200571 - Management Dynamics

Special Requirements

Students must be enrolled at UWS College.

.....

The unit provides an opportunity for students to engage with the dynamics of the management of organisations. Students will be introduced to the connection between the way work and systems are organised and managed and their impact on individuals and societies. This is achieved by using case based opportunities to examine the real life contexts. This is an essential unit for business students that can be taken by any student needing a broad initial understanding of management.

MG102A.2 Management Foundations

Credit Points 10 **Level** 1

Special Requirements

Students must be enrolled in the Bachelor of Engineering, Bachelor of Construction Management, Bachelor of Technology, or Bachelor of Housing.

.....

Management Foundations provides an opportunity for students to understand the linkage between organisational processes and managerial practices. The main aim of the unit is to identify the dynamic nature of managerial practice in changing social, economic, technological and global environments. This unit is for students in the School of Engineering only.

300633.1 Management of Aquatic Environments

Credit Points 10 **Level** 1

Equivalent Units

EY104A - Management of Aquatic Environments

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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.

200570.2 Management of Change

Credit Points 10 **Level** 3

Equivalent Units

H3741 - Management of Change

.....

This unit introduces the concepts of organisational change, the need to manage change as a change agent and how to develop and optimise change models and schemes. In this unit we encourage you to consider the world from different perspectives. We wish you to challenge your own ways of learning and to try to include more reflection in the work that you do. The unit will be driven by theory as well as practice and will need you to read conflicting viewpoints in order to understand the complexity of the relationships we are discussing.

200528.1 Management of Projects

Credit Points 10 **Level** 2

Assumed Knowledge

Students are expected to have gained an introductory level of knowledge in operations and supply chain management.

Equivalent Units

61654 - Facilities Location and Project Management, 61823 - Business Modelling

.....

Management of Projects introduces students to the role of projects in organizations and the associated issues in managing projects, including the management of project teams and project lifecycles. While project management is well understood in areas such as construction and information systems, this unit also covers its use in other business applications, such as product development, advertising and promotional campaigns, organizational change and the implementation of corporate strategy. The use of cases, simulations and other exercises allows students to gain a realistic appreciation of the issues involved in managing projects. A range of project management tools and techniques are demonstrated through these case studies.

200376.1 Managing and Developing Careers

Credit Points 10 **Level** 2

Assumed Knowledge

A basic knowledge of employment relations principles and processes as presented in Managing People at Work

Prerequisite

200300.1 Managing People at Work

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Managing and Developing Careers is an introductory unit designed to identify the determinants of the process of career management and analyse the roles of key stakeholders in this process including employers, unions, employees, government and societal groups. This unit will

explain the nature and process of career management using a stakeholder focus. In achieving these goals, this unit will evaluate the different approaches to career management and relate such approaches to contemporary issues in the field of career management

200150.1 Managing Diversity

Credit Points 10 **Level** 3

Prerequisite

200300.1 Managing People at Work

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Diversity in the workplace has come to refer to those groups most likely to be affected by the homogeneous and normative assumptions of traditional employment systems. While race, gender and religion are the most recognised forms of diversity it has also come to refer to the needs of other groups such as the disabled, the aged and those disadvantaged because of family obligations. The management of diversity is concerned with addressing the needs of such groups in ways that are equitable and organisationally sustainable. This has become increasingly important in a pluralistic society.

200175.4 Managing Human Resources and Industrial Relations

Credit Points 10 **Level** 3

Prerequisite

200300.1 Managing People at Work

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This unit integrates the study of strategic theory and practice in the management of human resource management and industrial relations as they co-exist together in the employment relations model. The dynamic contemporary environment influencing strategic planning of business, human resource and industrial relations is analysed. Models of strategic choice theory, strategic planning, human resource management and industrial relations strategy are used to examine the strategy in employment relations. The application of ethics and standards at work in the development and implementation and evaluation of strategy is examined. Students undertaking this unit are required to participate in a HR Simulation exercise that explores the realities of employment relations in practice.

200300.1 Managing People at Work

Credit Points 10 **Level** 1

Equivalent Units

200151 - Management of Employment Relations, 61428 - Introductory Employment Relations, 61411 - Australian Employment Relations

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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.

200273.3 Managing Service and Experience

Credit Points 10 **Level** 2

Equivalent Units

200564 - Introduction to Sport Management, 400319 - Sport Management 1

.....

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 & service improvement.

200709.1 Managing the Accommodation Experience

Credit Points 10 **Level** 2

Assumed Knowledge

Students are expected to have gained an introductory level of knowledge in hospitality management.

Equivalent Units

200144 - Lodging Management

.....

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.

200710.1 Managing the Food and Beverage Experience

Credit Points 10 **Level** 2

Assumed Knowledge

Students are expected to have gained an introductory level of knowledge in hospitality management.

Equivalent Units

200145 - Food Service Systems

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The provision of Food and Beverage is a key component of the hospitality industry and is a prominent feature of the experience economy. 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 & beverage in society. A systems approach to food and beverage service management is then utilized to understanding the delivery of a food and beverage experience.

200086.2 Marketing Communications

Credit Points 10 **Level** 2

Assumed Knowledge

Basic principles of marketing

Prerequisite

200083.1 Marketing Principles

.....

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 coordinating major elements of the communication mix – advertising, sales promotions, personal selling, sponsorship marketing, public relations, direct marketing, and point of purchase material.

200090.2 Marketing of Services

Credit Points 10 **Level** 3

Assumed Knowledge

An advanced understanding of Marketing theory and practice

Prerequisite

200083.1 Marketing Principles

Equivalent Units

MK319A - Services Marketing, 61726 - Services Marketing

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Given the service-based nature of modern economies, 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. Therefore, increasingly, knowledge and skills in the field of marketing of services are required by personnel operating across various industries and in a range of roles. The unit aims to: expose students to relevant theory and practice in the field of services marketing; develop participants into more complete marketers capable of operating in service marketing environments.

200096.2 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

200083.1 Marketing Principles

Equivalent Units

61734 - Marketing Project, MK311A - Marketing Planning Project

.....

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.

200083.1 Marketing Principles

Credit Points 10 **Level** 1

Equivalent Units

61711 - Marketing Principles, H2808 - Principles of Marketing, MK104A - Marketing Fundamentals

Special Requirements

External offerings for this unit are only available to students who are enrolled in either a Property course or a Property Key Program in 2739 - Bachelor of Business and Commerce.

.....

This unit is a survey of the marketing process, introducing students to the marketing concept, strategic and marketing planning, marketing research, consumer and customer behaviour, issues of market segmentation, targeting and positioning as well as all the elements of the marketing mix (product/service, pricing, distribution and marketing communication strategies).

200592.1 Marketing Research

Credit Points 10 **Level** 2

Assumed Knowledge

Basic principles of marketing, consumer behaviour and statistics.

Prerequisite

200032.1 Statistics for Business AND **200083.1** Marketing Principles

Equivalent Units

200085 - Fundamentals of Marketing Research

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 rather than applied research application, which is the focus of a later unit. Students gain exposure to concepts such as research design, information collection, data processing and analysis and results communication. Students gain exposure to qualitative and quantitative techniques with an appreciation of the role of computer processing in marketing research.

200472.2 Material Science in Construction

Credit Points 10 **Level** 2

Assumed Knowledge

Contents covered in Building 1.

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.

200024.1 Mathematical Finance

Credit Points 10 **Level** 3

Prerequisite

- 200026.1** Advanced Mathematics for Business OR
- 200030.1** Differential Equations

The first section of the unit covers the idea of hedging and pricing by arbitrage in the discrete-time setting of binary trees. The key probabilistic concepts of conditional expectation, martingales, change of measure and representation are introduced in a simple framework. The second (and main) part of the unit concentrates on classical Black-Scholes analysis, assuming a lognormal random walk for asset prices. Ito's lemma and simple arbitrage arguments are used to derive the Black-Scholes partial differential equation for the fair value of an option. A variety of different kinds of options are considered and it is shown how, by suitably selecting boundary and final conditions for the Black-Scholes equation, virtually all derivative securities may be valued in a Black-Scholes framework. The unit concludes with a variety of 'exotic options': digital, pay-later, gap options and American options and the free boundary value problems. The link between the existence of equivalent martingale measures and the ability to price and hedge is formalised.

200022.2 Mathematical Modelling

Credit Points 10 **Level** 3

Prerequisite

- 200030.1** Differential Equations

Equivalent Units

- 14336 - Mathematical Modelling 1, J3674 - Mathematical Modelling, 14407 - Differential Equations Modelling

Mathematical Modelling concentrates on the solution of some mathematical problems that are suitable for interpretation in a deterministic manner. Selected real-world problems are approximated by mathematical models that are amenable to being written in terms of linear and non-linear equations and ordinary differential equations. In some instances analytic solutions are obtained, while in others computer programs provide numerical results. In either situation, there is emphasis on interpreting models, modifying them as required and using them for prediction.

300691.1 Mathematical Reasoning

Credit Points 10 **Level** 1

Equivalent Units

- 300589 - Mathematics Toolbox

Special Requirements

Only students enrolled in a Science / Computing / Business degree course should enrol in this unit and this enrolment must take place in their first year of study. Students may not concurrently enrol in Mathematical Reasoning and any other mathematics / statistics unit. Due to the requirements above, permission is required to enrol in this unit. 300691 Mathematical Reasoning is incompatible with the following units: DN206A Planning Research Methods, 200022 Mathematical Modelling, 200023 Analysis, 200024 Mathematical Finance, 200025 Discrete Mathematics, 200026 Advanced Maths for Business, 200034 Statistical Theory, 200036 Data Mining & Visualisation, 200037 Regression Analysis & Experimental Design, 200038 Time Series & Forecasting, 200041 Applied Regression and Forecasting, 200042 Introduction to Operations Research, 200237 Mathematics for Engineers 1, 200238 Mathematics for Engineers 2, 200242 Mathematics for Engineers 3, 200424 Statistics for Accountants, 200027 Linear Algebra, 200028 Advanced Calculus, 200030 Differential Equations, 200031 Mathematics for Business, 200032 Statistics for Business, 200033 Applied Statistics, 200045 Quantitative Project, 200182 Quantitative Techniques, 200189 Concepts of Mathematics, 200192 Fundamentals of Mathematics, 200192 Statistics for Science, 200193 Abstract Algebra, 200263 Biometry.

This unit will cover basic mathematical concepts, such as algebraic, graphical, trigonometric and arithmetic skills that are needed in a variety of contexts. In any one semester, six areas of content will be considered from the following - Basic Numerical Operations, Basic Algebraic Operations, Functions and Graphs, Linear Equations, Quadratic Equations and Quadratic Functions, Basic Trigonometry, Financial Mathematics and Basic Statistics. In addition to the mathematical content, students will be exposed to strategies that will help them to learn to study mathematics effectively and also to lessen any mathematical anxiety problems that they may experience.

700044.1 Mathematics (UWSCFS)

Credit Points 10 **Level** Z

Special Requirements

Students must be enrolled at UWS College.

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The Mathematics unit is designed and written to prepare students for further mathematical study at first year university level. It provides a comprehensive introduction to the study of calculus and its applications in the real world. The unit develops those skills peculiar to the mathematical requirements of further study in the areas of Business, Computing, Information Technology, Science and Engineering.

300672.1 Mathematics 1A

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics achieved at band 4, 5 or 6 or equivalent, or 200191 Fundamentals of Mathematics

Equivalent Units

200189 - Concepts of Mathematics

Special Requirements

This unit is not available to students enrolled in 3621 Bachelor of Engineering.

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This level one hundred unit provides a solid foundation in the theory and applications of differential calculus, as well as some introductory work on complex numbers. It is the first of two units developing aspects of calculus.

300673.1 Mathematics 1B

Credit Points 10 **Level** 1

Prerequisite

[300672.1](#) Mathematics 1A

Equivalent Units

200189 Concepts of Mathematics

Special Requirements

This unit is not available to students enrolled in 3621 Bachelor of Engineering.

.....

This Level 1 unit provides a solid foundation in the theory and applications of integral calculus, as well as some introductory work on linear algebra and infinite sequences and series. It is the second of two units developing aspects of calculus.

700069.1 Mathematics B (UWSCFS)

Credit Points 10 **Level** Z

Assumed Knowledge

Completion of Year 10 Mathematics or equivalent.

Equivalent Units

900033 - Mathematics B

Special Requirements

Students must be enrolled at UWS College.

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The Mathematics B course is designed and written to prepare students for further mathematical study at first year university level in courses that do not demand an in-depth study of Calculus.

700025.1 Mathematics C (UWSCFS)

Credit Points 10 **Level** Z

Special Requirements

Students must be enrolled at UWS College.

.....

The Mathematics C unit is designed and written to prepare students for mathematical study at first year university level, specifically in the area of Engineering. It provides a comprehensive introduction to the study of calculus and its applications in the real world.

200237.2 Mathematics for Engineers 1

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics achieved at band 5 or 6. This is the minimum requirement.

Equivalent Units

14505 - Engineering Mathematics 1, 200195 - Mathematical Methods A, 200196 - Mathematical Methods B

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.

700019.2 Mathematics for Engineers 1 (UWSC)

Credit Points 10 **Level** 1

Prerequisite

[700025.1](#) Mathematics C (UWSCFS)

Equivalent Units

200237 - Mathematics For Engineers 1

Incompatible Units

300672 - Mathematics 1A, 300673 - Mathematics 1B,
200191 - Fundamentals of Mathematics, 300743 -
Mathematics for Engineers Preliminary

Special Requirements

Students must be enrolled at UWS College, unless specific permission has been granted by the School of Engineering.

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This unit is the first 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 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.

200238.1 Mathematics for Engineers 2

Credit Points 10 **Level** 1

Prerequisite

200237.1 Mathematics for Engineers 1

Equivalent Units

14506 - Engineering Mathematics 2

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This is a Level 1 unit to be undertaken by students enrolled in an Engineering degree. It covers the following topics: Ordinary Differential Equations and Multivariable Calculus.

700022.1 Mathematics for Engineers 2 (UWSC)

Credit Points 10 **Level** 1

Prerequisite

700019.1 Mathematics for Engineers 1 (UWSC)

Equivalent Units

200238 - Mathematics for Engineers 2

Special Requirements

Students must be enrolled at UWS College.

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This is a Level 1 unit to be undertaken by students enrolled in an Engineering Diploma. It covers the following topics: Ordinary Differential Equations and Multivariable Calculus.

200242.2 Mathematics for Engineers 3

Credit Points 10 **Level** 2

Prerequisite

200238.1 Mathematics for Engineers 2 OR **14506.1** Engineering Mathematics 2

Equivalent Units

200194 - Engineering Mathematics 3

Special Requirements

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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This 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.

200413.2 Mathematics Honours Thesis

Credit Points 40 **Level** 5

Special Requirements

Restriction to students enrolled in a Bachelors honours course. understanding and knowledge equivalent an undergraduate BSc (Mathematics) Degree or key program in Mathematics/Statistics is required. normally the student will have a grade point average > 5 unless a case can be made.

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The aim of this unit is to further develop the student's research and problem solving skills. The student is required to implement the research plan, complete a substantive piece of research in the field of Mathematics/Statistics, and to communicate the results of that work to an interested and technically literate audience. All projects will therefore contain at least two broad areas of assessment: the substantive work itself, and the oral and written communication of the work to others. All assessment components submitted in both of these areas are expected to be of a high professional standard. Students will present their research in the thesis. The thesis topic and structure will vary according to the area of interest of the student and the expertise of the supervisor. Throughout this unit regular planned consultations between the student and supervisor will occur. Students are expected to work to a schedule devised in consultation with their supervisor. The schedule will include set dates for the presentation of draft chapters for review by the supervisor.

300764.1 Mechanical Design

Credit Points 10 **Level** 3

Assumed Knowledge

This subject assumes that the student has undertaken the first and second year studies in UWS 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.

300040.1 Mechanics of Materials

Credit Points 10 **Level** 2

Prerequisite

300463.1 Fundamentals of Mechanics

Equivalent Units

300039 - Mechanics and Materials

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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.

300487.1 Mechatronic Design

Credit Points 10 **Level** 3

Assumed Knowledge

Understanding of statics and mechanics of materials.

Prerequisite

300040.1 Mechanics of Materials

Equivalent Units

300041 - Mechatronic Design 1, 300042 - Mechatronic Design 2

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The aim of the unit is to integrate the basic 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 such machine elements as bearings, brakes, clutches, belt drives and shaft and motor systems is the intended outcome of undertaking this unit and project based tasks will form part of the learning process and team work experience.

300233.1 Medical Microbiology

Credit Points 10 **Level** 3

Assumed Knowledge

A knowledge in microbiology equivalent to the successful completion of Microbiology 1.

Prerequisite

300300.1 Microbiology 1 AND **300321.1** Microbiology 2

Equivalent Units

J3814 - Medical Microbiology, MI308A - Medical Microbiology, 300749 - Medical Microbiology

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This unit is being replaced by unit code 300749 in 2010. This unit has a modern approach to the study of the interaction between the human host, micro-organisms and parasites. Students will embark on a journey into the world of pathogenic micro-organisms exploring the molecular mechanisms by which these override host defences leading to disease. Topics include: Non-specific and specific defences (immune system) of the human body. Host-parasite interaction and pathogenesis of disease. Types of infection and epidemiology. Infectious diseases of the human body systems and associated aetiological agents. This will be supported with laboratory experience representing modern laboratory diagnostic procedures including molecular biology for the identification of infectious disease agents and how this information is applied to epidemiology.

300749.1 Medical Microbiology

Credit Points 10 **Level** 3

Assumed Knowledge

A knowledge in microbiology equivalent to the successful completion of Microbiology 1.

Prerequisite

300300.1 Microbiology 1 AND **300321.1** Microbiology 2

Equivalent Units

J3814 - Medical Microbiology, MI308A - Medical Microbiology, 300233 - Medical Microbiology

.....

This unit has a modern approach to the study of the interaction between the human host, micro-organisms and parasites. Students will embark on a journey into the world of pathogenic micro-organisms exploring the molecular mechanisms by which these override host defences leading to disease. Topics include: Non-specific and specific defences (immune system) of the human body. Host-parasite interaction and pathogenesis of disease. Types of infection and epidemiology. Infectious diseases of the human body systems and associated aetiological agents. This will be supported with laboratory experience representing modern laboratory diagnostic procedures including molecular biology for the identification of infectious disease agents and how this information is applied to epidemiology.

400813.1 Medical Research Project

Credit Points 60 **Level** 3

Assumed Knowledge

Knowledge from successful completion of years 1 and 2 of the Bachelor of Medicine, Bachelor of Surgery

Prerequisite

400737.1 Scientific Basis of Medicine 1 AND **400738.1** Health Practice 1 AND **400739.1** Scientific Basis of Medicine 2 AND **400740.1** Health Practice 2

Corequisite

300411.2 Research Methodology and Experimental Design OR **400148.1** Quantitative Research AND **400137.1** Introduction to Research for Health Sciences

Special Requirements

If any clinical work is to be undertaken as part of the research project, the students will need to continue to meet the same requirements for immunisation and child protection as for all other students in the medical course.

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This unit is the principal component in the Bachelor of Medical Research. It aims to give students, enrolled in the UWS MBBS, the opportunity to develop their critical thinking and gain a more detailed experience in medical research than is provided in the medical course. It consists of a research project in any area of medical research for which the School can provide suitable supervision. Students will study the relevant literature, develop and conduct the program of research with the assistance of their supervisor, take part in research seminars in their research group, and present the results as a dissertation.

400825.2 Medical Surgical Nursing 2 (Advanced)

Credit Points 10 **Level** 2

Assumed Knowledge

Completion of all Year 1 Bachelor of Nursing Units
Completion of all Year 2 Bachelor of Nursing (Advanced) Units
Completion of all Autumn Year 2 Bachelor of Nursing Units

Prerequisite

400749.1 Nursing and Health Breakdown OR **400776.1** Introduction to Nursing Practice

Corequisite

400758.1 Alterations in Breathing, Sexuality, Work/Leisure and Mobility

Incompatible Units

400757 - Medical-Surgical Nursing 2

Special Requirements

Students must be enrolled in course 4648 - Bachelor of Nursing (Advanced). To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) provide evidence of compliance with the occupational screening and immunisation policy of NSW Health 4) possess a current WorkCover Authority approved First Aid Certificate.

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This unit will elaborate on professional nursing concepts and practices that promote maintain and support people who are experiencing health breakdown affecting breathing, work/leisure, sexuality and mobility. This unit will

enable the student to undertake an advanced health assessment and develop advanced clinical reasoning and decision making skills to link theory and practice.

400753.3 Medical-Surgical Nursing 1

Credit Points 10 **Level** 2

Assumed Knowledge

Content and achievement of learning outcomes derived from Year One nursing units.

Prerequisite

400749.1 Nursing and Health Breakdown OR **400776.1** Introduction to Nursing Practice

Corequisite

400814.1 Alterations in Nutrition, Elimination and Sexuality

Incompatible Units

400058 - Nursing Therapeutics 6, 400059 - Nursing Therapeutics 7, 400642 - Medical-Surgical Nursing Therapeutics

Special Requirements

Restrictions on clinical practicum placements (students must be enrolled in the Bachelor of Nursing and have met Special Requirements), safety and professional issues dealing with public. Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) Adult Health Immunisation 4) Workcover accredited Senior First Aid Certificate.

.....

This unit will elaborate on professional nursing concepts and practices that promote, maintain and support people who are experiencing health breakdown affecting eating, drinking, nutrition and elimination.

400757.3 Medical-Surgical Nursing 2

Credit Points 10 **Level** 2

Assumed Knowledge

Achievement of learning outcomes related to Year One nursing units as well as Medical Surgical Nursing 1 and Alterations in Nutrition Elimination and Sexuality units offered in Autumn Year 2 of the Bachelor of Nursing.

Prerequisite

400749.1 Nursing and Health Breakdown OR **400776.1** Introduction to Nursing Practice

Corequisite

400815.1 Alterations in Breathing, Work/Leisure and Mobility

Incompatible Units

400055 Nursing Therapeutics 4

Special Requirements

Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) Adult Health Immunisation 4) Workcover accredited Senior First Aid Certificate

.....

This unit will elaborate on professional nursing concepts and practices that promote, maintain and support people who are experiencing health breakdown affecting breathing, work/leisure, sexuality and mobility.

300550.1 Medicinal Chemistry

Credit Points 10 **Level** 1

Equivalent Units

300225 - Chemistry 2, J1574 - Organic Chemistry 1

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Students studying at Hawkesbury or Parramatta campus should refer to 300225 - Chemistry 2. This unit uses medicinal chemistry to continue the development of students' understanding of the basic foundations of chemistry begun in Principles of Chemistry. The unit focuses on introductory chemical and pharmacological kinetics, introduces coordination compounds such as haemoglobin, and goes on to an in-depth treatment of the structure, reactivity and nomenclature of the principal organic functional groups. These are discussed in the context of their role in life, medicine and disease. The unit provides a necessary foundation for subsequent studies in chemistry, biochemistry, and related areas.

400759.3 Mental Health Nursing 1

Credit Points 10 **Level** 2

Assumed Knowledge

Content and achievement of learning outcomes for Year One Bachelor of Nursing units in the 4642, 4643 or 4648 Bachelor of Nursing courses.

Prerequisite

400749.1 Nursing and Health Breakdown OR **400776.1** Introduction to Nursing Practice OR **400640.2** Foundations of Nursing Therapeutics

Equivalent Units

400054 - Nursing Therapeutics 3

Special Requirements

There are considerable restrictions on the availability of clinical practicum placements so students must be enrolled in one of the Bachelor of Nursing courses, 4642, 4643 or 4648, and must have met Special Requirements for these courses. This enrolment requirement is a risk management strategy to ensure that enrolled students are able to satisfy safety and professional issues when dealing with public. Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Special

Requirements are those stipulated by the NSW Health and UWS. At present these include: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) Adult Health Immunisation 4) Workcover accredited Senior First Aid Certificate

.....

This unit will extend the students understanding of the relationships between stress, adaptation, mental health and the person's capacity to function in everyday life and the implications for professional nursing practice.

400762.2 Mental Health Nursing 2

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge and skills relating to 400759 - Mental Health Nursing 1.

Prerequisite

400759.1 Mental Health Nursing 1

Equivalent Units

400066 - Nursing Therapeutics 11

Special Requirements

Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) Adult Health Immunisation 4) Workcover accredited Senior First Aid Certificate

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This unit will elaborate the mechanisms of health breakdown and their application to professional nursing practice in supporting people who are affected by serious mental health breakdown.

300300.1 Microbiology 1

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of introductory biology, including an understanding of the diversity of living organisms and basic concepts of cell structure and function.

Prerequisite

300221.1 Biology 1 OR **300222.1** Biology 2 OR **300539.1** Biodiversity OR **300543.1** Cell Biology

Equivalent Units

14434 - Microbiology 1, BI106A - Biological Sciences, J2029 - Basic Microbiology, MI201A - Microbiology 2.1 (V1)

Incompatible Units

300331 - General Microbiology

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Microorganisms are important in all aspects of our lives. In this unit students will explore the diversity of microorganisms and their significance in the environment, in foods and industry as well as in health and disease. Students will be introduced to the structure, reproduction, classification, cultivation and enumeration of bacteria, viruses and fungi. The conditions required for growth and survival of microorganisms will be studied as well as physical and chemical methods of control. Students will conduct laboratory exercises designed to develop their skills in culturing and observing microorganisms.

300321.1 Microbiology 2

Credit Points 10 **Level** 2

Assumed Knowledge

For safety reasons it is essential that students understand and are competent in the practice of aseptic technique in basic microbiological techniques. These skills are developed in Microbiology 1 and General Microbiology. These units, together with Biochemistry 1, also provide the foundation knowledge necessary for studying the metabolic diversity of microorganisms, molecular systematics and microbial genetics, the major themes of Microbiology 2. Relevant topics in Biochemistry 1 or General Biochemistry include structure and function of enzymes, protein synthesis, structure and function of nucleic acids. The introductory microbiology units provide essential knowledge of the major groups of microorganisms and the conditions required for their growth and survival.

Corequisite

300331.1 General Microbiology OR **300300.1** Microbiology 1 AND **300219.1** Biochemistry 1 OR **300227.1** General Biochemistry OR **300555.1** Proteins and Genes

Equivalent Units

14443 - Microbiology 2, J2028 - Microbial Physiology and Genetics, MI202A - Microbiology 2.2

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This unit discusses the origins of genetic variation in prokaryotes and explores the structure and metabolic diversity of microorganisms from a variety of habitats including extreme environments. Studies of the biochemistry of prokaryotes focus on metabolic strategies for energy generation and growth in various natural environments. Students are introduced to the applications of microbial metabolism in food, wine and other industries. The principles of classification and identification of bacteria and yeasts are developed. This includes an introduction to molecular systematics and its impact on the classification of living organisms and in areas such as molecular diagnostics and epidemiology. The unit also addresses the principles and applications of recombinant DNA techniques in biotechnology and in the study of microbial physiology and genetics. Laboratory classes introduce students to techniques used to study microbial identification, physiology and genetics.

300044.1 Microcontrollers and PLCs

Credit Points 10 **Level** 2

Prerequisite

300025.1 Electronics

Equivalent Units

86402 - Microprocessor Applications in Mechanical Engineering, 89025 - Computers in Real Time Control

.....

The aim of this unit is for students to develop an understanding of the hardware, architecture and the assembly language of microcontrollers and to control 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. It uses an Omron PLC to control a factory represented by four pneumatic cylinders. After covering the Ladder Logic programming language, it moves on to cover sequential programming and numerical manipulation using PLCs.

300076.2 Microprocessor Systems

Credit Points 10 **Level** 2

Prerequisite

300018.1 Digital Systems 1

Equivalent Units

84137 - Microprocessor Systems

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This unit introduces students to the internal structure of microprocessors and its fundamental operations. Topics include assembly language programming, interrupt processing, CPU functions, memory organization, and peripheral programming. Intel 8088 microprocessor will be discussed in great detail. Embedded processor will also be covered.

300043.2 Mobile Robotics

Credit Points 10 **Level** 4

Prerequisite

300463.1 Fundamentals of Mechanics

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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.

300551.1 Molecular Basis of Disease

Credit Points 10 **Level** 3

Assumed Knowledge

The content of Human Molecular Biology, i.e. knowledge of the molecular biology of eukaryotic cells and gene regulation at an advanced level, and processes and practical applications of DNA technology including DNA

manipulation using restriction enzymes, PCR, DNA fingerprinting, Northern blotting, cloning vectors, DNA libraries and genetic engineering in different types of eukaryotic cell. Introductory functional genomics and bioinformatics.

Prerequisite

300555.1 Proteins and Genes OR **300219.1** Biochemistry 1

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This unit builds on the molecular biology studied in second and third year, equipping students with detailed knowledge of the molecular basis of disease. Studying the molecular basis integrates many previously learned scientific principles in molecular biology and functional genomics into the context of disease.

300234.2 Molecular Biology

Credit Points 10 **Level** 3

Assumed Knowledge

Molecular Biology builds on pre-existing knowledge of DNA, gene and chromosome structure in prokaryotes and eukaryotes; the basic events in prokaryotic and eukaryotic transcription, including the role and structure of RNA polymerase; the differences between transcription in prokaryotes and eukaryotes; post-transcriptional events in eukaryotes and their purpose; the basic events in prokaryotic translation and how these differ in eukaryotes; protein structure and conformation, and the importance of post-translational modifications for protein function.

Prerequisite

300219.2 Biochemistry 1 OR **300555.1** Proteins and Genes

Equivalent Units

14439 - Cell and Molecular Biology, 300549 - Human Molecular Biology, B1305A - Molecular Biology, J3678 - Molecular Genetics

.....

The unit Molecular Biology covers gene expression and regulation at an advanced level, and students will develop an understanding of the processes and practical applications of DNA technology. Students will gain a thorough grounding in major techniques such as PCR, DNA sequencing, DNA fingerprinting, restriction mapping, hybridisation techniques, gene cloning as well as the use of cloning vectors, DNA libraries, genetic engineering in different types of cells and organisms and functional genomics. Students will also be introduced to bioinformatics and issues in biosafety and ethics relating to gene technology.

300757.1 Molecular Biology of the Immune System

Credit Points 10 **Level** 3

Assumed Knowledge

A sound knowledge of cell structure, protein structure, gene expression, protein synthesis, protein secretion and protein degradation. Some understanding of cell signalling pathways would be an advantage.

Prerequisite

300219.1 Biochemistry 1 OR **300555.1** Proteins and Genes

Equivalent Units

300552 - Molecular Biology of the Immune System

Incompatible Units

300223 - Cell Signalling and Molecular Immunology, J3830 - Immunology and Cell Signalling

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The immune system relies on a complex interplay between cells, receptors and signalling molecules for its effective operation. Antibody- and cell-mediated immune responses will be examined from a molecular and biochemical perspective. Topics include B- and T-cell receptor gene expression, antibody structure, function, maturation; MHC genes and proteins; differentiation and activation of B and T cells; antigen processing and presentation; the roles of cytokines. The relevance of this knowledge for understanding disorders of the immune system will be emphasised throughout. Medical and diagnostic applications of hybridoma technology, antibody engineering and advances in vaccine development will be discussed. The laboratory course will develop technical and interpretative skills in relevant techniques.

300475.1 Molecular Pharmacokinetics

Credit Points 10 **Level** 3

Assumed Knowledge

Medicinal Chemistry

Prerequisite

300236.1 Physical Chemistry 2 OR **300540.1** Biomolecular Dynamics

Equivalent Units

300303 - Physical Chemistry 3

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This unit investigates the mechanisms and pathways of degradation of introduced compounds within the body and of their removal from the body; the relationship between chemical structure and stability of compounds within the body, including quantitative structure-stability relationships; the physical, metabolic and chemical stability within the body of representatives of each of the major types of drug class, relating this stability to molecular structure; the influence of the stability of drug compounds within the body upon the choice of drug delivery system used.

300557.1 Molecular Spectroscopy

Credit Points 10 **Level** 3

Prerequisite

300230.1 Inorganic Chemistry 2 OR **300545.1** Coordination Chemistry OR **300301.1** Organic Chemistry 2 OR **300553.1** Molecules of Life: Synthesis and Reactivity

Equivalent Units

300216 - Advanced Spectroscopy

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This unit builds upon an understanding of the fundamental physical processes involved in the interaction of electromagnetic radiation of various energies with matter, and develops into analysis of spectroscopic data for

structure elucidation, as an analytical technique and for monitoring chemical and biochemical processes. The relevance of these processes and techniques to all other areas of science, particularly chemistry and biology, is emphasised. Spectroscopic methods include advanced NMR spectroscopy, ESR spectroscopy, electronic and visible spectroscopy and mass spectrometry. Whilst some basic spectroscopy is taught in a number of other chemistry units, this subject goes to a substantially deeper level.

300553.1 Molecules of Life: Synthesis and Reactivity

Credit Points 10 **Level** 2

Prerequisite

300550.1 Medicinal Chemistry OR **300225.1** Chemistry 2

Equivalent Units

300301 - Organic Chemistry 2, J3830 - Immunology and Cell Signalling

Students studying at Hawkesbury or Parramatta campus should refer to 300301 - Organic Chemistry 2. This unit introduces organic chemistry from a biological and pharmaceutical perspective, emphasising the structure & reactivity of biological molecules as organic molecules and functional group manipulation as a tool for drug design and synthesis. Appropriate practical skills to achieve this are learnt in the associated practical work.

400886.1 Motor Control and Skill Acquisition

Credit Points 10 **Level** 2

Prerequisite

400868.1 Human Anatomy and Physiology 1 AND
400869.1 Human Anatomy and Physiology 2 AND
400881.1 Functional Anatomy

Equivalent Units

100679 - Motor Control and Learning

Special Requirements

This unit is only available to students enrolled in course 4658 - Bachelor of Health Science (Sport and Exercise Science).

Motor Control and Skill Acquisition is an investigation of the physiological and psychological processes involved in both the control and the learning of movement. As such, it considers the control mechanisms which are innate to the learner, how these mechanisms change by virtue of both maturation and experience, and how the latter type of changes may be facilitated by manipulation of the learning environment.

400891.1 Movement and Skill Development

Credit Points 10 **Level** 1

Prerequisite

300361.1 Introduction to Human Biology AND **400880.1** Fundamentals of Exercise Science

Incompatible Units

400794 - PDHPE: Exploring Movement Skills, 400796 - PDHPE: Efficient Movement Principles

Special Requirements

This unit is only available to students enrolled in course 4659 - Bachelor of Health Science (PDHPE) or 4549 - Bachelor of Health Science (PDHPE).

This unit examines the scientific basis for movement and sports skill development. An understanding of the principles of movement and motor skill and how they apply to performance is examined through a range of movement tasks required for track and field athletics and some team sports. Laboratory activities will focus upon the basic movement tasks of throwing, jumping, balancing, striking, running and rotary activities. An examination of the instruments used in efficient movement analysis is undertaken.

300046.1 Multimedia Signal Processing

Credit Points 10 **Level** 4

Prerequisite

300069.1 Digital Signal Processing

Equivalent Units

84492 - Honours/Pass Subject 1

This unit introduces students to the digital processing of speech and image signals, and to the latest developments in the area of multimedia signal processing. Topics include speech generation, analysis, synthesis, speech and speaker identification, image processing techniques, image and video compression and standards.

300590.1 Nanochemistry

Credit Points 10 **Level** 2

Assumed Knowledge

An understanding of the content of the units Nanotechnology 1 and Nanotechnology 2 or equivalent.

Prerequisite

300224.1 Chemistry 1

Equivalent Units

300416 - Nanopowders and Nanomaterials

The unit covers basic theory of surface chemistry, latest technologies of surface depositions and industrial and commercial applications of nanomaterials and nanopowders. Upon successful completion, the students will achieve an in-depth understanding of techniques of preparation of nanomaterials and nanopowders that includes plasma arching, chemical vapour deposition, electrodeposition, sol-gel synthesis, ball milling and the use of natural particles. Technical aspects of process control on the microstructure and properties of coatings will be discussed. Case studies of applications of nanopowders and nanomaterials such as biomedical implants, insulators, high

power magnets, molecular sieves, supercomputers, jet engines and other industrial applications will be pursued.

300705.1 Nanotechnology

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Physics (2 unit) and HSC Chemistry (2 unit) or HSC Multi-strand Science (4 unit) or equivalent.

Equivalent Units

300417 - Nanotechnology 1, 300418 - Nanotechnology 2

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This unit provides a broad introduction to nanoscience, the current status of nanotechnology and their applications. It introduces main areas that are central to understanding the importance of nanoscale applications and to study the connection between the underlying nanoscience of various nanotechnology devices. Emphasis will be placed to reflect the true interdisciplinary nature that encompasses a broad understanding of basic sciences intertwined with medical, engineering, and information sciences pertinent to nanotechnology.

200613.1 Negotiation, Bargaining and Advocacy

Credit Points 10 **Level** 3

Prerequisite

200300.1 Managing People at Work

Equivalent Units

61430 - Negotiation, Bargaining and Advocacy

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Negotiation, bargaining and advocacy are central activities in the industrial relations process. The effective industrial relations practitioner requires knowledge of the theoretical perspectives in negotiation together with an ability to critique the relevance and application of these perspectives. The importance of strategy and judgement in negotiation is highlighted and students are given the opportunity to develop their skills through negotiation exercises. 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.

300143.2 Network Security

Credit Points 10 **Level** 3

Assumed Knowledge

Good understanding of the principles of information security, and computer networks and internets.

Prerequisite

300094.2 Computer Networking Fundamentals OR **300565.1** Computer Networking

.....

This unit is concerned with the protection of information transferred over computer networks. It includes discussion of techniques for securing data transported over local and

wide area networks. At the conclusion of the unit students will have a good understanding of the practical aspects of securing a computer network against internal and external attacks.

300575.1 Networked Systems Design

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge equivalent to that gained in the prerequisite unit

Prerequisite

300095.1 Computer Networks and Internets

Equivalent Units

300088 - Broadband Networking

.....

This unit builds on and consolidates the skills and knowledge gained in Computer Networking and Computer Networks and Internets. Students successfully completing this unit will acquire the necessary design skills and knowledge required to build and configure enterprise scale networks. The unit provides the student with an opportunity to develop problem-solving techniques and decision-making skills to resolve networking issues. Students completing this unit and its prerequisites should also now be prepared to attempt world recognized network industry certification (CCNA).

300576.1 Networking Workshop

Credit Points 10 **Level** 2

Assumed Knowledge

- List, discuss and compare the elements of information coding and signal transmission,
- List, describe, and explain the elements and functional relationships of communications hardware and software,
- Identify, locate, distinguish, and describe the individual hardware components of a personal computer (PC) and explain their purpose, functions and operations,
- Install PC components, devices and peripherals in accordance with installation procedures and operational standards.

Prerequisite

300565.1 Computer Networking AND **300150.2** PC Workshop

Equivalent Units

300138 - LAN Workshop

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This unit covers in depth the basics of networking and provides students with the knowledge and skills necessary to install, test, tune, customise, repair and maintain networking hardware and software necessary to create a Local Area Network (LAN). Students also learn how to administer a LAN by setting up user accounts, access privileges, security procedures, and back-up/recovery procedures.

300754.1 Neuroanatomy

Credit Points 10 **Level** 3

Assumed Knowledge

The outcomes of: 300543 Cell Biology, 300554 Principles of Chemistry, 300752 Introduction to Anatomy and Histology, 300753 Introduction to Human Physiology; or 400868 Human Anatomy & Physiology 1, 400869 Human Anatomy & Physiology 2; or equivalent units.

Equivalent Units

300322 - Neuroanatomy, 400964 - Clinical Neurosciences, 400166 - Clinical Neurosciences

Special Requirements

Because of space limitations, this unit will be restricted to students in the following courses: 3577 Bachelor of Medical Science, 3657 Bachelor of Medical Science/Bachelor of Information and Communication Technology, 4661 Bachelor of Health Science/Master of Podiatric Medicine, 4662 Bachelor of Health Science/Master of Physiotherapy, 4663 Bachelor of Health Science/Master of Occupational Therapy, 4666 Bachelor of Health Science (Honours)/Master of Podiatric Medicine, 4668 Bachelor of Health Science (Honours)/Master of Physiotherapy.

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This unit builds on the human anatomy and physiology studied in first and second year, equipping students with detailed knowledge of functional neuroanatomy, with particular emphasis on the central nervous system. Cadaver specimens are used to facilitate the learning of spatial relationships between structures. The study of neurological function and dysfunction integrates many previously learned scientific principles.

200029.1 Numerical Analysis

Credit Points 10 **Level** 2

Assumed Knowledge

200189 - Concepts of Mathematics

Equivalent Units

J2788 - Numerical Analysis; 14701 - Numerical Methods and Modelling

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This unit covers a substantial range of computational techniques in formulating and solving mathematical, scientific and engineering problems. Topics include: algorithmic approaches to solving nonlinear equations; systems of linear equations; differential equations; polynomial interpolation; numerical differentiation and integration; and curve fitting to approximate functions.

300488.2 Numerical Methods in Engineering

Credit Points 10 **Level** 3

Prerequisite

85006.2 Introduction to Structural Engineering AND **85012.2** Soil Engineering AND **200238.1** Mathematics for Engineers 2

Equivalent Units

85019 - Civil/Environmental Engineering Pass/Hons Elective 1

Special Requirements

Availability of computer lab.

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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.

400749.2 Nursing and Health Breakdown

Credit Points 10 **Level** 1

Assumed Knowledge

Year 1 Autumn units

Corequisite

400750.1 Introduction to Health Breakdown

Equivalent Units

400052 - Nursing Therapeutics 2

Incompatible Units

400640 - Foundations of Nursing Therapeutics, 400776 - Introduction to Nursing

Special Requirements

Students must be enrolled in the Bachelor of Nursing to enroll in this unit. Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) Adult Health Immunisation and 4) Workcover accredited Senior First Aid Certificate.

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This unit introduces students to professional nursing concepts and practices that promote, maintain and support people who are affected by health breakdown.

400751.2 Nursing and Healthy Communities

Credit Points 10 **Level** 1

Assumed Knowledge

400747 - Behavioural Foundations of Nursing Practice

Incompatible Units

400053 - Nursing Context 3, 400050 - Nursing Science 3

Special Requirements

As a result of space restrictions students must be enrolled in either the 4642, the 4643 or the 4648 Bachelor of Nursing course.

This unit introduces the student to psychosocial concepts and principles that promote and sustain the health of communities and informs professional nursing practice.

400745.2 Nursing for Health and Wellbeing

Credit Points 10 **Level** 1

Equivalent Units

400048 - Nursing Therapeutics 1

Special Requirements

Students must be enrolled in course 4642 Bachelor of Nursing.

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This unit introduces the student to nursing concepts, principles and skills that identify, promote, maintain and support health and wellbeing across the lifespan.

400204.2 Nursing Honours Thesis (Part-time)

Credit Points 60 **Level** 5

Assumed Knowledge

A basic knowledge of research methods at undergraduate level or equivalent is required.

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This unit aims to provide an opportunity for students to plan and implement a research project related to nursing which results in the production of a thesis. In consultation with an academic supervisor, the student will select a topic, conduct a literature review, design a research study, and report the findings and their implications. Attendance and participation at research seminars/colloquia is expected.

400202.2 Nursing Honours Thesis A (Full-time)

Credit Points 20 **Level** 5

Assumed Knowledge

A basic knowledge of research methods at undergraduate level or equivalent is required.

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This unit aims to provide an opportunity for students to plan and implement a research project related to nursing which results in the production of a thesis. In consultation with an academic supervisor, the student will select a topic, conduct a literature review, design a research study, and report the findings and their implications. Attendance and participation at research seminars/colloquia is expected.

400203.2 Nursing Honours Thesis B (Full-time)

Credit Points 40 **Level** 5

Assumed Knowledge

A basic knowledge of research methods at undergraduate level or equivalent is required.

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This unit aims to provide an opportunity for students to plan and implement a research project related to nursing which

results in the production of a thesis. In consultation with an academic supervisor, the student will select a topic, conduct a literature review, design a research study, and report the findings and their implications. Attendance and participation at research seminars/colloquia is expected.

300649.1 Nutrition and Health 1

Credit Points 10 **Level** 2

Assumed Knowledge

Sound understanding of undergraduate Level 1 chemistry and biology.

Equivalent Units

NT201A - Nutrition and Health 2.1

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This unit presents the basic principles and concepts of human nutrition including nutrient requirements, functions, deficiency symptoms and the effects of excess as well as energy balance and weight control. Macronutrients involved with energy metabolism. In addition, all vitamins and essential minerals are covered. Specific topics include requirements, functions and the effects of excess and deficiency. Energy balance and weight control are also covered.

300650.1 Nutrition and Health 2

Credit Points 10 **Level** 2

Prerequisite

300649.1 Nutrition and Health 1

Equivalent Units

NT202A - Nutrition and Health 2.2

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This unit applies the basic concepts of human nutrition to the various stages of the life span (infant to adulthood) as well as examining the development of Australian dietary practices and diet related disorders. This unit provides the student with adequate and reliable information so that they make informed decisions with regard to nutritionally critical moments of the life span as well as new or emerging nutrition opinion or fact.

300144.2 Object Oriented Analysis

Credit Points 10 **Level** 2

Assumed Knowledge

Should have knowledge similar to the unit 300131 - Introduction to Analysis and Design - general understanding of what an information system is and how information systems development is undertaken.

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Analysing and modeling requirements using the object-oriented (OO) approach is the core strength of this unit. The Unified Modeling Language (version 2.0) is used as a modeling standard for creating OO models in the problem space. This unit consolidates and extends the knowledge gained by students in Introduction to Analysis and Design unit and applies it to practical OO analysis work through a case study.

700039.1 Object Oriented Analysis (UWSC)

Credit Points 10 **Level** 2

Equivalent Units

14924, 48525, 61231 - Systems Analysis 1, 14998 - Systems Analysis 1A, 14935, 48526, 61232 - Systems Analysis 2

Special Requirements

Students must be enrolled at UWS College.

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This unit teaches in detail how to conduct business analysis and modeling of requirements using the object-oriented approach. It builds on the knowledge gained by students in Systems Analysis and Design unit. This unit uses the OMGs standard Unified Modeling Language version 2.0 (UML 2.0).

400176.1 Occupation and Ageing

Credit Points 10 **Level** 5

Incompatible Units

E2043 - Occupational Therapy 3 (Unit 3): Older Adult, E2045 - Lifespan Development

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The process of ageing will be examined critically using the biopsychosocial model. Students will use research evidence to prepare occupational therapy intervention for older people and their families that promotes quality of life and maximum social participation. Students will reflect on their own attitudes towards ageing and how social stereotypes of older people must be challenged to promote a positive view of this stage of life.

400176.2 Occupation and Ageing

Credit Points 10 **Level** 3

Prerequisite

400912.1 Occupational Therapy Process

Special Requirements

This unit is only available to students enrolled in courses 4663 Bachelor of Health Science/Masters of Occupational Therapy and 4664 Master of Occupational Therapy. To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) possess a current WorkCover Authority approved First Aid Certificate.

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This unit version will commence in 2012. The process of ageing will be examined critically using the biopsychosocial model. Students will use research evidence to prepare occupational therapy intervention for older people and their families that promotes quality of life and maximum social participation. Students will reflect on their own attitudes towards ageing and how social stereotypes of older people

must be challenged to promote a positive view of this stage of life.

400169.1 Occupation and Mental Health

Credit Points 10 **Level** 3

Incompatible Units

E2046 - Neurology and Clinical Psychiatry, E2047 - Occupational Therapy 4.

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This unit provides an understanding of the aetiology, signs, symptoms and prognosis of psychiatric conditions commonly encountered by occupational therapists. Mental health policies, strategies and consumer issues are examined in relation to the management of mental illness in the community. Occupational therapy theory, assessments, interventions and outcomes related to psychosocial practice are incorporated in the unit to provide a foundation for occupational therapy practice in mental health settings.

400169.2 Occupation and Mental Health

Credit Points 10 **Level** 3

Assumed Knowledge

Introductory level psychology.

Special Requirements

This unit is only available to students enrolled in courses 4663 - Bachelor of Health Science/Masters of Occupational Therapy and 4664 - Master of Occupational Therapy. To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) possess a current WorkCover Authority approved First Aid Certificate.

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This unit version will commence in 2012. This unit provides an understanding of the aetiology, signs, symptoms and prognosis of psychiatric conditions commonly encountered by occupational therapists. Mental health policies, strategies and consumer issues are examined in relation to the management of mental illness in the community. Occupational therapy theory, assessments, interventions and outcomes related to psychosocial practice are incorporated in the unit to provide a foundation for occupational therapy practice in mental health settings.

400171.1 Occupation and Neurology

Credit Points 10 **Level** 3

Incompatible Units

E2047 - Occupational Therapy 4: Unit 1 Neurology.

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This unit prepares occupational therapy students to work in a variety of settings with clients who have a neurological condition, such as a stroke or traumatic brain injury. Students learn how to analyse, measure and retrain impairments such as reduced grasp, mobility, sensation,

memory, or motor planning. These impairments commonly affect a client's ability to participate in chosen life roles and activities, and integrate back into the community. Aspects of carers' roles will also be examined. Evidence will be discussed pertaining to occupational therapy assessments and interventions. Traditional, as well as more recently established rehabilitation interventions will be examined.

400171.2 Occupation and Neurology

Credit Points 10 **Level** 3

Assumed Knowledge

Neuroanatomy.

Prerequisite

300322.1 Neuroanatomy

Special Requirements

This unit is only available to students enrolled in courses 4663 - Bachelor of Health Science/Masters of Occupational Therapy and 4664 - Master of Occupational Therapy. To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) possess a current WorkCover Authority approved First Aid Certificate.

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This unit version commences from 2012. This unit prepares occupational therapy students to work in a variety of settings with individuals who have a neurological condition. The impact of common neurological conditions on the person, their environment and their occupations will be examined. Students will be exposed to a variety of assessments, interventions and evaluation tools suitable for this client population.

400170.1 Occupation and Social Participation

Credit Points 10 **Level** 3

Equivalent Units

E3026 - Occupational Therapy 5

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This unit will be replaced by 400916 - Occupational Justice from 2013. This unit critically examines practice in the community with a focus on social inclusion. Life experiences of people with disabilities are explored. Ideologies of Normalisation and Social Role Valorisation, which currently form the basis of Disability Legislation and Community Service Standards, are discussed. Rationales for de-institutionalisation and practice in the community are critically appraised. Varied perspectives of disability are examined and applied. Contentious issues such as duty of care, dignity of risk, choice-making, rights and negligence, social dimensions of participation, are critiqued against legal, ethical and personal perspectives. This unit assists students develop empathy, critical thinking and reflection skills.

400165.1 Occupation and the Environment

Credit Points 10 **Level** 2

Incompatible Units

E1311 - Occupational Therapy 2 (Unit 2)

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Students will demonstrate skills in the analysis and modification of the environment using principles of ergonomics and appropriate Australian standards in building design. The ICDH-2 will provide the context for assessment and modification of the environment to enable individuals with impairments to overcome activity limitations or restrictions in participation.

400165.2 Occupation and the Environment

Credit Points 10 **Level** 3

Prerequisite

400908.1 People, Environment and Occupations OR
400911.1 Occupational Therapy Theory and Practice

Special Requirements

This unit is only available to students enrolled in courses 4663 - Bachelor of Health Science/Masters of Occupational Therapy and 4664 - Master of Occupational Therapy. To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) possess a current WorkCover Authority approved First Aid Certificate.

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This unit version will commence 2012. Students will demonstrate skills in the analysis and modification of the environment using principles of ergonomics and appropriate Australian standards in building design. The ICF will provide the context for assessment and modification of the environment to enable individuals with impairments to overcome activity limitations or restrictions in participation.

400733.1 Occupational Analysis

Credit Points 10 **Level** 1

Special Requirements

Students must be enrolled in course codes 4520 Bachelor of Applied Science (Occupational Therapy) or 4521 Bachelor of Applied Science (Honours) Occupational Therapy. This is a specialist professional unit for occupational therapy practice so is not suited to students from other programs.

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In 2011 this unit is being replaced by 400908 - People, Environment and Occupations. The ability to analyse human occupation including tasks and activities is a core component of occupational therapy practice. This unit provides the students with an understanding of the role of activities in a person's life. Students will develop skills in task and activity analysis and an understanding of

assessment related to specific performance components of activity. The ICDH-2 will provide the context for activity analysis. Students will gain an understanding of how the modification of activities can enable individuals with impairments to overcome activity limitations or restrictions in participation.

300794.1 Occupational Health and Safety

Credit Points 10 **Level** 3

Equivalent Units

EH313A - Occupational Health and Safety

The unit aims to provide students with the essential working understanding of occupational health and safety risk management currently required for graduate employment across a broad range of different workplaces. The unit explores current occupational health and safety issues in the workplace with specific reference to the principles of risk management, occupational health & safety and workers' compensation legislative requirements in Australia, and occupational health & safety management systems.

200753.1 Occupational Health and Safety

Credit Points 10 **Level** 3

Equivalent Units

61442 Occupational Health and Safety, 200617 - Occupational Health and Safety

The nature and history of occupational health and safety in Australia, legal frameworks including occupational health and safety acts and workers' compensation. OH&S is considered using the medical, legal, economic, industrial relations and management perspectives. Identifying, assessing, monitoring risks; and specific occupational hazards and intervention strategies are also covered.

400916.1 Occupational Justice

Credit Points 10 **Level** 7

Assumed Knowledge

Students are expected to have completed all of the units of their first three years.

Prerequisite

400912.1 Occupational Therapy Process

Equivalent Units

400170 - Occupation & Social Participation

Special Requirements

This unit is only available to students enrolled in courses 4663 - Bachelor of Health Science/Masters of Occupational Therapy and 4664 - Master of Occupational Therapy. To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children

Check Student Declaration after 1 June 2010. If students are visiting a NSW Health facility they will need to comply with the occupational screening and immunisation policy of NSW Health.

This unit critically examines practice in the community with a focus on social inclusion and occupational justice. Life perspectives of people experiencing occupational injustice are explored. Current and historical ideologies which underpin global and national legislation and policies on human rights are examined. The promotion of occupational participation through occupational therapy practice is outlined. This unit challenges popular myths and stereotypes of people with disabilities. Issues such as de-institutionalisation, duty of care, dignity of risk, choice-making, rights and negligence are critiqued against legal, ethical and personal perspectives. This unit assists students to develop critical thinking and reflection skills for practice.

400167.1 Occupational Therapy Clinical Practice 2

Credit Points 10 **Level** 2

Prerequisite

400161.1 Occupational Therapy Clinical Practice 1

Equivalent Units

E3027 - Clinical Placement 2

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Persons Declaration; Criminal Record Check Clearance; Provide evidence of compliance with the occupational screening and immunisation policy of NSW Health; Students must possess a current, Workcover Authority approved First Aid Certificate

In 2013 this unit replaced by 400913 - Occupational Therapy Practice 4 Project. This unit provides opportunities for students to implement skills and integrate theory with practice. The placement will allow students to work for a 2 week period with occupational therapists in one of the many settings where therapists currently practice. The project involves participation in a community based activity that contributes benefits a community based group. The project may be conducted in an intensive 2 week period or over a period of several weeks / months.

400174.1 Occupational Therapy Clinical Practice 3a

Credit Points 10 **Level** 3

Assumed Knowledge

Client and student safety skills attained in previous clinical units are required before attempting this unit.

Prerequisite

400167.1 Occupational Therapy Clinical Practice 2

Incompatible Units

E3028 - Clinical Placement 3

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Employment Declaration; Criminal Record Check Clearance; Provide evidence of compliance with the occupational screening and immunisation policy of NSW Health; Students must possess a current, Workcover Authority approved First Aid Certificate

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This unit is being replaced by 400910 Occupational Therapy Practice 3 in 2012. This unit will allow students to consolidate academic knowledge and clinical skills. There will be opportunities to actively participate in assessment, analysis, goal setting, treatment/programme planning and occupational therapy intervention under the supervision of an occupational therapist. The placement will allow students to work for 5 consecutive weeks with occupational therapists in one of the many settings where therapists currently practice.

400175.1 Occupational Therapy Clinical Practice 3b

Credit Points 10 **Level** 3

Prerequisite

400167.1 Occupational Therapy Clinical Practice 2

Incompatible Units

E3028 - Clinical Placement 3

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Employment Declaration; Criminal Record Check Clearance; Provide evidence of compliance with the occupational screening and immunisation policy of NSW Health; Students must possess a current, Workcover Authority approved First Aid Certificate

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This unit will allow students to consolidate academic knowledge and clinical skills. There will be opportunities to actively participate in assessment, analysis, goal setting, treatment/programme planning and occupational therapy intervention under the supervision of an occupational therapist. The placement will allow students to work for 5 consecutive weeks with occupational therapists in one of the many settings where therapists currently practice.

400182.1 Occupational Therapy Clinical Practice 4 (Honours)

Credit Points 10 **Level** 5

Prerequisite

400174.1 Occupational Therapy Clinical Practice 3a AND **400175.1** Occupational Therapy Clinical Practice 3b

Equivalent Units

E4115 - Clinical Placement 4

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Employment Declaration; Criminal Record Check

Clearance; Provide evidence of compliance with the occupational screening and immunisation policy of NSW Health; Students must possess a current, Workcover Authority approved First Aid Certificate

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This unit will allow students to consolidate academic knowledge and clinical skills in preparation for becoming a competent beginning practitioner. Students will be expected to actively participate in assessment, analysis, goal setting, treatment/programme planning and occupational therapy intervention under the supervision of an occupational therapist.

400172.1 Occupational Therapy Clinical Specialties 1

Credit Points 10 **Level** 3

Assumed Knowledge

Prior knowledge equivalent to Pathophysiology 1.

Equivalent Units

E2043 - Occupational Therapy 3

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The unit incorporates the theoretical evidence for clinical practice and an application of clinical practice skills for occupational therapy rehabilitation. The unit will include some of the most common conditions that are currently treated by occupational therapists in rehabilitation settings.

400173.1 Occupational Therapy Clinical Specialties 2

Credit Points 10 **Level** 3

Equivalent Units

E3024 - Counselling & Group Skills

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The unit incorporates the theoretical evidence for clinical practice and an application of skills for group work and creative therapies in clinical practice.

400180.1 Occupational Therapy Honours Thesis 1

Credit Points 10 **Level** 5

Assumed Knowledge

Satisfactory completion of years 1 - 3 of the Bachelor of Applied Science (Occupational Therapy).

Equivalent Units

E4119 - Advanced Research Methods

Special Requirements

Students must be enrolled in course 4521 Bachelor of Applied Science (Honours) Occupational Therapy.

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Students will build upon the skills and knowledge of research, evaluation and scholarly enquiry gained in units completed earlier in the program. The emphasis of this unit is on the theory and application of qualitative and quantitative research methods to problems in the student's speciality field. The unit therefore aims to explore: the

nature of research and experience of researching in health practitioner roles; technical skills of data collection, management, analysis and interpretation in health practice; and application of this knowledge and skill in research project development in specialist health fields.

400181.1 Occupational Therapy Honours Thesis 2

Credit Points 30 **Level** 5

Prerequisite

400180.1 Occupational Therapy Honours Thesis 1

Equivalent Units

E4118 - Research Thesis

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In this unit students will build upon the skills and knowledge of research, evaluation and scholarly enquiry gained in units completed earlier in the program. The emphasis of this unit is the completion of a supervised research project and the production of the honours research thesis. Each student will undertake through supervision the stages of data collection, analysis and will write their results into a format suitable for submission for examination.

400907.1 Occupational Therapy Practice 1

Credit Points 10 **Level** 1

Prerequisite

400160.2 Introduction to Occupational Therapy

Equivalent Units

400161 - Occupational Therapy Clinical Practice 1

Special Requirements

This is a specialty unit offered as a compulsory core unit of the occupational therapy program. It is profession specific, preparing students to practice as an occupational therapist and not relevant as an elective for non-occupational therapy students. Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 OR a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 OR a Working with Children Check Student Declaration after 1 June 2010. If students are visiting a NSW Health facility they will need to comply with the NSW Health Occupational Screening and Vaccination Against Infectious Diseases Policy.

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This unit introduces students to the principles of professional practice. Students will be provided with learning opportunities through a variety of experiential and community engagement activities that will begin to develop their skills and competence. Professional competencies addressed include communication, documentation, reflection and professional and ethical behaviour. A professional practice placement is incorporated in this unit. Students will complete practice hours in accordance with World Federation of Occupational Therapy accreditation guidelines.

400909.1 Occupational Therapy Practice 2

Credit Points 10 **Level** 2

Assumed Knowledge

Completion of the occupational therapy core unit 400160 - Introduction to Occupational Therapy and 400907 - Occupational Therapy Practice 1 is assumed knowledge.

Prerequisite

400907.1 Occupational Therapy Practice 1

Equivalent Units

400167 - Occupational Therapy Clinical Practice 2

Special Requirements

Students must be enrolled in course 4663 - Bachelor of Health Science/Masters of Occupational Therapy. To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) provide evidence of compliance with the occupational screening and immunisation policy of NSW Health 4) possess a current WorkCover Authority approved First Aid Certificate.

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This unit provides opportunities for students to implement skills and integrate theory with practice. In class students will be provided with learning opportunities through a variety of experiential and self-directed learning exercises that will begin to develop their clinical skills and competence in professional practice. The two week block placement is conducted at the end of the teaching period. This placement will allow students to work with occupational therapists in one of the many settings where therapists currently practice.

400910.1 Occupational Therapy Practice 3

Credit Points 10 **Level** 3

Assumed Knowledge

Completion of all Occupational Therapy core units.

Prerequisite

400909.1 Occupational Therapy Practice 2

Equivalent Units

400174 - Occupational Therapy Clinical Practice 3A

Special Requirements

Students must be enrolled in course 4663 Bachelor of Health Science/Masters of Occupational Therapy. Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010. If students are visiting a NSW Health facility they will need to comply with the occupational screening and immunisation policy of NSW Health.

Units

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This unit will enable students to consolidate academic knowledge and practice skills. There will be opportunities to actively participate in assessment, analysis, goal setting, intervention and evaluation under the supervision of an occupational therapist. Students will experience full time work with occupational therapists in practice settings. Students will complete practice hours in accordance with World Federation of Occupational Therapy accreditation guidelines.

400914.1 Occupational Therapy Practice 4

Credit Points 20 **Level** 7

Assumed Knowledge

Completion of all core Occupational Therapy units.

Equivalent Units

400179 - Occupational Therapy Clinical Practice 4

Special Requirements

Students must be enrolled in courses 4663 Bachelor of Health Science/Masters of Occupational Therapy and 4664 - Master of Occupational Therapy. Prerequisite requirements: 400910 - Occupational Therapy Practice 3 (for students enrolled in 4663) or 400911 - Occupational Therapy Theory and Practice (for students enrolled in 4664). To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) provide evidence of compliance with the occupational screening and immunisation policy of NSW Health 4) possess a current WorkCover Authority approved First Aid Certificate.

.....

This unit will allow students to consolidate academic knowledge and practice skills in preparation for becoming a competent beginning practitioner. Students will be expected to actively participate in assessment, analysis, goal setting, intervention and evaluation under the supervision of an occupational therapist. Students will complete practice hours in accordance with World Federation of Occupational Therapy accreditation guidelines.

400913.1 Occupational Therapy Practice 4 Project

Credit Points 10 **Level** 7

Assumed Knowledge

Completion of all core Occupational Therapy units.

Special Requirements

Students must be enrolled in courses 4663 Bachelor of Health Science/Masters of Occupational Therapy and 4664 Master of Occupational Therapy. Prerequisite requirements: 400910 Occupational Therapy Practice 3 (for students enrolled in 4663). To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have

applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010. If students are visiting a NSW Health facility they will need to comply with the NSW Health Occupational Screening and Vaccination Against Infectious Diseases Policy.

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This unit gives students an opportunity to participate in a community based project that is part of the fieldwork program. There will be a focus on a self directed practice approach. The unit allows students to develop professional skills in conducting a project which will benefit a community-based group.

400915.1 Occupational Therapy Practice 4 Workshop

Credit Points 10 **Level** 7

Assumed Knowledge

Completion of all core Occupational Therapy units.

Prerequisite

400913.1 Occupational Therapy Practice 4 Project

Equivalent Units

400179 - Occupational Therapy Clinical Practice 4

Special Requirements

Students must be enrolled in courses 4663 - Bachelor of Health Science/Masters of Occupational Therapy and 4664 - Master of Occupational Therapy. To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010. If students are visiting a NSW Health facility they will need to comply with the NSW Health Occupational Screening and Vaccination Against Infectious Diseases Policy.

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This unit will facilitate the transition from student to occupational therapy practitioner. The unit will allow students to consider employment opportunities for their future and strategies for career and professional development.

400912.1 Occupational Therapy Process

Credit Points 10 **Level** 3

Prerequisite

400911.1 Occupational Therapy Theory and Practice OR **400160.2** Introduction to Occupational Therapy

Special Requirements

This unit is only available to students enrolled in courses 4663 - Bachelor of Health Science/Masters of Occupational Therapy and 4664 - Master of Occupational Therapy. To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) successfully completed an approved Child

Protection Workshop 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) possess a current WorkCover Authority approved First Aid Certificate.

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This unit provides students with the knowledge and skills to apply the occupational therapy problem-solving process in an evidence-based way, across a diverse range of practice situations. Students will gain knowledge in the application of each stage of the occupational therapy process, learn skills in the selection and implementation of assessments and outcome measures, and undertake intervention planning to suit clients with different occupational needs and health trajectories. Different occupational therapy approaches will be reviewed and students will gain skills in tailoring intervention approaches to suit client need and practice context.

400917.1 Occupational Therapy Specialties

Credit Points 10 **Level** 7

Assumed Knowledge

It is assumed that students entering this unit will have completed all previous occupational therapy units from the third year of the Bachelor of Health Science/Masters of Occupational Therapy.

Prerequisite

400912.1 Occupational Therapy Process

Special Requirements

Students must be enrolled in courses 4663 - Bachelor of Health Science/Masters of Occupational Therapy and 4664 - Master of Occupational Therapy. To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) possess a current WorkCover Authority approved First Aid Certificate.

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This unit provides occupational therapy students with the opportunity to select from, and undertake advanced study in, a range of occupational therapy clinical speciality areas. Several streams will run concurrently in this unit representing key clinical areas of specialisation in occupational therapy. Students will be able to focus their study, by selecting a combination of clinical specialty streams. Streams will cover relevant clinical content, examining the unique occupational therapy contribution in each speciality area.

400911.1 Occupational Therapy Theory and Practice

Credit Points 10 **Level** 7

Special Requirements

Students must be enrolled in course 4664 - Master of Occupational Therapy. To undertake this unit, students must comply with the following special requirements: Prior

to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) provide evidence of compliance with the occupational screening and immunisation policy of NSW Health 4) possess a current WorkCover Authority approved First Aid Certificate.

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This unit introduces master's entry students to the theory and practice of occupational therapy. Students will explore the unique contribution of occupational therapists in the health care setting, apply theoretical and philosophical principles underpinning the profession to client groups, and learn analytical skills to examine the relationship between a person, their environment and their participation in daily occupations. The occupational therapy problem solving process will be briefly introduced. In addition, students will study clinical and professional competencies related to practice as a health professional. Finally, the above knowledge and skills will be applied during a four week fieldwork placement.

300149.1 Operating Systems

Credit Points 10 **Level** 3

Assumed Knowledge

Fundamentals of Computer Science. Basic structure and functioning of computer hardware

Prerequisite

300167.1 Systems Programming 1

Equivalent Units

14944 - Operating Systems, J2789 - Operating Systems

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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.

300698.1 Operating Systems Programming

Credit Points 10 **Level** 3

Assumed Knowledge

The students are expected to have general understanding of computer systems, computer fundamentals and programming techniques.

Prerequisite

300581.1 Programming Techniques

Equivalent Units

300149 - Operating Systems

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This unit provides the knowledge of the internal structure and functionality of Operating Systems. An operating system defines an abstraction of hardware behaviour and provides a range of services more suitable for ICT

application development than what raw hardware could deliver, in terms of convenience, efficiency and security. It is important that ICT Professionals have some understanding of how these services are realized. For ICT Professionals whose role includes supporting the operating system this unit provides the introduction to the relevant theory and practice.

200565.2 Operations and Logistics in Practice

Credit Points 10 **Level** 3

Assumed Knowledge

Students are expected to have gained an introductory level of knowledge in logistics and supply chain management.

Prerequisite

200588.1 Global Operations and Logistics Management

Equivalent Units

200388 - Logistics Management in Practice, 200166 - Operations Management in Practice

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Students studying Operations and Logistics in Practice may have the opportunity to undertake an international field trip to experience operations and logistics environments from an international perspective. Operations and Logistics in Practice enable students to analyse and discuss contemporary operations and logistics issues in a workshop environment. This unit is designed to offer an advanced holistic view of operations and logistics and a framework to assist students in researching and assessing trends in industry. This unit offers a balance of class work and field trips to operations and logistics oriented organisations.

300670.1 Optimisation Techniques

Credit Points 10 **Level** 3

Equivalent Units

200197 - Optimisation 1, 14346 - Linear Programming, J3638 - Operations Research 3.1

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This unit presents the fundamental mathematical aspects of operations research and develops skills in quantitative approaches in decision making. Students will learn how the optimisation techniques work and how they can be applied by the decision maker in order to generate efficient solutions. The unit focuses on problem formulation and solution methods and covers linear programming primarily and integer programming and dynamic programming briefly.

300301.1 Organic Chemistry 2

Credit Points 10 **Level** 2

Prerequisite

300225.1 Chemistry 2 OR **300550.1** Medicinal Chemistry

Equivalent Units

300553 - Molecules of Life: Synthesis and Reactivity

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Students studying at Campbelltown campus should refer to 300553 - Molecules of Life: Synthesis and Reactivity. This

unit introduces how and why organic chemical reactions happen. The chemistry of the major chemical groups is discussed in terms of general reaction mechanisms. These ideas are drawn together in the examination of rationales involved in synthesising and identifying multifunctional organic molecules, and appropriate practical skills to achieve this are learnt in the associated practical work. Applications considered may include biological and medicinal organic chemistry and various aspects of industrial organic chemistry.

300235.1 Organic Chemistry 3

Credit Points 10 **Level** 3

Prerequisite

300301.1 Organic Chemistry 2

Equivalent Units

J3687 - Organic Chemistry 3, CH304A - Organic Chemistry 3.2 (V1), 14107 - Advanced Organic and Analytical Chemistry

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Students studying at Campbelltown campus should refer to 300546 - Drug Design and Synthesis. This unit introduces selected areas of more advanced organic chemistry, focusing on the tools used to synthesise and identify organic molecules. The practical skills required are learnt through laboratory exercises that complement the theory.

200159.2 Organisation Analysis and Design

Credit Points 10 **Level** 3

Assumed Knowledge

General knowledge of management principles (such as in MG102A - Management Foundations).

Prerequisite

200571.1 Management Dynamics OR **MG102A.1** Management Foundations OR **61611.1** Management Studies OR **H1727.1** Business Management

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This unit is concerned with organisation theories, forms and practices at both the macro and micro levels. Tensions and paradoxes that arise through processes of 'getting things done' in organisations are examined. Various classical and contemporary approaches to conceptualising organisations are introduced and critically appraised. Historical shifts in organisational structure and design preferences are examined. Multiple perspectives are brought to analyse organisation designs. Organising as a social meaning making process, where order and disorder are in tension and unpredictability is shaped and managed, is examined. Students are invited to learn through involvement in, and reflection upon, a range of individual and collaborative activities.

200585.1 Organisational Behaviour

Credit Points 10 **Level** 2

Prerequisite

200571.1 Management Dynamics OR **MG102A.1** Management Foundations

Equivalent Units

MG204A - Organisational Behaviour

Organisational Behaviour focuses on people in the work place, what motivates them, their attitudes, and how they interact with others. The effects of different communication and types of conflict are also examined. The unit focuses on the individual and group processes of organisational behaviour. Students will also gain an understanding of the importance of research in what might be classified as the non-tangibles in organisational effectiveness. This unit aims to develop personal and interpersonal skills of prospective managers for working in contemporary organisational settings.

200157.2 Organisational Learning and Development

Credit Points 10 **Level** 3

Prerequisite

200571.1 Management Dynamics OR **MG102A.1** Management Foundations OR **61611.1** Management Studies OR **H1727.1** Business Management

Organisational Learning and Development introduces a powerful way of understanding the nature of contemporary organisations and the key strategic tasks they face. Promotion of individual self-development within a continuously self-transforming organisation is presented as essential if organisations are to innovate and evolve, and so meet the challenges of a turbulent world. The unit introduces the idea that promoting organisational learning means adopting an appropriate management philosophy, one that challenges traditional theories of management. The concept and practice of organisational learning and implications for management approaches are introduced and critically evaluated. Students are stimulated to learn through involvement in reflection upon a range of individual and collaborative activities.

400809.1 Outcome Measures and Indicators in Clinical Practice

Credit Points 10 **Level** 3

Equivalent Units

400185 - Health Outcomes and Indicators

This unit aims to provide students with a deeper understanding of the methods used to evaluate clinical practice and service provision. The primary focus of this unit is clinical indicators and outcome measurement. Students will be required to apply their knowledge of professional theory, practice, and research to design a project that could be implemented in the clinical setting to evaluate the effectiveness of clinical intervention or service provision.

400808.2 Outdoor Recreation

Credit Points 10 **Level** 1

Equivalent Units

100666 - Outdoor Recreation 1

Special Requirements

Students must be enrolled in course 4659 - Bachelor of Health Science (PDHPE) or 4549 - Bachelor of Health Science (PDHPE).

Students will learn about the variety of outdoor recreational pursuits available to individuals, whether in a school-based or community setting. Through active participation and guided instruction, students will also learn how to supervise specific forms of outdoor recreation. Lecture content will reinforce learning and skill development through the study of the development, administration and delivery of school-based and community public recreation programs, as well as study the role of recreation within Australia.

700063.1 Outdoor Recreation (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

400808 - Outdoor Recreation

Special Requirements

This unit is only available to UWS College students.

Students will learn about the variety of outdoor recreational pursuits available to individuals, whether in a school-based or community setting. Through active participation and guided instruction, students will also learn how to supervise specific forms of outdoor recreation. Lecture content will reinforce learning and skill development through the study of the development, administration and delivery of school-based and community public recreation programs, as well as studying the role of recreation within Australia.

400186.1 Paediatric Practice

Credit Points 10 **Level** 3

This elective unit aims to give students the opportunity to investigate a particular aspect of paediatric and adolescent clinical practice. This unit will be conducted in a self-directed mode where students will have the opportunity through a learning contract to decide on their own learning objectives and negotiate assessment items. It will provide the opportunity for those students interested in pursuing a career with children and adolescents to enhance and apply their theoretical knowledge of paediatric practice to a particular area of interest.

300323.2 Pathological Basis of Disease

Credit Points 10 **Level** 2

Assumed Knowledge

Content equivalent to 300539 Biodiversity and 300554 Principles of Chemistry and 300752 Introduction to

Anatomy and 300753 Introduction to Human Physiology or equivalent units.

Incompatible Units

400138 - Pathophysiology 1

Special Requirements

Students must be enrolled in 3577 Bachelor of Medical Science, 3657 Bachelor of Medical Science/Bachelor of Information and Communications or 3589 Bachelor of Science (Forensic Science).

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This unit builds on human anatomy and physiology studied in first year, equipping students with detailed knowledge of general pathological processes and selected systems pathology. The student is introduced to histology and histopathology. Many previously learned scientific principles are integrated into the context of disease.

400138.2 Pathophysiology 1

Credit Points 10 **Level** 2

Prerequisite

400868.1 Human Anatomy and Physiology 1 AND **400869.1** Human Anatomy and Physiology 2

Incompatible Units

300323 - Pathological Basis of Disease

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This unit is intended for students enrolled in a range of health science courses within the School of Biomedical and Health Sciences. It is designed to equip students with a detailed knowledge of pathophysiological processes evident in a number of key human diseases that are vocationally relevant to these students. The content is organised using a systems based approach. Problem-based learning methods will be adopted in the tutorial component of this unit to help students develop crucial problem solving skills.

400267.2 Pathophysiology 2

Credit Points 10 **Level** 2

Prerequisite

400138.2 Pathophysiology 1 OR **300323.2** Pathological Basis of Disease

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This unit extends the scope of topics explored in Pathophysiology 1 and is designed to equip students enrolled in health science courses of the School with detailed knowledge of pathophysiological processes evident in a number of key human diseases that are vocationally relevant to these students. Problem-based learning methods will be adopted in the tutorial component of this unit to help students develop crucial problem solving skills.

300150.2 PC Workshop

Credit Points 10 **Level** 1

Assumed Knowledge

Basic knowledge of personal computers.

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This unit introduces students to the hardware and software components of a stand-alone personal computer (PC). Students become familiar with the CPU, memory, secondary storage, IO peripherals and communications devices commonly found in a PC. They learn to assemble and disassemble a PC and to install hardware and software components according to supplier specifications. Students also learn to use and customise the PC operating system to maintain and optimise PC performance.

400798.1 PDHPE: Games for Diverse Groups

Credit Points 10 **Level** 2

Equivalent Units

100832 - Sports Coaching with Juniors

Special Requirements

Child protection training, senior first aid

.....

This unit focuses on the principles of coaching (young) children and adolescence in a variety of Striking/Fielding sports using a games sense through understanding approach. It builds on theories and practical aspects of game sense presented in Invasion Games 1 and 2. In particular it addresses issues of diversity and difference, and inclusion in sport and recreation activities. The organisation of the Disability Education Program (DEP) and the catering for diverse groups with special needs is addressed through a games sense approach. As well as addressing a range of traditional sports (Baseball, Cricket, Softball) the unit gives students the opportunity to design game sense approach programs for a range of alternate activities catering for diverse groups (Blind cricket, Table cricket, Boccia, Lifeball, Sitting volleyball, Goal ball, wheelchair basketball). Students will implement a coaching/teaching program in a local school. Students will be required to complete the DEP training program and gain a number of Level 1 coaching certificates in both traditional sports and modified sports. These are undertaken at their own expense and in their own time. They are additional extras to the formal teaching and lecturing of the unit. This school project/coaching clinic may occur outside of time tabled class lectures and tutorials. There are additional costs associated with this unit.

400908.1 People, Environment and Occupations

Credit Points 10 **Level** 2

Prerequisite

400160.1 Introduction to Occupational Therapy AND **400907.1** Occupational Therapy Practice 1

Equivalent Units

400734 - Functional Analysis

Special Requirements

Students must be enrolled in course 4663 - Bachelor of Health Science/Master of Occupational Therapy. This is a specialty unit offered as a compulsory core unit of the occupational therapy program. It is profession specific, preparing students to practice as an occupational therapist

and not relevant as an elective for non-occupational therapy students.

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Analysing an individual's participation in meaningful occupations is an essential clinical reasoning process to be mastered by occupational therapists. Therapists must be able to analyse three factors to do so: the person's abilities; the demands of the occupation; and the impact of the environmental context on participation. This unit will facilitate the development of these skills so that students can maximise the person-environment-occupation fit to optimise participation for people with a variety of health challenges or disabilities.

400897.1 Personal Training and Coaching

Credit Points 10 **Level** 3

Prerequisite

300361.1 Introduction to Human Biology AND **400880.1** Fundamentals of Exercise Science AND **400892.1** Physical Activity, Nutrition and Health

Special Requirements

Students must be enrolled in course 4659 - Bachelor of Health Science (PDHPE).

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This unit presents the functional anatomy, exercise physiology, physical fitness, biomechanics, motor development and exercise training content required to function as competent personal trainers and/or sports coaches. Students will also complete laboratory exercises designed to train and provide experience in key aspects of personal training and coaching, including assessments of different components of physical fitness in laboratory and field settings, skill analyses from biomechanical and motor development perspectives, resistance training experience and coaching, and quantifying skill in sports and athletics.

300324.1 Pharmacological Chemistry

Credit Points 10 **Level** 3

Assumed Knowledge

300301 - Organic Chemistry 2. This unit is aimed at undergraduates with a grounding in chemistry and biochemistry.

Equivalent Units

J3649 - Pharmacological Chemistry

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Contemporary medicinal chemistry relies upon a rigorously planned and rational design of drugs based upon a full understanding of both chemistry and biology. An ability to determine and define the chemical structure of the drug, its target system, its site of action and its destruction mechanisms, has allowed the scientist to systematically tailor a drug to its specific purpose using quantitative structure-activity relationships (QSAR) and this methodology is emphasised within the unit. With the accelerating development of computer-based technologies this capability has been extended further. Drugs such as cimetidine and other histamine antagonists are used to illustrate the achievement and future uses of structure-

activity relationships in rational drug design, whilst the laboratory work leads to a simulated quantitative structure-activity determination relating to antimicrobials.

300505.1 Pharmacology

Credit Points 10 **Level** 2

Assumed Knowledge

Assumed knowledge equivalent to 300320 - Introduction to Human Physiology or 300323 - Pathological Basis of Disease

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Pharmacology is the study of the therapeutic interactions of drugs with the human body, focusing on the drug's mechanisms of action at the biochemical and cellular level, on adverse reactions and on clinical applications. The aim of this unit is to provide students with a sound understanding of fundamental aspects of this field to prepare for further study of advanced pharmacology or other biomedical sciences. The general principles of pharmacokinetics and pharmacodynamics will be discussed in detail. This will be followed by the discussions of the major drug categories that affect different organ systems. Research methods in pharmacology and drug development process will also be introduced.

400892.1 Physical Activity, Nutrition and Health

Credit Points 10 **Level** 2

Equivalent Units

400780 - Nutrition, Physical Activity & Mental Health

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Australian society is currently facing critical challenges in the areas of health & wellbeing, mental health, and nutrition. This unit examines the interdependence between these areas, and how personal and socio-cultural health issues can be addressed in a pro-active, holistic and sensitive manner.

300236.1 Physical Chemistry 2

Credit Points 10 **Level** 2

Assumed Knowledge

To a standard equivalent to that presented in 300224 - Chemistry 1 (or equivalent); and equivalent to completion of first-year mathematics unit (200191 - Fundamentals of Mathematics OR 200189 - Concepts of Mathematics)

Prerequisite

300224.1 Chemistry 1 OR **300554.1** Principles of Chemistry

Equivalent Units

14142 - Physical Chemistry, 300540 - Biomolecular Dynamics, CH205A - Chemistry 2, J2776 - Physical Chemistry 2

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Students studying at Campbelltown campus should refer to 300540 - Biomolecular Dynamics. This unit deals with some important principles, topics and techniques in physical chemistry, including the principles of energy flow and transformation in chemical systems (chemical

thermodynamics), the rates and extent of chemical reactions (chemical equilibrium and kinetics), and applications of these principles to electrochemistry and a range of industrial and biological processes. The unit extends and expands on some of the topics studied previously in Chemistry 1 and 2, and aims to support and complement other units in chemistry, biochemistry, biotechnology, physics and the biological sciences. It strengthens students' ability to study quantitative chemical problems, and further develop useful experimental and data-analysis skills.

300303.1 Physical Chemistry 3

Credit Points 10 **Level** 3

Assumed Knowledge

A demonstrated understanding of and competence with the basic principles of physical chemistry including states and properties of matter, thermodynamics, chemical equilibria, kinetics and electrochemistry to a standard equivalent to that presented in Physical Chemistry 2 (or equivalent).

Prerequisite

300236.1 Physical Chemistry 2

Equivalent Units

J3696 - Physical Chemistry 3, CH305A Physical Chemistry 3.1, 14115 - Advanced Physical and Inorganic Chemistry

.....

This unit introduces selected areas of more advanced physical chemistry, which build on and extend the knowledge and understanding gained in Physical Chemistry 2. The practical skills required are learnt through laboratory exercises, which complement the theory.

700026.1 Physics (UWSCFS)

Credit Points 10 **Level** Z

Special Requirements

Students must be enrolled at UWS College.

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This unit serves as an introduction to the fundamentals of physics with appropriate applications in a wide range of engineering areas.

300558.1 Physics 1

Credit Points 10 **Level** 1

Assumed Knowledge

2 units of HSC mathematics or equivalent

Equivalent Units

14201 - Foundation Physics 1, 14227 - Engineering Physics, 300050 - Physics 1, 300077 - Physics 1D, EN102A - Engineering Science, J1733 - Physics 1.1, J1763 - Fundamentals of Physics

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This unit provides an introduction to physics for science and medical science students as well as providing a basis for further study of more advanced physics for students pursuing courses in nanotechnology, chemical, physical and mathematical sciences. It provides a foundation to

understand the physical principles which underlay scientific instrumentation and analysis. Topics covered include systems of units; Introductory mechanics, Newton's laws, work, conservation of energy and momentum; Electricity, electrostatics, DC and AC circuits and components, introductory electromagnetism; Waves and optics, electromagnetic radiation, reflection, refraction, image formation, polarisation, interference and diffraction.

700035.2 Physics 1 (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300050 - Physics 1, J1763 - Fundamentals of Physics, J1733 - Physics 1.1, 14201 - Foundation Physics 1, EN102A - Engineering Science, 14227 - Engineering Physics, 300077 - Physics 1D, 300558 - Physics 1

Special Requirements

Students must be enrolled at UWS College.

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This unit provides an introduction to physics for science and medical science students as well as providing a basis for further study of more advanced physics for students pursuing courses in nanotechnology, chemical, physical and mathematical sciences. It provides a foundation to understand the physical principles which underlay scientific instrumentation and analysis. Topics covered include systems of units; Introductory mechanics, Newton's laws, work, conservation of energy and momentum; Electricity, electrostatics, DC and AC circuits and components, introductory electromagnetism; Waves and optics, electromagnetic radiation, reflection, refraction, image formation, polarisation, interference and diffraction.

300559.1 Physics 2

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics or equivalent.

Equivalent Units

14202 - Foundation Physics 2, 300051 - Physics 2, J1734 - Physics 1.2, PH103A - Physics 1.2 (v2)

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This unit develops a deeper understanding of physics for students pursuing courses in nanotechnology, chemical, physical and mathematical sciences. Topics covered include Mechanics: Equilibrium, stress and strain, harmonic oscillators, rotational motion, moment of inertia. Gravitation, types of force in nature. Thermal Physics: temperature, specific & latent heat, heat transfer, kinetic theory of gases, first law of thermodynamics, isothermal, isobaric & adiabatic processes. Introduction to Modern Physics: special relativity, time dilation, length contraction, momentum, mass, rest energy, velocity addition. Basic quantum theory, Planck's hypothesis, wave nature of matter, quantum mechanical view of atoms. Nuclear physics, radiation, half-life, nuclear reactions.

300464.1 Physics and Materials

Credit Points 10 **Level** 1

Equivalent Units

14227 - Engineering Physics

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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.

700020.1 Physics and Materials (UWSC)

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Physics and HSC Mathematics and/or Physics (UWSC Dip) and Mathematics C (UWSC Dip)

Equivalent Units

300464 - Physics and Materials

Special Requirements

Students must be enrolled at UWS College.

.....
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.

200148.1 Planning and Design of Hospitality Facilities

Credit Points 10 **Level** 3

Assumed Knowledge

Advanced unit, assumes basic knowledge of hospitality management.

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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.

300787.1 Plant Microbiology and Protection

Credit Points 10 **Level** 3

Assumed Knowledge

Introductory microbiology and invertebrate biology.

Incompatible Units

300336 - Plant Microbe Interactions, 300643 - Plant Protection

.....
This unit explores the positive and negative aspects of interactions between plants and microorganisms in the environment. Students learn to recognise both the significance of plant pests and methods of reducing their

damage to plants and plant products. Major areas of study include: plant pathological viruses, bacteria and fungi, their mode of action, life cycle and symptomatology; natural plant defence mechanisms; root nodules, mycorrhizae and the rhizosphere; major groups of organisms causing plant losses, viz. arthropods, pathogens and weeds; strategies for reducing pest damage (including legislative, physical, biological and chemical) - benefits and limitations; and field recognition of pests and damage assessment.

300609.1 Plant Physiology

Credit Points 10 **Level** 2

Assumed Knowledge

Sound knowledge of biology and chemistry equivalent to undergraduate Level 1 units.

Equivalent Units

14409 - Plant Physiology, 300333 - Introductory Plant Physiology

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This unit introduces students to the mechanisms by which plants function. It will provide students with a detailed understanding of the processes and pathways involved in plant water, nutrient and energy acquisition and plant growth and development. It also introduces students to the interactions that occur between plants and their external environment including plant stress responses, plant defence strategies, plant - microbe interactions and plant responses to climate change, and how these interactions influence plant physiological processes and growth and development.

400928.1 Podiatric Clinical Block

Credit Points 20 **Level** 7

Assumed Knowledge

Human Anatomy and The Appendicular Skeleton, Podiatry Pre-clinical, Podiatric Techniques 1A, 1B, 2B, 3A, 3B.

Prerequisite

400930.1 Podiatric Practice 2 AND **400931.1** Podiatric Practice 3 AND **400937.1** Podiatric Techniques 2A AND **400941.1** Podiatric Techniques 3C

Special Requirements

Podiatry specific - students will be participating in patient assessment and management. It is essential that they have been able to demonstrate competencies in patient assessment, documentation, treatment programs and communication within allied health / community settings. The podiatric practice units in combination with the clinical block placement have been designed to be an integrated suite of units where one unit builds on the clinical competencies of the others. Prior to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) Senior First Aid Certificate and completed the OxyViva Resuscitation and EpiPen components as administration by a work cover accredited educational body 4) NSW Health Department Category A Vaccinations

This unit will further develop students' assessment skills encouraging the student to make the appropriate selection of assessment techniques to diagnose, treat and provide long term health outcomes especially in the public / community based patients. In this clinical unit, students will continue to participate in clinical activities under supervision in public sector placements to manage foot pathologies with increased scope of treating special populations (the high risk foot). Supporting workshop activities will be divided into two areas: Lecture / tutorial format to prepare the student for the block placement and a final feedback session at the end of the placement.

400943.1 Podiatric Clinical Block for Honours Students

Credit Points 10 **Level** 7

Assumed Knowledge

Anatomy, Podiatry Pre-clinical, Podiatric Techniques 1A, 1B, 2B, 3A, 3B.

Prerequisite

400930.1 Podiatric Practice 2 AND **400931.1** Podiatric Practice 3 AND **400937.1** Podiatric Techniques 2A AND **400941.1** Podiatric Techniques 3C

Special Requirements

Podiatry specific - students will be participating in patient assessment and management. It is essential that they have been able to demonstrate competencies in patient assessment, documentation, treatment programs and communication within allied health / community settings. The podiatric practice units in combination with the clinical block placement have been designed to be an integrated suite of units where one unit builds on the clinical competencies of the others. Students must hold a: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010. 3) Senior First Aid Certificate and completed the OxyViva Resuscitation and EpiPen components as administration by a work cover accredited educational body 4) NSW Health Department Category A Vaccinations

.....

This unit will introduce students to the principles of professional development and appropriate requirements to function as a registered podiatrist. As podiatrists may work as a primary provider, as part of a multidisciplinary team, in the public or private health care setting, they require extensive knowledge of many aspects of the management of a practice or business. Students will then undertake a clinical placement to further develop the assessment skills to diagnose, treat and provide long term health outcomes with public / community based patients. Students will participate in clinical activities under supervision in public sector placements to manage foot pathologies with increased scope of treating special populations (the high risk foot). Supporting workshop activities will provide an opportunity to discuss complex cases and professional issues.

400929.1 Podiatric Practice 1

Credit Points 10 **Level** 3

Assumed Knowledge

Appendicular Skeleton.

Prerequisite

400933.1 Podiatry Pre-Clinical

Corequisite

400942.1 Introduction to Podiatry and Clinical Education

Equivalent Units

400141 - Podiatry Practice 1

Special Requirements

Podiatry specific - students will be participating in patient assessment and management. It is essential that they have been able to demonstrate baseline competencies in patient assessment and infection control procedures. The podiatric practice units have been designed to be an integrated suite of units where one unit builds on the clinical competencies of the others. Prior to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) Senior First Aid Certificate and completed the OxyViva Resuscitation and EpiPen components as administration by a work cover accredited educational body 4) NSW Health Department Category A Vaccinations

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This unit will introduce students to the first clinical unit in the series of four where students will demonstrate basic competencies in patient assessment, communication and management skills. The student will also be introduced to basic skills in mechanical therapy as part of the clinical therapies unit. In this unit students will participate in clinics as informed and guided observers, and will commence elementary assessment and diagnostic skills. The activities will be divided into four areas: new patient clinics, clinical tutorials, clinical therapies and a one-week external clinical placement at the end of semester.

400930.1 Podiatric Practice 2

Credit Points 10 **Level** 3

Assumed Knowledge

Appendicular Skeleton, Podiatry Pre-clinical 1, Podiatric Techniques 1A, 1B.

Prerequisite

400929.1 Podiatric Practice 1

Equivalent Units

400145 - Podiatric Practice 2

Special Requirements

Podiatry specific - students will be participating in patient assessment and management. It is essential that they have been able to demonstrate baseline competencies in patient assessment and infection control procedures. The podiatric practice units have been designed to be an integrated suite of units where one unit builds on the clinical competencies

of the others. Prior to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) Senior First Aid Certificate and completed the OxyViva Resuscitation and EpiPen components as administration by a work cover accredited educational body 4) NSW Health Department Category A Vaccinations.

.....

This unit will further develop students' assessment skills encouraging the student to make the appropriate selection of techniques (biomechanical assessments) and to introduce the student to the diagnosis and management of a variety of simple foot pathologies. In this unit, the second of the four clinical practice units, students will participate in assessments of patients under supervision and continue with the management of foot pathologies. Clinical activities will be divided into five areas: General Medicine Clinic, Biomechanical Assessment Clinical, Tutorial, Clinical Therapies and External Clinical Placement.

400931.1 Podiatric Practice 3

Credit Points 10 **Level** 7

Assumed Knowledge

Appendicular Skeleton, Podiatry Podiatry Pre-clinical , Podiatric Techniques 1A, 1B, 2B.

Prerequisite

400930.1 Podiatric Practice 2 AND **400937.1** Podiatric Techniques 2A

Equivalent Units

400152 - Podiatric Practice 4

Special Requirements

Podiatry specific - students will be participating in patient assessment and management. It is essential that they have been able to demonstrate baseline competencies in patient assessment and infection control procedures. The podiatric practice units have been designed to be an integrated suite of units where one unit builds on the clinical competencies of the others. Prior to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) Senior First Aid Certificate and completed the OxyViva Resuscitation and EpiPen components as administration by a work cover accredited educational body 4) NSW Health Department Category A Vaccinations

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This unit will further develop students' assessment skills encouraging the student to make the appropriate selection of assessment techniques to diagnose, treat and provide long term health outcomes. In this unit, the third of the four clinical practice units, students will continue to participate in clinical activities under supervision to manage foot pathologies with increased scope of treating special population groups. Clinical activities will be divided into four areas: Clinic – general, biomechanical and surgical assessments, Tutorial, Clinical Therapies and External Clinical Placement.

400932.1 Podiatric Practice 4

Credit Points 10 **Level** 7

Assumed Knowledge

Appendicular Skeleton, Podiatry Pre-clinical , Podiatric Techniques 1A, 1B, 2B, 3A.

Prerequisite

400931.1 Podiatric Practice 3 AND **400937.1** Podiatric Techniques 2A AND **400941.1** Podiatric Techniques 3C

Equivalent Units

400158 - Podiatric Practice 6

Special Requirements

Podiatry specific - students will be participating in patient assessment and management. It is essential that they have been able to demonstrate baseline competencies in patient assessment and infection control procedures. The podiatric practice units have been designed to be an integrated suite of units where one unit builds on the clinical competencies of the others. Prior to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) Senior First Aid Certificate and completed the OxyViva Resuscitation and EpiPen components as administration by a work cover accredited educational body 4) NSW Health Department Category A Vaccinations

.....

This unit will further develop students' assessment skills encouraging the student to make the appropriate selection of assessment techniques to diagnose, treat and provide long term health outcomes. In this final clinical unit, students will continue to participate in clinical activities under supervision in both the Unclinic and public sector placements to manage foot pathologies with increased scope of treating special population groups. Clinical activities will be divided into four areas: Clinic – general, biomechanical and surgical assessments, Tutorial, Clinical Therapies and External Clinical Placement.

400934.1 Podiatric Professional Practice Studies

Credit Points 10 **Level** 7

Special Requirements

Podiatry specific.

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This unit will introduce students to the principles of professional development and appropriate requirements to function as a registered podiatrist. As podiatrists may work as a primary provider, as part of a multidisciplinary team, in the public or private health care setting, they require extensive knowledge of many aspects of the management of a practice or business. During a one week conference, students will be introduced to a gumut of principles specific to professional, ethical and legal issues associated with working as a podiatrist and practice and workplace administrative policies and procedures.

400935.2 Podiatric Techniques 1A

Credit Points 10 **Level** 3

Assumed Knowledge

Anatomy – structure and function of the lower extremity is important as the focus of this unit is on abnormalities of the lower limb and subsequent assessment and management of conditions of the foot and leg

Prerequisite

400933.1 Podiatry Pre-Clinical AND **400881.1** Functional Anatomy

Incompatible Units

400142 - Pathomechanics of Human Locomotion, 400144 - Podiatric Medicine

.....

This unit will introduce students to clinical (practical hands on) and theoretical foundations of human biomechanics of the foot and lower extremity and the mechanics, diagnosis and treatment of pathological conditions. The unit consists of coordinated lectures and practical components to cover the introductory theory of gait analysis, relevant physical examinations (joint, muscle testing to therapeutic options), diagnosing conditions such as shin pain, foot pain (plantar fasciitis, heel spur syndrome or digital deformities) and related treatment options.

400936.2 Podiatric Techniques 1B

Credit Points 10 **Level** 3

Assumed Knowledge

Anatomy covered in Human Anatomy & Physiology and Appendicular Skeleton.

Prerequisite

400933.1 Podiatry Pre-Clinical AND **400881.1** Functional Anatomy

Incompatible Units

400140 - Introduction to Radiology, 400143 - Musculoskeletal Disorders of the Lower Extremity

.....

This unit will introduce students to clinical and theoretical foundations of the musculoskeletal system conditions that will impact on the function of the lower extremity. Disease processes that affect the joint structure such as osteoarthritis, rheumatoid arthritis, arthropathies, gout, osteoporosis, osteomyelitis, systematic disorders and tumours will be covered. Advanced assessment evaluation will be taught that will include diagnostic techniques, eg. x-rays, ultrasound, magnetic resonance imaging and computer tomography. This will assist in the application and clinical interpretation of presenting disease processes in podiatric settings.

400937.2 Podiatric Techniques 2A

Credit Points 10 **Level** 3

Assumed Knowledge

Regional anatomy of the lower extremity is essential as students will be injecting local anaesthesia into the foot.

Infection control and manual dexterity skills are essential which will be covered in Podiatric Practice 1 and Podiatry Pre-Clinical.

Prerequisite

400869.1 Human Anatomy and Physiology 2 AND **400881.1** Functional Anatomy AND **400933.1** Podiatry Pre-Clinical AND **400981.1** Clinical Pharmacology

Equivalent Units

400150 - Surgery for Podiatrists

Special Requirements

Must hold a Senior First Aid Certificate and completed the OxyViva Resuscitation and EpiPen components as administration by a work cover accredited educational body.

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This unit will introduce students to local anaesthesia, the theory of surgical procedures and the practice of skin and nail surgical techniques. As such, this unit allows students to assess patients' suitability for administration of local anaesthesia; understand procedures involved in obtaining voluntary consent, appreciate, reasonably predict and describe the possible adverse effects of administering local anaesthesia. Surgery will focus the medico-legal requirements, principles of theatre protocol, peri-operative and post surgical management of the patient and nail and skin surgery, in preparation for student undertaking surgery during Podiatric Practice 3 and 4.

400938.2 Podiatric Techniques 2B

Credit Points 10 **Level** 3

Assumed Knowledge

400135 - Clinical Pharmacology and Microbiology. As this unit builds on the concepts presented in Clinical Pharmacology and Microbiology, an understanding of the pharmacokinetics and dynamics of drugs is recommended.

Prerequisite

400981.1 Clinical Pharmacology

Incompatible Units

400146 - Pharmacology and Dermatology

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This unit will introduce students to the principles of pharmacology in podiatry and further develop the understanding of drug prescription issues, with particular focus on drugs of importance to podiatry patients, drug interactions and poly pharmacological issues.

400939.1 Podiatric Techniques 3A

Credit Points 10 **Level** 7

Assumed Knowledge

Podiatric Techniques 1A, 1B, Human Anatomy and Physiology 1, 2 and Appendicular Skeleton.

Incompatible Units

400147 - Paediatrics and Sports Medicine for Podiatry, 400153 - Gerontology and Neurology

Special Requirements

Podiatry specific.

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This unit will introduce students to clinical and theoretical foundations of biomechanical alignment, trauma, psychological and behavioural factors leading to pain and restricted function of the foot and lower extremity affecting daily living activities. Particular focus will be placed on the mechanics, diagnosis and treatment options of problems experienced in special populations or different age groups in normal daily activities or the sporting arena. Furthermore, this integration will enhance the previously taught assessment and diagnostic techniques in the development of appropriate management and treatment programs of the lower extremity in different populations.

400940.1 Podiatric Techniques 3B

Credit Points 10 **Level** 7

Assumed Knowledge

As this unit builds on the concepts presented in Clinical Pharmacology and Microbiology, an understanding of the pharmacokinetics and dynamics of drugs is recommended.

Incompatible Units

400146 - Pharmacology and Dermatology

Special Requirements

Podiatry specific

.....

This unit will introduce students to clinical and theoretical foundations of dermatology including the function and structure of the skin, assessment, diagnosis, aetiological factors and the management of disorders of the skin, with particular emphasis on common foot conditions.

400941.1 Podiatric Techniques 3C

Credit Points 10 **Level** 7

Assumed Knowledge

Podiatric Techniques 1B, Pathophysiology 1, Human Anatomy and Physiology 1 and 2 and Appendicular Skeleton.

Incompatible Units

400151 - The High Risk Foot, 400153 - Gerontology and Neurology

Special Requirements

Podiatry specific.

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This unit will introduce students to clinical (practical hands on) and theoretical foundations of the management of the high risk foot. The unit consists of coordinated lectures and practical components to cover the overview of systemic conditions covered in pathophysiology and will explore the management of the foot and lower extremity manifestations associated with vascular, endocrine, neurological and immunosuppression. Particular emphasis will be placed on the foot at risk and podiatry assessment, diagnosis and management in context of a health profession team management approach. Diagnostic assessment techniques, both clinical and laboratory based will be covered. Infection control, wound classification and wound care management will be discussed in detail.

400933.1 Podiatry Pre-Clinical

Credit Points 10 **Level** 2

Assumed Knowledge

Introduction to Podiatry, Anatomy, Communication skills and Biomechanics.

Prerequisite

400905.1 Introduction to Podiatry AND **400881.1** Functional Anatomy AND **400871.1** Professional Health Competencies AND **400732.1** Communication in Health AND **400882.1** Introduction to Biomechanics

Incompatible Units

400133 - Podiatry Pre-clinical Studies

Special Requirements

Podiatry specific. Must hold a: 1. Senior First Aid Certificate and completed the OxyViva Resuscitation and EpiPen components as administered by a work cover accredited educational body. 2. Current Criminal Record Check (CRC) 3. Prohibited Employment Declaration 4. NSW Health Department Category A Vaccinations

.....

This unit will build on the skills introduced in Year One with an emphasis on clinical competencies in patient communication and management. The clinical component will cover an introduction to basic treatment skills of skin conditions and the evaluation of functional anatomy, gait, cursory examinations and communication. Introduction to general clinical treatment skills such as chair side devices and strapping and removable pads to more complex skills such as the manufacture of non-cast orthotic devices will be covered.

400870.1 Population Health and Society

Credit Points 10 **Level** 1

Equivalent Units

400781 - Dynamics of Health, 400270 - Meanings of Health and Models of Care

.....

This unit deals with foundational concepts and factors relating to population health in our society. Issues that determine both social and environmental aspects of disease, health and wellbeing will be examined. Contemporary problems impacting on states of health will be explored, including current day trends in communicable and non-communicable disease.

700066.1 Population Health and Society (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

400870 - Population Health and Society

Special Requirements

Students must be enrolled at UWS College.

This unit deals with foundational concepts and factors relating to population health in our society. Issues that determine both social and environmental aspects of disease, health and wellbeing will be examined. Contemporary problems impacting on states of health will be explored, including current day trends in communicable and non-communicable disease.

200078.1 Portfolio Management

Credit Points 10 **Level** 3

Assumed Knowledge

200057 - Investment Management

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This unit covers the contemporary theory of portfolio analysis and management. Topics include: risk and diversification; the two and n security case; the Markowitz efficient frontier; investor indifference curves and optimal portfolios; CML and optimal portfolios; beta, SML and the discount rate re-visited; Sharpe single index model and APT asset allocation; investments to the portfolio and portfolio strategies; measuring portfolio performance and security selection decisions; active portfolio management; international diversification; process of portfolio management; and risk management and hedging.

300452.1 Postharvest

Credit Points 10 **Level** 2

Assumed Knowledge

This unit assumes that students have a basic knowledge of biology, plant morphology and anatomy, chemistry and mathematics. Students are also assumed to be familiar with the World Wide Web and the tools for database searching and basic computer packages such as WORD and EXCEL.

Equivalent Units

HT203A - Introduction to Postharvest

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This unit explores the factors affecting the retention of quality of fresh fruit, vegetables and cut flowers from grower to consumer. Topics include: the role of fresh produce for the health and happiness of people; the growth and maturation and physiology of fresh produce; the importance of managing temperature and relative humidity of the storage environment; the responses of fresh produce to changes in temperature and water loss; the role of ethylene in fruit ripening and senescence; the practical issues of assessing harvest maturity; packaging; distribution and the control of postharvest diseases and pest and the concepts of market access.

300052.1 Power and Machines

Credit Points 10 **Level** 2

Prerequisite

300005.1 Circuit Theory

Equivalent Units

84239 - Introduction to Power and Machines

.....

This unit introduces basic concepts of power and machines, including an introduction to modern power systems and transformers, and fundamentals of electromechanical energy conversion. It also covers magnetic circuits, modern permanent magnet materials and their characteristics, and balanced and unbalanced three-phase power systems.

200752.1 Power, Politics and Knowledge

Credit Points 10 **Level** 3

Equivalent Units

H3743 - Power Politics and Knowledge, 200583 - Power, Politics and Knowledge

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The core aim of this unit is to provide students with a thorough grasp of the complex relationships between power, politics and knowledge in organisational settings. It also highlights the need for managers to use power ethically and equitable. These aims are addressed through an examination of a range of theories of power and topics such as: distribution and exercise of power in organisational settings, organisational politics, gender and power, language and power, resistance to power, and others. Innovative class activities and assessment methods (e.g., reflective brainstorming; storytelling; film analysis) are used in this unit to ensure that students are able to effectively apply theoretical concepts to real life situations.

400156.1 Practice Management for Health Professionals

Credit Points 10 **Level** 3

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This unit is aimed to introduce the student to the management issues in establishing and working in a clinical practice. While the unit will cover issues related to health professionals and public sector management, the focus of the unit will be on issues in private practice. The aim of the unit is to introduce the student to a wide range of topics, including an over view of health care funding in Australia, private and public health system, developing a business plan, different business structures, financial management, managing staff and occupational health and safety issues.

300502.1 Primary Production

Credit Points 10 **Level** 1

Equivalent Units

AG103A - Farming Systems, 300450 - Horticultural Production 1

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This unit overviews farming systems, primary production industries and enterprises. It introduces ethical issues relating to primary production and their associated industries and investigates many principles and techniques of agricultural and horticultural production. A major feature of this unit is the opportunity to develop practical production management skills through the production of selected crops in the field.

300671.1 Principles and Practice of Decision Making

Credit Points 10 **Level** 3

Assumed Knowledge

200192 Statistics for Science or 200032 Statistics for Business or 200263 Biometry and 200189 Concepts of Mathematics and 300606 Foundations of Statistical Modelling and Decision Making

Equivalent Units

200043 - Stochastic Decision Theory, 200035 - Decision Analysis and Statistical Process Control

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This Level 3 unit investigates models for making optimal decisions under conditions of uncertainty and presents a number of relevant quantitative techniques. Topics covered include probabilistic and non probabilistic decision making criteria, decision trees, sensitivity analysis, using utility for decision making and risk analysis, inventory management, queuing analysis, and introduction to simulation.

300554.1 Principles of Chemistry

Credit Points 10 **Level** 1

Equivalent Units

300224 - Chemistry 1, J1753 - Chemistry 1

Incompatible Units

300469 - Introductory Chemistry

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Students studying at Hawkesbury or Parramatta campus should refer to 300224 - Chemistry 1. This unit provides an introduction to the principles fundamental to all branches of chemistry. It focuses on atomic structure, periodicity, electronic configuration, structure and bonding, chemical equations, stoichiometry, the mole concept, gas laws, states of matter, intermolecular forces and properties of solutions, chemical thermodynamics, chemical equilibria, electrochemistry, scientific notation, and nomenclature. The unit will emphasise their application to biomedical science, but it is intended to provide a broad, rigorous foundation for studies in all areas of chemistry.

200525.1 Principles of Economics

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics

Equivalent Units

200076 - Introductory Economics, 200046 - Microeconomics, EC102A - Principles of Economics

Special Requirements

External offerings for this unit are only available to students who are enrolled in a Property course or Property Key Program.

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This unit is an introduction to economic concepts and contemporary economic issues. It introduces students to

basic concepts such as markets and their operation, the behaviour of firms, the efficiency and potential failings of free markets, the role of government, key macroeconomic variables and problems such as unemployment. It illuminates these concepts via application to contemporary economic issues and debates over different theoretical perspectives. This unit also exposes students to recent developments in economics via presentations by specialist guest lecturers.

100483.1 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

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This unit provide students with an introductory understanding of a range of communication theories and practices necessary for academic work and professional success.

700040.1 Principles of Professional Communication 1 (UWSC)

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

Special Requirements

Students must be enrolled at UWS College.

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This unit provides students with an introductory understanding of a range of communication theories and practices necessary for academic work and professional success.

200040.1 Probability & Stochastic Processes

Credit Points 10 **Level** 3

Assumed Knowledge

Concepts of Mathematics, and Statistical Theory.

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This is an introduction to stochastic processes for students familiar with elementary probability. This unit presents the theory and application of time-dependent processes. In addition the unit applies some methods of probability and stochastic processes to real-world problems. Topics include: Markov chains, Poisson processes, continuous-time Markov chains, branching processes, birth and death processes, queuing systems, and stationary processes.

200575.2 Processes and Evaluation in Employment Relations

Credit Points 10 **Level** 3

Prerequisite

200300.1 Managing People at Work

Equivalent Units

200381 - Human Resources Development Seminar

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This unit applies theory and skills developed throughout the key program in HRM/IR 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. Evaluation of non-employment relations policies and procedures in terms of their potential impact on employment relations performance will also be assessed. Sustainable and competitive employment relations will be evaluated at organisational, local, regional, national and industry levels.

300578.2 Professional Development

Credit Points 10 **Level** 3

Assumed Knowledge

The following knowledge is assumed: Understanding of Systems Analysis and Design; Ability to express oneself clearly and correctly, both orally and in writing, before an assembly of professional people.

Equivalent Units

300372 - Professional Preparation and Project Management

Special Requirements

Students must have completed 140 credit points in their course before enrolling in this unit. For students enrolled in 3663 Graduate Certificate in Health Informatics, 3645 Graduate Diploma in IT and 3646 Graduate Certificate in ICT this pre-requisite is not applicable.

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This is a final year unit that builds on foundation and intermediate computing units to prepare students for professional experience. The unit covers the content in three modules as 1) Ethics and Professional Code of Conduct, 2) Project Management, and 3) Legal, Social, Environmental issues, Quality Assurance and IT Compliance. The content covered in these three modules are carefully designed to fill in the gaps in knowledge that is not so far covered previous units in preparing students for the challenging projects units and professional working life ahead. This unit is a pre-requisite to the capstone project, covered in Professional Experience Project unit.

400903.1 Professional Development and Work Experience

Credit Points 10 **Level** 2

Assumed Knowledge

It is expected that students have the knowledge and skills associated with the prerequisite units.

Prerequisite

400880.1 Fundamentals of Exercise Science

Corequisite

400326.1 Exercise Prescription for General Populations

Equivalent Units

400650 - Professional Practice in Sport & Exercise Science 2

Special Requirements

Students must be enrolled in course 4658 - Bachelor of Health Science (Sport and Exercise Science). Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) Adult Health Immunisation 4) Workcover accredited Senior First Aid Certificate

.....

Experience in the field of study is an essential ingredient in marketing an individual for employment and often for professional memberships. Professional Practice provides students with an opportunity to observe and assist Sport & Exercise Science practitioners in action and to learn in a practical "hands on" setting. Students will 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 exercise-related settings. This unit is the first of two units which require a work placement which is usually off campus.

300579.2 Professional Experience

Credit Points 10 **Level** 3

Prerequisite

300578.2 Professional Development

Equivalent Units

300097 - Computing Project 1

Incompatible Units

14951 - SAD Project, 14958 - SAD Project, 300136 - IT Support Practicum, 48528 - SAD Project, 61235 - Software Engineering Project 1, J3664 - Computer Project 3, 54919 - Computing Project A, 54920 - Computing Project B

Special Requirements

This is a final year capstone unit. Therefore in addition to the successful completion of pre-requisite unit 300578 - Professional Development, students should have completed at least 140 credit points, out of which at least 30 credit points are achieved by the successful completion of LEVEL 2 units owned by School of Computing and Mathematics. Due to the capstone nature, this unit can be undertaken only by students enrolled in 3506 - Bachelor of Computer Science, 3633 - Bachelor of Computer Science, 3639 - Bachelor of Information and Communication Technology, 3661 - Bachelor of Information and Communication Technology (Enhanced Pathway), 3654 -

Bachelor of Information and Communications Technology/
Bachelor of Arts, 3655 - Bachelor of Information and
Communications Technology/Bachelor of Business and
Commerce, 3656 - Bachelor of Information and
Communications Technology/Bachelor of Business and
Commerce (Accounting) or 3657 - Bachelor of Medical
Science/Bachelor of Information and Communications
Technology.

.....

Professional Experience is a final year 'capstone' project unit. This unit provides opportunities for students to gain hands-on experience in software systems requirements definition, analysis, design and implementation, in a real-world setting. Students work in groups, guided by an academic supervisor or an industry mentor, in achieving the goals set by the client that provides the project. Suitable projects are sourced from external organisations or within UWS by way of giving the students professional experience in independent learning and reflective practice.

400871.1 Professional Health Competencies

Credit Points 10 **Level** 1

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This unit introduces skills for studying and working in health science. Students will gain an understanding of the interdisciplinary and multi-disciplinary nature of health science practice in the 21st century, and how this interacts with the specialty health professions, client and community expectations of health care and employment opportunities in health science. Students will learn foundation competencies that will underpin their academic development and their safe, responsible and ethical practice in health science service environments.

700067.1 Professional Health Competencies (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

400871 - Professional Health Competencies

Special Requirements

Students must be enrolled at UWS College.

.....

This unit introduces skills for studying and working in health science. Students will gain an understanding of the interdisciplinary and multi-disciplinary nature of health science practice in the 21st century, and how this interacts with the specialty health professions, client and community expectations of health care and employment opportunities in health science. Students will learn foundation competencies that will underpin their academic development and their safe, responsible and ethical practice in health science service environments.

400783.1 Professional Pathways in Health Science

Credit Points 10 **Level** 1

Equivalent Units

400769 - Foundations of Health Sciences 400242 -
Foundation of Therapeutic Recreation

.....

The unit introduces students to professional issues, history and the philosophy in health sciences: health promotion, health service management and therapeutic recreation. Theories and key concepts of health promotion, health service management, social health and therapeutic recreation are introduced. Students will be introduced to an understanding of human development and the health science processes. Students will examine how human growth and development influences development of socio-economic, cultural, gender, environmental, health science issues. Students will begin an electronic portfolio to help them take more control over their education and assist students to make connections with their learning experiences while building critical and reflective skills. Therapeutic Recreation students will complete a 35 hour workplace learning placement. Health Promotion and Health Service Management students will complete a community project.

700075.1 Professional Pathways in Health Science (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

400783 - Professional Pathways in Health Science, 400769 -
Foundations of Health Science, 400242 - Foundations of
Therapeutic Recreation.

Special Requirements

Students must be enrolled at UWS College unless permission has been granted by the School of Biomedical and Health Science.

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This unit introduces students to professional issues, history and the philosophy in health sciences: health promotion, health service management and therapeutic recreation. Theories and key concepts of health promotion, health service management, social health and therapeutic recreation are introduced. Students will be introduced to an understanding of human development and the health science processes. Students will examine how human growth and development influences development of socio-economic, cultural, gender, environmental, health science issues. Students will begin an electronic portfolio to help them take more control over their education and assist students to make connections with their learning experiences while building critical and reflective skills.

300053.2 Professional Practice

Credit Points 10 **Level** 3

Prerequisite

300461.1 Engineering and Industrial Design Practice OR
300674.1 Engineering, Design and Construction Practice

Equivalent Units

85013 - Civil and Environmental Engineering Practice 2

Special Requirements

Successful completion of 160 credit points.

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The unit describes engineering and construction as professions. Professional ethics and legal obligations of Engineering and Construction professions will be highlighted. Theories related to contract and project management will also form a 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 and completion of a series of technical reports.

400968.1 Professional Practice in Aged Care and Disability

Credit Points 10 **Level** 3

Equivalent Units

400248 - Professional Practice in Aged Care, 400790 - Professional Practice in Aged Care and Disability

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This unit provides the student with an understanding of current trends underlying policies and services in the aged care and disability industry, which will help them to understand the dynamics of the changing aged care and disability service sector. Students will examine the strategic environments of aged care and disability to develop global and national perspectives, identify drivers of change and development, and the major players in aged care and disability policies. Students will develop an understanding of the aged care and disability competencies and determinants of well-being for aged and disabled persons, which can be used in their future roles in the health industry. Through reflections on practice in aged care and disability, students will develop an individual approach to aged care and disability service issues which they can use in the future as health care professionals.

400925.1 Professional Reasoning

Credit Points 10 **Level** 7

Special Requirements

Students must be enrolled in courses 4663 - Bachelor of Health Science/Masters of Occupational Therapy and 4664 - Master of Occupational Therapy. To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) successfully completed an approved Child Protection Workshop 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) possess a current WorkCover Authority approved First Aid Certificate.

.....

This final year unit focuses on the transition from student to practitioner. The aim of this unit is to provide students with learning opportunities that will consolidate and enhance

their competence in professional practice throughout their career. Professional competencies of central concern include advanced clinical reasoning skills, evidence based-practice, reflective practice, personal and career management strategies, self-directed and life long learning. These competencies contribute positively to the effective management of graduates' clinical practice in various work contexts, and their future career paths. Acquisition of such skills will allow the graduate to direct and adapt to change in these areas.

400177.1 Professional Reasoning

Credit Points 10 **Level** 5

Equivalent Units

E4114 - Ergonomics 3, E4116 - Occupational Therapy 6

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This unit will be replaced by 400925 - Professional Reasoning from 2013. This final year unit focuses on the transition from student to practitioner. The aim of this unit is to provide students with learning opportunities that will consolidate and enhance their competence in professional practice throughout their career. Professional competencies of central concern include advanced clinical reasoning skills, evidence based-practice, reflective practice, personal and career management strategies, self-directed and life long learning. These competencies contribute positively to the effective management of graduates' clinical practice in various work contexts, and their future career paths. Acquisition of such skills will allow the graduate to direct and adapt to change in these areas.

300497.1 Professional Skills for Science

Credit Points 10 **Level** 1

Assumed Knowledge

Basic literacy and numeracy skills (high-school level).

Equivalent Units

300270 - Professional Skills for Science & Technology, HT104A - Plants in Society

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This unit is designed to provide students with academic and generic skills required for successful completion of their science-related undergraduate studies and for professional practice. Activities allow students to learn, develop and utilise various academic and interpersonal skills within the wider context of applied scientific principles in society. Activities encourage development of self-confidence, creative thinking, problem solving, group process, communication and peer support. Academic skills include aspects of scientific reading and writing, assignment preparation, gathering scientific information, research and library skills, oral presentation, group work, taking tests and exams, effective personal and class-based learning strategies, peer assessment and online learning.

700042.1 Professional Skills for Science (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300497 - Professional Skills for Science, HT104A - Plants in Society, 300270 - Professional Skills for Science and Technology

Special Requirements

Students must be enrolled at UWS College.

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This unit is designed to provide students with the academic and generic skills required for successful completion of their science-related undergraduate studies and for professional practice. Activities allow students to learn, develop and utilise various academic and interpersonal skills within the wider context of applied scientific principles in society. Activities encourage the development of self-confidence, creative thinking, problem solving, group process, communication and peer support. Academic skills include aspects of scientific reading and writing, assignment preparation, gathering scientific information, research and library skills, oral presentation, group work, taking tests and exams, effective personal and class-based learning strategies, peer assessment, and online learning.

400786.1 Professional Transition Project

Credit Points 10 **Level** 3

Special Requirements

The unit is for final semester Bachelor of Health Science students.

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This unit is designed to assist students to make the transition from undergraduate student life to professional life. The student centred learning approach used in this unit enables students to focus their own learning styles and personal capabilities. Students will explore the strengths and weaknesses of their own learning styles and develop strategies to strengthen their personal learning and teaching capabilities for use as professionals. A structure for developing professional performance will be introduced that includes: management skills, interpersonal skills, problem solving skills, project and procedure skills, personal growth, development and socialisation and education roles. Students will participate in hands-on instructor led sessions, through the E-portfolio project to reflect on and connect academic experiences with their life to anticipated graduate capability

700047.1 Programming Design (UWSCFS)

Credit Points 5 **Level** 2

Special Requirements

Students must be enrolled at UWS College.

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Programming Design introduces students to the principles required for the effective design of solutions to computer program related problems. The course has been developed

to enhance a student's practical ability as well as build a solid theoretical foundation for further study.

300580.1 Programming Fundamentals

Credit Points 10 **Level** 1

Equivalent Units

300405 - Fundamentals of Programming, 300155 - Programming Principles 1, 200122 - Business Application Development 1

.....

As a first unit in computer programming, Programming Fundamentals covers basic computer architecture, basic data and file structures, concept of algorithms, programming constructs, programming language features and functions, program design, test design, basic documentation. A high level programming language is employed to solve problems in a structured manner.

700008.1 Programming Fundamentals (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300405 - Fundamentals of Programming, 300155 - Programming Principles 1, 200122 - Business Application Development 1, 300580 - Programming Fundamentals

Special Requirements

Students must be enrolled at UWS College.

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As a first unit in computer programming, Programming Fundamentals covers basic computer architecture, basic data and file structures, concept of algorithms, programming constructs, programming language features and functions, program design, test design, basic documentation. A high level programming language is employed to solve problems in a structured manner.

300581.1 Programming Techniques

Credit Points 10 **Level** 2

Assumed Knowledge

Entry to the unit requires a working knowledge of programming concepts, such as standard control logic, modularization, and parameter passing, as well as a demonstrable skills of using selection, iteration, functions and one-dimensional array in a high-level programming language, such as C or C++.

Prerequisite

300580.1 Programming Fundamentals

Equivalent Units

300156 - Programming Principles 2, 300147 Object-Oriented Programming

.....

This unit builds on the programming foundation laid in the unit Programming Fundamentals. Utilising an object-oriented language it continues the development of programming skills and methodologies required for professional programming and for further study in later

computing units. Topics covered include object-oriented programming techniques of encapsulation, inheritance and polymorphism, programming concepts including pointers, references, multi-dimensional arrays, strings, file I/O, and abstract data types.

300727.1 Project Management

Credit Points 10 **Level** 3

Assumed Knowledge

An understanding of construction planning and planning techniques (such as critical path method).

Equivalent Units

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: Human Resources Management of time, management of cost, quality, resources and communications and contract administration.

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.

300555.1 Proteins and Genes

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of cell structure; chromosomes, mitosis and meiosis; structure of DNA and its role as carrier of genetic information; Mendelian genetics; chemical bonding, including covalent, hydrogen and ionic bonds and hydrophobic interactions; properties of water, acids, bases and buffers; structure of common functional groups; stereoisomerism; stoichiometry; principles of chemical reactions. Basic mathematical principles, as taught in Fundamentals of Mathematics.

Prerequisite

300543.1 Cell Biology OR **300221.1** Biology 1 AND **300550.1** Medicinal Chemistry OR **300225.1** Chemistry 2

Equivalent Units

300219 - Biochemistry 1, J2820 - Introductory Biochemistry

Incompatible Units

14437 - Biochemistry, 300227 - General Biochemistry, BC201A - Biochemistry 2.1

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Students studying at Hawkesbury or Parramatta campus should refer to 300219 - Biochemistry 1. This unit investigates protein structure, function, synthesis and degradation in both health and disease. Students will analyse how proteins fold and how this relates to function, illustrated by proteins such as oxygen carriers, enzymes, and gene regulators. The importance of bioinformatics for analysing protein structure, function and evolution will be emphasised. Discussion of enzyme structure and catalytic mechanisms will provide a deeper understanding of how catalytic proteins work. DNA, gene structure and gene expression (transcription and translation) will be investigated in some detail at the molecular level, including the impact of mutation on protein function. The relevance of post-translational modification, protein targeting and protein degradation for healthy cell function will also be discussed.

101614.1 Psychology and Health

Credit Points 10 **Level** 1

Equivalent Units

400136.1 Introduction to the Psychology of Health

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This unit provides an introduction to the psychology of health and behaviour as relevant to the health sciences. Students will be introduced to the principles and applications of psychology and health behaviour using a developmental framework. This will be followed by an examination of the psychological aspects of injury and illness and an introduction to psychological interventions for health concerns. Emphasis is upon understanding health status and behaviour in light of relevant theory and research.

700060.1 Psychology and Health (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

101614 - Psychology and Health

Special Requirements

Students must be enrolled at UWS College.

.....

This unit provides an introduction to the psychology of health and behaviour as relevant to the health sciences. Students will be introduced to the principles and applications of psychology and health behaviour using a developmental framework. This will be followed by an examination of the psychological aspects of injury and illness and an introduction to psychological interventions for health concerns. Emphasis is on understanding health status and behaviour in light of relevant theory and research.

400285.1 Public Health

Credit Points 10 **Level** 2

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This is a flexible learning unit that deals with foundational concepts and issues relating to public health. The philosophical and historical development and the roles of public health in Australia are examined, as are the theories, policies, politics and principles that govern and inform practice. Emphasis is placed on understanding health issues and concerns in Greater Western Sydney Region as well as on national and international contexts of population health. The unit draws on current and emerging practical situations to highlight the dynamic yet continuing legacy of public health.

300748.1 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.

200167.1 Quality Management

Credit Points 10 **Level** 3

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The principles taught in Quality Management underpin the successful management of all business enterprises. Students enrolled in this unit will be introduced to the latest concepts in performance excellence, with a strong emphasis on service quality. Various tools and techniques that support performance excellence are presented, including ISO9000, Six Sigma, and high-performance human resource practices. Contemporary areas covered in this unit involve identifying customers' needs, and involvement in organisational performance which is supported by continuous improvement and organisational learning.

200045.2 Quantitative Project

Credit Points 10 **Level** 3

Special Requirements

This is an advanced project unit involving individual supervision of students. It will be restricted to students who have successfully completed 30 credit points of level 2 mathematics/statistics units from 200028 Advanced Calculus, 200033 Applied Statistics, 200030 Differential Equations, 300606 Foundations of Statistical Modelling and Decision Making, 200042 Introduction to Operations Research, 200027 Linear Algebra, 200029 Numerical Analysis and 30 credit points of level 3 mathematics/statistics units from 200193 Abstract Algebra, 200023 Analysis, 200036 Data Mining and Visualisation, 200024 Mathematical Finance, 200022 Mathematical Modelling,

300670 Optimisation Techniques, 300671 Principles and Practice of Decision Making, 200040 Probability & Stochastic Processes, 200037 Regression Analysis & Experimental Design, 200044 Simulation Techniques, 200039 Surveys and Multivariate Analysis, 200038 Time Series and Forecasting. These restrictions are to ensure that students have sufficient mathematical maturity to undertake an independent project, and because staffing limitations preclude the unit from being offered to less prepared students.

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In this unit, students can deepen and/or apply knowledge gained during their course and practise oral and written presentation skills. Students will carry out a project under the supervision of an academic staff member. Assisted by their supervisor, students will define the problem to be studied and then acquire, develop and/or apply the appropriate theory or methodology. They will prepare a final report presenting theoretical results or methodology, an analysis and a discussion followed by an appropriate conclusion, and a literature review or a list of references as appropriate. Students will also give a talk on their project.

400148.2 Quantitative Research

Credit Points 10 **Level** 2

Assumed Knowledge

Students should be able to perform basic mathematic operation and have some understanding of research process.

Equivalent Units

E2230 - Biostatistics for the Health Sciences, 25719 Quantitative Research, 25823 - Quantitative Research

.....

This unit is being replaced by 400864 Research Methods (Quantative and Qualitative) in 2011. This unit will explore essential elements of quantitative research methods as used in health sciences. It will prepare students for the planning, designing, conducting, evaluating and reporting of a research project. The most common research designs will be examined for their relative strengths and weaknesses, with particular emphasis on how these will have an impact on interpretation and conclusion of the study. It will also introduce basic concepts in epidemiology and biostatistics as well as in using SPSS to analyse and interpret data. The overall aim is to provide skills in designing and evaluating research studies in health sciences.

200486.1 Quantity Surveying 1

Credit Points 10 **Level** 2

Assumed Knowledge

BG101A - Building 1 and BG103A - Building 2: Specifically building construction including residential, light industrial and small commercial.

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This unit is designed to develop the techniques required to measure, quantify and prepare bills of quantities for residential construction. It will help students to develop an understanding of the factors that affect the cost of building

and introduces costing techniques for work on new and existing buildings.

200487.2 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

200486.1 Quantity Surveying 1

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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.

300419.1 Quantum Properties of Chemical Systems

Credit Points 10 **Level** 2

Assumed Knowledge

Successful completion of at least one chemistry unit and one physics unit at undergraduate level.

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The unit builds on quantum concepts that have been introduced in earlier units such as chemistry, physics and nanotechnology. It aims to develop the students' understanding of quantum principles as they apply to chemical systems, including atoms, molecules and extended arrays such as metals and semiconductors. Starting with a restatement of some fundamental principles, the unit will consider simple quantum models including the hydrogen atom, then introduce molecular-orbital theory and some of its applications to chemical systems. The unit will also provide a brief introduction to some semiempirical, ab initio and density-functional methods for modelling molecules of interest in nanotechnology.

300489.1 Radio and Satellite Communication

Credit Points 10 **Level** 4

Assumed Knowledge

Physics and Materials, Mathematics for Engineers 1 and 2, Astrophysics

Prerequisite

300007.1 Communication Systems OR **300010.1** 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.

400201.3 Readings and Methodology

Credit Points 10 **Level** 5

Assumed Knowledge

A basic knowledge of research methods at undergraduate level or equivalent is required.

Special Requirements

Students must be enrolled in the Bachelor of Nursing (Honours).

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This unit will broaden and deepen students understanding of research methodologies and develop research skills in order to apply these to a specific B Nursing (Honours) research project.

200037.2 Regression Analysis & Experimental Design

Credit Points 10 **Level** 3

Prerequisite

200192.1 Statistics for Science OR **200032.3** Statistics for Business OR **300700.3** Statistical Decision Making OR **200263.2** Biometry OR **200052.3** Introduction to Economic Methods OR **200033.3** Applied Statistics

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This unit covers regression analysis and experimental design. The regression section of the unit develops the theory and application of one of the most commonly used statistical tools: regression analysis. Topics covered include simple linear regression, multiple regression, and model diagnostics and selection. The experimental design section deals with completely randomized design, randomized block design, Latin square design, and factorial experiment models. Such design models are useful for applications in engineering and physical sciences and in the business and behavioural disciplines. The integration of the theory and practice of the two sections will be enhanced by using the statistical computing package MINITAB.

400803.2 Research in Nursing Practice

Credit Points 10 **Level** 5

Assumed Knowledge

A basic knowledge of research methods at undergraduate level.

Incompatible Units

400200 - Applied Nursing Research

Special Requirements

Students must be enrolled in Bachelor of Nursing (Honours).

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Research is a necessary undertaking toward the continued development of nursing science and practice. The aim of this unit is to both broaden and deepen students' understanding of research methods and to extend their ability to discuss, appraise the work of others and participate in their own research.

300411.3 Research Methodology and Experimental Design

Credit Points 20 **Level** 8

Assumed Knowledge

Appropriate background in a scientific discipline to conduct research in that area. No previous research experience is required.

Equivalent Units

SC809A - Research methodology and experimental design, 14429 - Science research project, proposal and seminar

Incompatible Units

300398 - Methods of Researching

Special Requirements

Students must be enrolled in a postgraduate degree.

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This unit is being replaced by 300768 Methods of Scientific Researching in 2011. This unit introduces students to the principles and tools of scientific research. It is designed for students who are undertaking Master of Science and those who have not previously undertaken training in research. Students attend a series of classes covering topics such as critical thinking, problem definition, formulation and testing of hypotheses, analysis of quantitative and qualitative results, communication of research findings, bibliographic techniques and advanced information retrieval methods. Students are required to prepare a intention to research, a annotated bibliography, seminar, and a research poster.

300662.1 Research Methods

Credit Points 10 **Level** 2

Equivalent Units

300290 - Researching Communities and Their Environments, 300561 - Animal Research

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This unit is designed to help students understand and navigate their way through the scientific inquiry process, and to make inquiry a meaningful experience. It highlights the creative and strategic thinking skills needed to negotiate research, and covers the entire inquiry process from conceptualisation and design through to data collection, analysis, and report writing. The unit transcends traditional paradigmatic and disciplinary boundaries by approaching research from the ground up – a research question based perspective.

400864.2 Research Methods (Quantitative and Qualitative)

Credit Points 10 **Level** 2

Prerequisite

400863.1 Foundations of Research and Evidence-Based Practice

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This unit further explores research methods used to acquire knowledge in healthcare. This includes research designs, international standards, key statistics, and interpretation of

results. The range of health research methods will be presented, and studies about treatment effectiveness (clinical trials and systematic reviews), diagnostic effectiveness and qualitative approaches will be explored in detail. The pathways and resources for conducting beginner research will also be introduced in this unit.

200412.4 Research Proposal and Seminar

Credit Points 10 **Level** 5

Assumed Knowledge

Students to have the basic disciplinary knowledge and skills necessary to design and undertake their honours level research project.

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The aim of this unit is to identify a suitable honours thesis topic, conduct a preliminary review of the relevant literature, identify research methods applicable to the study, consider any relevant ethical issues applicable to the study, devise a resource management plan and schedule of study and to seek feedback and input from academics with appropriate skills and experience in the research area. This unit gives honours students access and exposure to research communities via attendance and participation at school research seminars. Students will publicly present and defend their thesis proposal to peers and the academic community.

400890.1 Resistance Training and Physiology

Credit Points 10 **Level** 3

Prerequisite

400883.1 Exercise Bioenergetics AND **400885.1** Sport and Exercise Physiology AND **400888.1** Advanced Sports Physiology

Special Requirements

This unit is only available to students enrolled in course 4658 - Bachelor of Health Science (Sport and Exercise Science). To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) possess a current WorkCover Authority approved First Aid Certificate.

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Resistance Training and Physiology presents the growing body of research evidence supporting specific methods of resistance exercise and training, as well as the role of resistance exercise in disease prevention and health promotion. Students gain an increased understanding of the energetics and physiology of resistance exercise by also completing laboratories focussed on the research of important applied concepts in resistance exercise and training. Students also experience resistance training.

300663.1 Resource Sustainability

Credit Points 10 **Level** 1

Assumed Knowledge

Basic biological sciences and an understanding of writing & referencing.

Equivalent Units

EY101A - Terrestrial Environmental Management

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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.

200739.1 Reward and Performance Management

Credit Points 10 **Level** 3

Prerequisite

200300.1 Managing People at Work

Incompatible Units

200611 - Management of Employee Performance, 200612 - Remuneration Theory and Practice

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The unit introduces students to critical perspectives in reward management. The structure of the course is initially thematic and considers in turn: the wider context in which reward strategies are devised; the strategic decisions that arise in the organisational context if reward is to meet regulatory requirements, the organisation's objectives and the expectations of the workforce, and the component parts (base pay, variable play, transactional rewards, relational rewards of contemporary reward). This unit examines the relationship between performance and reward, performance management systems and the alignment of employer performance with achievement of organisational objectives. Various models of performance management and performance appraisal techniques are critically assessed.

300056.2 Robotics

Credit Points 10 **Level** 4

Prerequisite

300463.1 Fundamentals of Mechanics

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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.

700059.2 Science for Health Science (UWSCFS)

Credit Points 10 **Level** Z

Equivalent Units

900049 - Science for Health Science (UWSC), 900068 - Science for Nursing (UWSC)

Special Requirements

Students must be enrolled at UWSCollege.

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This unit replaces 700059.1 Science for Health Science (UWSCFS) from Term 1 2011. The depth of knowledge and practical skills required by health professionals in the 21st century are very different to that which were required in the past. Medical treatment of illness and disease has become increasingly technical and health professionals are expected to work in partnership in determining patient care. In order to achieve this, today's health professional must have a basic understanding of the fundamental scientific principles behind both the diseases and their treatments. Increasingly, modern health science is concerned with maintaining health as a way of preventing disease and this is achieved through a holistic approach to the human state. This course is an introduction to the basic concepts in physics, chemistry and biology that will be required in order to commence any tertiary health science course.

300664.1 Science in Society

Credit Points 10 **Level** 2

Assumed Knowledge

Sound knowledge of the issues affecting primary industries, community health or the environment. Ability to write technical reports and experience in problem based learning approaches. Literacy skills associated with data retrieval and literature searching. Basic knowledge of group dynamics.

Equivalent Units

300283 - Community Environmental Health Action

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This unit examines the complex interaction between power, politics, ethics and scientific paradigms in the management of natural agricultural and built environments. As such its foundations are in the field of environmental studies with a particular focus on the role of science graduates in the social interactions that govern societies use, transformation and impact on these environments. The rationale for the inclusion of a sociological perspective in a science degree is that scientists do not operate in a social vacuum, but are constantly subject to broader social, economic, political, ethical and cultural influences that bear upon the distribution and exercise of power and knowledge in organisations and in society as a whole.

300788.1 Science Research Project

Credit Points 10 **Level** 3

Assumed Knowledge

This unit is aimed at undergraduates in their final year of undergraduate study who have a good grounding in the Level 2 units for the discipline area of their individual project (e.g. chemistry, biochemistry, microbiology, environmental science.)

Equivalent Units

300645 - Science Research Project 2, 300299 - Chemistry Project 3, J3659 - Biological Science Project 3, 14117 - Chemistry Project

Incompatible Units

300542.1 - Biomolecular Science Project

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This is a final-year capstone unit that gives students an introduction to scientific research, while extending their knowledge and practical skills in a particular area of interest. Each student undertakes a small research project under the supervision of an academic staff member. Collaboration with an external organisation may occur in some projects. With the assistance of their supervisor, students will define the problem to be studied, carry out a risk assessment, develop the appropriate experimental methods, carry out research on their project, and present a final written report and a poster or oral presentation. This unit offers a challenge to final-year students, and allows innovation by the student with respect to both method and research direction.

300645.1 Science Research Project 2

Credit Points 10 **Level** 3

Assumed Knowledge

This unit is aimed at undergraduates in their final year of undergraduate study who have a good grounding in the Level 2 units for the discipline area of their individual project (e.g. chemistry, biochemistry, microbiology, environmental science.)

Equivalent Units

300299 - Chemistry Project 3, J3659 - Biological Science Project 3, 14117 - Chemistry Project, J3662 - Chemistry Project

Incompatible Units

300542 - Biomolecular Science Project

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300645 Science Research Project 2 is a final-year capstone unit that gives students an introduction to scientific research, while extending their knowledge and practical skills in a particular area of interest. Each student undertakes a small research project under the supervision of an academic staff member. Collaboration with an external organisation may occur in some projects. With the assistance of their supervisor, students will define the problem to be studied, carry out a risk assessment, develop the appropriate experimental methods, carry out research on their project, and present a final written report and a poster or oral presentation. This unit offers a challenge to

final-year students, and allows innovation by the student with respect to both method and research direction. Students who wish to complete a 10 credit-point project will normally enrol in this unit. Subject to permission from the Unit Co-ordinator, students may undertake a 20 credit-point project by enrolling in both 300615 Research Project 1 and 300645 Research Project 2. These units may be taken in the same semester, or in consecutive semesters. Students studying at Campbelltown campus should refer to 300542 Biomolecular Science Project.

300412.2 Science, Technology and Environment Honours Project

Credit Points 60 **Level** 5

Assumed Knowledge

Successful completion of a Bachelors degree in a science discipline. Normally the student will have achieved a grade point average of greater than 5.0 in Level 2 and 3 units.

Special Requirements

Students must be enrolled in postgraduate or honours courses.

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The aim of this unit is to further develop the student's research and problem solving skills. The student is required to implement a research plan, complete a substantive piece of research in a relevant field within Science, Technology and the Environment and to communicate the results of that work to an interested and technically literate audience. Students will present their research as a thesis with a substantial chapter detailing research objectives, methodology and research outcomes. The thesis topic and structure will vary according to the area of interest of the student and the expertise of the supervisor. The project is meant to be a significant undertaking and to incorporate some element of innovation. Throughout this unit regular planned consultations between the student and supervisor (s) will occur and students will be required to attend seminar series or regular research meetings; these may be formal components of other units within the Bachelor (Honours) course. Students are expected to work to a schedule devised in consultation with their supervisor. The schedule will include dates set for progress reports and the presentation of draft chapters for review by the supervisor. The unit builds upon the skills developed in the undergraduate course, extending students' competencies in a range of practical techniques and processes of critical thinking. Students who successfully complete the Honours program will have achieved the appropriate background to enable them to pursue further postgraduate research and/or coursework in the sciences or pursue a career in industry or profession.

400737.1 Scientific Basis of Medicine 1

Credit Points 60 **Level** 1

Corequisite

400738.1 Health Practice 1

Special Requirements

Students must be enrolled in the course 4641 Bachelor of Medicine, Bachelor of Surgery. Students must have completed a Prohibited Persons Employment Declaration; undergone a Criminal Record Check; have completed a

WorkCover accredited Senior First Aid Certificate; and have an up to date Adult Vaccination Record. Students must also sign a declaration that they understand and comply with Infectious Diseases Policy, Health Records and Information Privacy Act (HRIPA) 2002; and UWS' submitting their details to the NSW Medical Board.

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The corequisite for this unit is 400738 Health Practice 1. Both units must be completed successfully in the same year, in order for you to progress to the next year of the course. If one unit is failed or if both are failed, you must repeat both together in your next year of enrolment. The major objectives of this unit are to gain an integrated understanding of the structure and function of the human body. This will be addressed at the levels of organ systems, tissues, cells and molecules. The scientific basis of the following topics will be discussed: whole body organisation including basic anatomy, roles of the major organ systems, functional organisation of cells and their specific organelles, characteristics of specialised cells, structure-function characteristics of major biological molecules including carbohydrates, lipids, proteins, enzymes and DNA, the biochemical basis of complex processes such as homeostasis, reproduction and inheritance, growth and development, defence against infectious agents, pathological changes, ageing and death. The unit then examines nutrition and metabolism before exploring the structure, function and pathology of the gastrointestinal system (including liver), cardiovascular system and respiratory system.

200707.1 Service Industry Studies

Credit Points 10 **Level** 3

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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Service Industry Studies is designed to allow students to develop skills of research planning, execution, interpretation and results dissemination from service industry research projects. Students will learn about and have an opportunity to prepare a literature review, conduct research on a "problem", collect, analyse and present data on a hypothetical or case based service business issue. Strategies and recommendations in the form of a report will be the outcome of the unit.

300568.1 Services Computing in Healthcare

Credit Points 10 **Level** 3

Assumed Knowledge

Some ability in design and implementation of Web Applications is desirable but not essential. Students who have worked in the Health sector, or who have gained a broad understanding of Health system and uses of ICT therein may be exempted from the prerequisite unit.

Prerequisite

300566.1 Introduction to Health Informatics

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In this unit students will learn the concepts underpinning the services computing paradigm of "bridging the gap between Business Services and IT Services". Services Computing technology includes Web services and service-oriented architecture (SOA), business consulting methodology and utilities, business process modelling, transformation and integration. Students will learn, through the development of practical examples, how to utilise these technologies within a healthcare context.

300057.2 Signals and Systems

Credit Points 10 **Level** 2

Assumed Knowledge

300005 - Circuit Theory: this unit requires the knowledge in Laplace transforms, Calculus, Trigonometry and Complex number theory, since understanding of System theory and Fourier series and transform requires a strong background in those areas. Most of the examples and applications in this unit are based on Circuit Theory material.

Prerequisite

200238.1 Mathematics for Engineers 2

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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.

200044.1 Simulation Techniques

Credit Points 10 **Level** 3

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This unit covers a general introduction to simulation modelling, with a special focus on systems that change only at discrete points in time. It begins with Monte-Carlo methods for evaluating integrals, and moves into the simulation of simple queuing and inventory systems with the use of Pascal. It then introduces special simulation languages, with special reference to SEESIM. The purpose is to be able to set up and solve simple practical problems. In doing so we emphasise the need to analyse outputs statistically, and to offer advice on the basis of the analysis. Although requiring computer programming, the emphasis of the unit is mathematical and statistical. It deals with an introduction to random number generation by computers; it also deals with the computer generation of independent random variables with a common probability distribution.

300731.1 Soil Engineering

Credit Points 10 **Level** 2

Prerequisite

200237.1 Mathematics for Engineers 1

Equivalent Units

85012 - Soil Engineering

Special Requirements

Restriction on size of lab class.

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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.

300535.1 Soils

Credit Points 10 **Level** 1

Equivalent Units

HT102A - Soils (V1)

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This unit provides students with a basic understanding of soil formation and erosion processes, soil physical, chemical and biological properties, and the diversity and classification of soils in the Australian landscape. These basic principles are explored in relation to the sustainable management of soils for horticultural and agricultural production and for environmental management under other land uses. The practical sessions are designed to reinforce the lecture material and include field description and analysis of soil profiles and properties, soil sampling principles and practice, laboratory measurement of soil physical and chemical properties essential/important for plant growth, and an introduction to soil biology.

400919.1 Specialities in Traditional Chinese Medicine 1 (PG)

Credit Points 10 **Level** 7

Corequisite

400918.1 Chinese Internal Medicine 1 (PG)

Incompatible Units

400358 - Specialities in Traditional Chinese Medicine

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This unit provides learning experiences that enable the health professional to analyse, diagnose and treat common gynaecological diseases and musculoskeletal conditions using a TCM approach with acupuncture and Chinese herbal medicine. Students will develop a good understanding of the causes and pathophysiological mechanisms of common gynaecological diseases and musculoskeletal conditions.

400923.1 Specialities in Traditional Chinese Medicine 2 (PG)

Credit Points 10 **Level** 7

Prerequisite

400918.1 Chinese Internal Medicine 1 (PG)

Incompatible Units

400364 - Specialities in Traditional Chinese Medicine 2

The specialties of pediatrics, dermatology, ear, nose, throat (ENT) and eye diseases, are important divisions of TCM activity. This unit enables students to develop an understanding of the aetiology and pathophysiology of common paediatric, dermatological, ENT and eye disorders, and to analyze, diagnose and treat these conditions using acupuncture and Chinese herbal medicine.

400885.1 Sport and Exercise Physiology

Credit Points 10 **Level** 2

Assumed Knowledge

Students need to know human anatomy and physiology, as well as have an understanding of cellular energy metabolism and overall metabolic design. Students also need to apply basic concepts in maths and physics.

Prerequisite

300361.1 Introduction to Human Biology OR **400868.1** Human Anatomy and Physiology 1 AND **400869.1** Human Anatomy and Physiology 2 AND **400880.1** Fundamentals of Exercise Science

Equivalent Units

400323 - Physiology of Exercise

Special Requirements

Students must be enrolled in course 4658 - Bachelor of Health Science (Sport and Exercise Science).

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This unit is designed to provide the student with an understanding of the physiological basis of physical activity/exercise. Physiological factors influence and limit our capacity for and tolerance of exercise. Furthermore, regular participation in a well-designed exercise program can improve such capacities and related exercise tolerance. This unit will explain the responses of the Neuromuscular, Metabolic, Cardiovascular, Respiratory and Hormonal and systems to exercise and training. In addition, the influence of environmental factors and gender differences to exercise tolerance will be presented. Weekly laboratory experiences will reinforce lecture content, as well as allow the teaching of important laboratory skills and techniques used in exercise physiology research and professional practice.

400980.1 Sport and Exercise Psychology

Credit Points 10 **Level** 2

Assumed Knowledge

It is expected that students have the knowledge and skills associated with the prerequisite unit.

Equivalent Units

100678 - Introduction to Sport Psychology, 100680 - Exercise Psychology, 400322 - Sociological Aspects, 101615 - Sport and Exercise Psychology

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Sport and Exercise Psychology is a topic of particular relevance to those working in the sport, health and fitness, and performance industry. The field of Sport and Exercise Psychology is primarily concerned with the study of the psychological factors which impact on the adoption of physical activity, the maintenance of physical activity, and

the quality of sporting performance. This unit examines pertinent theory, research, and application in the field of Sport and Exercise Psychology.

200742.1 Sport and Hospitality Event Management

Credit Points 10 **Level** 3

Assumed Knowledge

Advanced unit, 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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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 knowledge and understanding by giving students the opportunity to practically apply skills and knowledge through development and execution of their own special event. The unit calls for students to apply previously learned management strategies, leadership theories, communication skills, and staff management to facilitate their event projects.

200751.1 Sport Management Applied Project

Credit Points 10 **Level** 3

Assumed Knowledge

Students are expected to have gained an introductory level of knowledge in sport management.

Prerequisite

200707.1 Service Industry Studies

Equivalent Units

200580 - Sport Management Applied Project

Incompatible Units

200561 - Hospitality Management Applied Project

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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. 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.

200664.1 Sport Management Internship

Credit Points 10 **Level** 3

Assumed Knowledge

Students are expected to have gained 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

Special Requirements

Some placement agencies require completion of a Prohibited Persons Declaration; Criminal Record Check Clearance and Immunisation.

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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.

200754.1 Sports Management - Planning and Development

Credit Points 10 **Level** 3

Assumed Knowledge

Students are expected to have gained an introductory level of knowledge in sport management.

Equivalent Units

200244 - Sports Management - Planning and Development

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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.

300700.3 Statistical Decision Making

Credit Points 10 **Level** 1

Equivalent Units

200192 - Statistics for Science, 200032 - Statistics for Business

Incompatible Units

200052 - Introduction to Economic Methods, 200182 - Quantitative Techniques, 200263 - Biometry

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Statistical Decision Making introduces students to various statistical techniques supporting the study of computing and science. Presentation of the content will emphasize the

correct principles and procedures for collecting and analysing scientific data, using information and communication technologies. Topics include describing different sets of data, probability distributions, statistical inference, and simple linear regression and correlation.

700041.2 Statistical Decision Making (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300700 - Statistical Decision Making, 200032 - Statistics for Business, 700007 - Statistics for Business (UWSC)

Incompatible Units

200052 - Introduction to Economic Modelling, 200182 - Quantitative Techniques, 200263 - Biometry, 700033 - Biometry (UWSC)

Special Requirements

Students must be enrolled at UWSCollege

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Statistical Decision Making introduces students to various statistical techniques supporting the study of computing and science. Presentation of the content will emphasise the correct principles and procedures for collecting and analysing scientific data, using information and communication technologies. Topics include describing different sets of data, probability distributions, statistical inference and simple linear regression and correlation.

700045.1 Statistics for Academic Purposes (UWSCFS)

Credit Points 5 **Level** Z

Special Requirements

Students must be enrolled at UWS College.

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Statistics for Academic Purposes is designed and written to prepare students for study in Statistics at first year university level. The unit develops those skills peculiar to the statistical requirements of further study in the areas of Arts, Business, Science and the Humanities.

200032.3 Statistics for Business

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics / Mathematics Extension 1 is desirable.

Equivalent Units

200052 - Introduction to Economic Methods

Incompatible Units

200182 - Quantitative Techniques, 200192 - Statistics for Science, 200263 - Biometry, 300700 - Statistical Decision Making

.....

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.

700007.2 Statistics for Business (UWSC)

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics.

Equivalent Units

200032 - Statistics for Business

Incompatible Units

200192 - Statistics for Science, 200052 - Introduction to Economic Methods, 200182 - Quantitative Techniques, 200263 - Biometry, 300700 - Statistical Decision Making

Special Requirements

Students must be enrolled at UWS College.

.....

This unit 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.

200192.1 Statistics for Science

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics or equivalent.

Equivalent Units

14324 - Statistics 1, 14327 - Statistical Methods, 200032 - Statistics for Business, J1730 - Mathematics 1.2, ST003A - Statistics 1.2D, ST109A - Statistics 1.1, 200263 - Biometry, 300700 - Statistical Decision Making

.....

In 2010 this unit replaced by 300700 - Statistical Decision Making. This Level 1 unit introduces the basic concepts and techniques of statistics that are particularly relevant to problem solving in science and technology. It also provides a sound base for more advanced study in statistics in subsequent sessions. Topics include: presentation of data; descriptive statistics; the role of uncertainty in decision making; hypothesis testing; and simple linear regression.

300730.1 Steel Structures

Credit Points 10 **Level** 3

Prerequisite

300733.1 Introduction to Structural Engineering

Corequisite

300732.1 Structural Analysis

Equivalent Units

85014 - Steel Structures

.....

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.

200665.1 Strategic Communication in Sport

Credit Points 10 **Level** 2

Equivalent Units

400321 - Sport Management 2, 200556 - Communication in Sport

.....

Strategic Communication in Sport offers students the opportunity to explore the management of the different types of communication available to sporting organisations. With the high profile of many sporting organisations, communication plays a key part of organisational strategy. Maximising communication through an understanding of the interconnect media relationships and the role of communication within these relationships is explored.

200587.1 Strategic Management

Credit Points 10 **Level** 3

Prerequisite

200571.1 Management Dynamics OR **MG102A.1** Management Foundations

Equivalent Units

MG302A - Strategic Management

.....

The choice perspective of strategic management. External environmental assessment and choice. Analysis of international strategic capabilities. Strategy formulation: choice of mission, strategic goals, and a strategy. Implementing strategies through plans, functional strategies, and budgets. Implementing strategy through organisation structure. Implementing strategy through culture, leadership, and human resource management. Control of strategy. Special cases of strategic management: entrepreneurial and non-profit organisations. Strategic management in the international area. Social issues in strategic management. Strategic management in the future.

200087.1 Strategic Marketing Management

Credit Points 10 **Level** 3

Assumed Knowledge

This is a capstone unit in marketing. It is assumed that students have knowledge of basic marketing concepts, theories, and frameworks in consumer behaviour, business-to-business marketing and marketing research.

Prerequisite

200083.1 Marketing Principles

.....

This unit is about developing and managing innovative competitive marketing strategies. It crosses the traditional boundaries of marketing (as the modern marketer often does), and is therefore influenced by concepts and tools from a range of disciplines, including strategic management, entrepreneurship and marketing. The central

focus is on how marketing strategy and its management can create superior and sustainable value for both customers and shareholders

200087.2 Strategic Marketing Management

Credit Points 10 **Level** 3

Assumed Knowledge

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Prerequisite

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300732.1 Structural Analysis

Credit Points 10 **Level** 3

Prerequisite

300733.1 Introduction to Structural Engineering

Equivalent Units

85010 - Structural Analysis

.....

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.

400187.1 Supervision in Clinical Practice

Credit Points 10 **Level** 3

.....

This unit will provide an introduction to supervision of students in clinical practice settings. Students will have an opportunity to consider clinical education from a supervision perspective. This will provide them with beginning supervisory skills that can be utilised in clinical settings in the early stages of their professional career.

300738.1 Surveying for Engineers

Credit Points 10 **Level** 1

Assumed Knowledge

Students need knowledge of Trigonometry

Equivalent Units

85003 - Surveying for Engineering

.....
This core unit provides students with a basic knowledge of Surveying as it relates to various Engineering projects. It provides material for units such as Water Engineering, Environmental Engineering, Infrastructure Engineering and Engineering Project.

200039.1 Surveys and Multivariate Analysis

Credit Points 10 **Level** 3

Assumed Knowledge

200192 - Statistics for Business, 200032 - Statistics for Science

Equivalent Units

J3693 - Sample Survey Techniques, J3692 - Regression and Multivariate Analysis

.....
In the first half of this unit students gain an appreciation of survey methodology, including questionnaire design, as well the application of sampling techniques. These include simple random sampling, stratification, supplementary information and cluster sampling. The second half of the unit covers the principal methods of multivariate data analysis, principal components, factor analysis, discriminant analysis, and cluster analysis.

300309.2 Sustainable Design: Life Cycle Analysis

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge related to the successful completion of Year 1 would be of advantage and is assumed.

Equivalent Units

J2806 - Manufacturing Technology and Design, 10910 - Environmental Planning 1

.....
Designers prescribe the use of our limited materials resources with every product that transpires from their work. With an informed approach to design, based on a sound knowledge of materials from their origins to their disposal as well how those materials are utilised in existing contexts of use, a designer can maximise the positive impact of their designing on local and global communities. In this unit students will develop an understanding of the central importance of design in developing a more sustainable world on both production and consumption sides. They will reflect critically on their role as both designers and end-users and will exercise their creative intuition to confidently generate and present designs for sustainability. The aim of the unit is to enhance students' ecological literacy and perception of sustainability as a creative opportunity.

300304.2 Sustainable Design: Materials Technology

Credit Points 10 **Level** 1

Equivalent Units

300304 - Sustainable Design 1: Materials Technology, J1758 - Engineering Design, J2807 - Materials Technology, J2817 - Manufacturing Processes and Materials

.....
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.

300306.2 Sustainable Design: Sustainable Futures

Credit Points 10 **Level** 2

Assumed Knowledge

300309 - Sustainable Design: Life Cycle Analysis

Equivalent Units

10913 - Environmental Planning 2

.....
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.

300791.1 Sustainable Food Production

Credit Points 10 **Level** 2

Incompatible Units

300530 - Advances in Agonomy

.....
Sustainable Food Production provides students with the knowledge and skills required to analyse current and future food production systems with an emphasis on water and energy efficiency. The subject material integrates agronomic principles with food supply chain analysis. This approach facilitates an analytical framework that goes beyond farm-gate productivity by including aspects of the food supply chain. Key concepts include water use efficiency, nitrogen balance, energy balance, life cycle assessment, and greenhouse gas emissions. Case studies will be drawn from a range of food production systems, emphasising productivity per unit of input.

700013.1 System Analysis and Design (UWSC)

Credit Points 10 **Level** 1

Assumed Knowledge

Students should have knowledge of the fundamentals of information systems, computer systems, computer applications and information processing

Equivalent Units

300131 - Introduction to Analysis and Design, 300585 - System Analysis and Design

Special Requirements

Students must be enrolled at UWS College.

.....

This unit provides an introduction to systems analysis and design. Incorporating systems concepts, theories and methodologies, this unit provides students with elementary problem solving experience in computerised information systems. Students will gain the ability to derive systems requirements from problem definitions and to produce system models using process, data, object and network modelling. Design and implementation issues include, (but may not be limited to), elementary database design, input, output and user interface design and prototyping. Students are also introduced to roles and responsibilities in information systems development, selection of packaged solutions and the principles of software quality.

300165.2 Systems Administration Programming

Credit Points 10 **Level** 3

Assumed Knowledge

A good understanding of programming concepts, such as selection, iteration, modularization, and one dimensional arrays. Basic knowledge of Windows operation system.

Prerequisite

300167.2 Systems Programming 1

Incompatible Units

300577 - Script programming

.....

This unit covers programming techniques and tools used to administer standalone and networked computer systems. The unit focuses on the use of high level interpretive scripting languages to automate everyday administrative tasks, and to monitor and control running systems. Techniques to extend scripting language capabilities by dynamic linking to compiled code are examined, particularly in terms of access to operating system level functions. The unit also examines the use of administrative programs and tools to monitor and adjust system performance and capacity.

300585.1 Systems Analysis and Design

Credit Points 10 **Level** 1

Assumed Knowledge

Students should have knowledge of the fundamentals of information systems, computer systems, computer applications and information processing

.....

This unit provides an introduction to systems analysis and design. Incorporating systems concepts, theories and methodologies, this unit provides students with elementary problem solving experience in computerised information systems. Students will gain the ability to derive systems requirements from problem definitions and to produce system models using process, data, object and network modelling. Design and implementation issues include, (but may not be limited to), elementary database design, input, output and user interface design and prototyping. Students are also introduced to roles and responsibilities in information systems development, selection of packaged solutions and the principles of software quality.

300166.1 Systems and Network Management

Credit Points 10 **Level** 3

Assumed Knowledge

Students should be familiar with the fundamentals of computer networking and data communications.

Prerequisite

300095.1 Computer Networks and Internets

Equivalent Units

14979 - Network and Systems Management

.....

The rapid progress in technology, the increasing demand for IT services, and the strong expansion of the Internet have resulted in heterogeneous interconnected networks with many distributed systems that run on them. To ensure access and efficient utilization of network resources, subject to organisational policy restrictions, networked systems must be managed properly. This unit addresses the issues relevant to such management. It covers the principles and current practices pertinent to integrated management of networks, systems, services, and applications. The unit helps the student to understand management functions and architectures as well as current standards and relevant protocols.

300167.2 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

300580.1 Programming Fundamentals OR **300027.1** Engineering Computing AND **300018.1** Digital Systems 1

Equivalent Units

14943 - Systems Programming 1, J2822 - Unix System Programming 1

Special Requirements

Students enrolled in 3621 Bachelor of Engineering must be enrolled in one of the key programs attached to the course.

.....

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.

300168.1 Systems Programming 2

Credit Points 10 **Level** 3

Prerequisite

300167.1 Systems Programming 1

Corequisite

300149.1 Operating Systems

Equivalent Units

14963 - Systems

.....

This unit complements and extends the work already done in Systems Programming 1. It covers advanced topics in programming that are directly relevant to systems level application design and implementation. As such it addresses the main concepts, principles, and techniques for system level programs that utilise virtual memory, dynamic link libraries, asynchronous I/O, and multi-threading that can support high levels of concurrency. The unit also emphasises and builds a sound understanding of kernel level objects, as well as error and exception handling techniques, and focuses primarily on using the low-level functionality exposed by the operating system's C/C++ language API.

300582.1 Technologies for Web Applications

Credit Points 10 **Level** 2

Assumed Knowledge

Basic programming principles and program control structures equivalent to that covered in Programming Fundamentals. Basic file management and PC operation including how to access and search the World Wide Web.

Prerequisite

300580.1 Programming Fundamentals

Equivalent Units

300129 - Interactive Web Site Development, J2826 - Internet and Web Communications, D2826 Internet and Web Communications

Incompatible Units

300101 - Creating and Managing Web Sites, CP108A - Principles of the Internet, 101180 - Web and Time Based Design

.....

Building on material covered in Programming Fundamentals this unit introduces students to the basics of developing interactive and dynamic web applications from both the client and server perspective. The unit covers web site design, web site development, web page accessibility and usability, XHTML, CSS, client side and server side scripting, database interaction, web site promotion (SEO), legal issues and web security.

200668.1 Technology Management for Competitiveness

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

200165 - Productivity and Technology Management

.....

This contemporary unit provides an understanding of technology management and productivity measurement/improvement concepts aimed to improve the competitiveness of organisations. Students are introduced to a range of tools and techniques to acquire and implement technology and develop productivity improvement programs within global operations and supply chain context. The interaction between technological change and competitiveness (productivity and other performance measurement systems) is also explored. The unit is relevant to managers or technologists with responsibilities for managing technological change

EY101A.1 Terrestrial Environment Management

Credit Points 10 **Level** 1

Equivalent Units

300663 - Resource Sustainability

.....

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.

200118.2 The Accountant as a Consultant

Credit Points 10 **Level** 3

Prerequisite

200108.1 Contemporary Management Accounting

Equivalent Units

H3328 - The Accountant as a Management Consultant

Special Requirements

The need to seek college approval relating to ethics risks and the need for university insurance to cover engaged learning.

.....

This unit focuses on the role that accountants play in the effective management of businesses, using case studies covering a range of accounting areas.

300755.1 The Appendicular Skeleton

Credit Points 10 **Level** 2

Equivalent Units

E2311 - Human Biological Sciences III, 300325 - The Appendicular Skeleton

.....

This unit provides a thorough understanding of the topographic anatomy of the human upper and lower limbs, including their respective girdles. It undertakes this by utilising a regional approach (as against a systems approach), emphasising the interplay of the different body systems within the appendicular. The relationship between form and function at a topographic level, will underpin all teaching of this unit.

200549.1 The Australian Macroeconomy

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics

Equivalent Units

200049 - Macroeconomics

.....

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.

200098.1 The Markets of Asia

Credit Points 10 **Level** 3

Equivalent Units

61751 - Regional Market Study (Asia)

.....

Markets of Asia unit offers a balanced and practical introduction to the dynamic and robust Asian market place. Most of the students undertaking this unit will have exposure to countries other than Australia and would have travelled internationally or have an intention to do so. In the present context of globalisation, business is international

business. In Australia today even a small locally based manufacturing company's operations are in some way influenced by the tentacles of Asian businesses. This is a journey that starts with a major Asian powerhouse, Peoples Republic of China and ends at the doorstep of another Asian powerhouse, India.

200099.2 The Markets of Europe

Credit Points 10 **Level** 3

Assumed Knowledge

A knowledge of the basic principles of marketing, consumer behaviour and international marketing

Prerequisite

200083.1 Marketing Principles AND **200094.1** International Marketing

.....

This unit will profile the member states of the European Union in terms of their marketing environment, with emphasis on those various features, similarities, differences and interactions deemed to be of commercial and marketing significance. A major focus of the course will be the impact of European integration and the relevance of the European Union. The European Union will be discussed in its global context, particularly its relationship with Central and Eastern Europe and the Asia-Pacific. The course therefore gives students the opportunity to undertake macro-environmental analysis and examine the effects of environmental influences on marketing, while also learning about other cultures.

200077.1 The Superannuation Industry

Credit Points 10 **Level** 3

Assumed Knowledge

200049 - Macroeconomics, 200076 - Introductory Economics, 200488 - Corporate Financial Management

.....

This unit provides students with an understanding of the economics of retirement and retirement income provision, with particular emphasis on the Australian superannuation industry. On completion of this unit, students should have a comprehensive understanding of superannuation in Australia, as well as an appreciation of the economic issues associated with alternative models of retirement income provision.

200705.1 The World of Sport Management

Credit Points 10 **Level** 1

Equivalent Units

400319 - Sport Management 1, 200564 - Introduction to Sport Management

.....

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.

400254.2 Therapeutic Recreation Professional Project

Credit Points 10 **Level** 3

Prerequisite

400863.1 Foundations of Research and Evidence-Based Practice OR **400252.1** Workplace Learning 2 (Community Placement)

.....

This unit version will commence from 2012. The aim of this unit is for students to apply their knowledge of professional theory, practice, research and evaluation skills to the investigation of a therapeutic recreation professional issue. Emphasis in the unit is on the development of a research/evaluation proposal through literature review and research design outline of a program with a proposed method of evaluation suitable for use in a community setting.

300759.1 Thermal and Fluid Engineering

Credit Points 10 **Level** 3

Prerequisite

200238.1 Mathematics for Engineers 2 AND **300464.1** Physics and Materials AND **300762.1** Fluid Mechanics AND **300760.1** Thermodynamics and Heat Transfer

.....

The unit provides an understanding of thermo-fluid principles and their engineering applications involving thermal processes and energy conversion. Laminar, , turbulent and compressible fluid flows are discussed. Fluid-structure interactions, buoyancy driven flows and other special thermal and fluid engineering topic are also covered. Basic computational techniques to solve thermodynamics and fluid flow problems are introduced. The theories learned in classes will be reinforced in laboratory sessions and through assignments and tutorials.

300760.1 Thermodynamics and Heat Transfer

Credit Points 10 **Level** 3

Prerequisite

300464.1 Physics and Materials AND **200238.1** Mathematics for Engineers 2

.....

This unit introduces students to the fundamentals of thermodynamics and heat transfer. The unit covers the properties of thermodynamic systems, laws of thermodynamics, energy, work and heat, entropy, reversible and irreversible processes, power and refrigeration cycles, heat conduction, natural and forced convection, radiation heat transfer, heat exchanger.

300739.1 Timber Structures (UG)

Credit Points 10 **Level** 4

Prerequisite

300733.1 Introduction to Structural Engineering

Corequisite

300732.1 Structural Analysis

Equivalent Units

85015 - Timber Structures (UG)

.....

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.

200038.2 Time Series and Forecasting

Credit Points 10 **Level** 3

Prerequisite

200033.1 Applied Statistics

.....

Time Series and Forecasting presents the basic techniques of time series analysis with emphasis on model identification, parameter estimation and diagnostic checking. The use of time series models for the process of forecasting future behaviour is discussed. In addition, alternative forecasting approaches, in particular econometric methods, are introduced and some guidelines for choosing an appropriate forecasting method are outlined.

300744.1 Tools and Techniques for Website Building

Credit Points 10 **Level** 1

Special Requirements

Students must be enrolled in 3661 Bachelor of Information and Communications Technology (Enhanced Pathway).

.....

This unit provides students with experiences that will assist them successfully transition from TAFE to a University learning environment whilst providing valuable skills and knowledge in the development of websites using Content Management Systems. Such systems allow developers and/or clients to easily modify and maintain a website without the need for programming. Websites generally need to attract traffic and persuade users to take desired actions, so traffic generation, analytics and conversion strategies will also be covered. The assessments aim to assist students to recognise and cope with the differing expectations between TAFE and University.

300756.1 Topics in Physiology

Credit Points 10 **Level** 3

Assumed Knowledge

300320 - Introduction to Human Physiology or equivalent unit.

Prerequisite

300320.1 Introduction to Human Physiology OR **BC206A.1** Human Physiology 2.2

Equivalent Units

BC306A - Human Physiology 3.1, 300326 - Topics in Physiology

.....

This unit is an extension of 'Human Physiology 1: Introduction to Human Physiology'. It provides greater depth and breadth of understanding of aspects of whole-body physiology. Topics may include, but are not limited to, locomotion, sleep, reproductive technology, psychoneuroimmunology, interactions with others or the environment, the life cycle.

300627.1 Toxicology

Credit Points 10 Level 2

Equivalent Units

EH217A - Toxicology

.....

Toxicology is the study of toxicants or poisonous substances: their nature, effects on the human body, and on human, animal and plant populations. Poisonous substances have been used by humans from antiquity for both beneficial and malevolent purposes and today a vast array of toxic industrial chemicals are produced. Both accidental (workplace and environmental) and intentional (forensic) exposure are covered, in terms of group properties, toxicity, exposure potential, health impact and intervention. Forensic case studies are also addressed. Students ultimately carry out a toxicological audit of an operation or premises of their choice, meeting a range of disciplinary interests and needs.

400346.1 Traditional Chinese Medicine 1

Credit Points 10 Level 1

.....

This unit provides a comprehensive introduction to traditional Chinese medicine (TCM). Students are introduced to basic TCM theory, and the physiological principles of the diagnostic system that forms the basis of TCM practice. The history and philosophy of Chinese medicine is introduced and discussed in the light of contemporary clinical practice.

400348.1 Traditional Chinese Medicine 2

Credit Points 10 Level 1

Assumed Knowledge

Prior knowledge equivalent to Traditional Chinese Medicine 1.

.....

This unit provides learning experiences that enable students to expand upon their understanding of TCM philosophy and principles, with particular reference to developing diagnostic skills in TCM. Students acquire basic skills in case history taking, interpretation of relevant signs and symptoms, arriving at a TCM diagnosis, and devising suitable treatment strategies.

400352.1 Traditional Chinese Medicine 3

Credit Points 10 Level 2

.....

This unit enables students to develop a sound understanding of causes of disease in TCM with a particular focus on disease pattern differentiation. This is complemented by the reinforcement of skills in case history taking and TCM diagnostics.

400354.1 Traditional Chinese Medicine Practice 1

Credit Points 10 Level 3

Assumed Knowledge

Assumed knowledge equivalent to Traditional Chinese Medicine 3, and Acupuncture 2, and Chinese Herbal Medicine 2.

Special Requirements

To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 OR a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 OR a Working with Children Check Student Declaration after 1 June 2010. Students must have completed a Work Cover approved First Aid Certificate.

.....

This unit is focused on introductory clinical practice in a clinical setting. It enables the student to link theory with practice. It expands the students' knowledge base of acupuncture and Chinese herbal medicine, as well as TCM theory and diagnostics. Students assist with clinical practice and may perform basic acupuncture related techniques.

400356.1 Traditional Chinese Medicine Practice 2

Credit Points 10 Level 3

Assumed Knowledge

Assumed knowledge and experience equivalent to Traditional Chinese Medicine Practice 1.

Special Requirements

To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 OR a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 OR a Working with Children Check Student Declaration after 1 June 2010. Students must have completed a Work Cover approved First Aid Certificate.

.....

This unit is focused on clinical practice in a clinical setting. It enables the student to link theory with practice. It expands the students' knowledge base of acupuncture and Chinese herbal medicine, as well as TCM theory and diagnostics.

Students facilitate clinical practice and perform a wide range of acupuncture and related techniques, in addition to basic herbal prescribing.

400920.1 Traditional Chinese Medicine Practice 3 (PG)

Credit Points 10 **Level** 7

Assumed Knowledge

Foundations of Research and Evidence-Based Practice, TCM Practice 2

Incompatible Units

400359 - Traditional Chinese Medicine Practice (Research Project)

.....

This unit represents a continuation of the clinical practicum and development of clinical skills. Students will also be able to apply their knowledge of professional theory, practice, research and evaluation skills to the investigation of TCM problem. Students will be expected to demonstrate competence in handling patients in a clinical context, synthesise knowledge from their studies of specialities in TCM and critically examine the practical aspects of acupuncture and Chinese herbal medicine research.

400924.1 Traditional Chinese Medicine Practice 4 (PG)

Credit Points 10 **Level** 7

Assumed Knowledge

Traditional Chinese Medicine 3 (PG)

Incompatible Units

400362 - Traditional Chinese Medicine Practice 4

.....

This unit represents a continuation of the clinical practicum and development of clinical skills. Students will be able to integrate their theoretical knowledge, practice skills and research base to the investigation, diagnosis and supervised treatment of patients in a clinical context. Students will be able to synthesise knowledge and competency in the practice of clinical areas of focus taught in Chinese Medicine I and II, and Specialties in TCM I and II. Students will be expected to demonstrate professional competence in handling patients in a clinical context, diagnosing more complex cases and devising and managing the integrated care of patients using TCM.

400764.3 Transition to Graduate Practice

Credit Points 10 **Level** 3

Assumed Knowledge

All other units in Bachelor of Nursing offered in Year 1, 2 and Autumn Year 3

Corequisite

400762.1 Mental Health Nursing 2 AND **400761.1** Family Health Care: High Acuity Nursing

Equivalent Units

400064 - Nursing Context 7

Special Requirements

Students enrolled in course 4642 must have passed the following five units - 400745, 400749, 400753, 400757, 400759. Students enrolled in course 4643 must have passed the following three units - 400753, 400757, 400759. Students enrolled in course 4648 must have passed the following five units - 400745, 400749, 400753, 400759, 400825. Special Requirements are those stipulated by the NSW Health and UWS. At present these include - Prohibited Persons Employment Declaration (PPED) or Working with Children Check Student Declaration, Criminal Record Check (CRC), National Criminal History Record Check (NPC), Adult Vaccination Record, First Aid Certificate

.....

This unit explores the transition to graduate practice from undergraduate nursing student to graduate professional registered nurse focusing on the role, responsibilities, accountabilities and options for the registered nurse.

400746.2 Understanding Good Health

Credit Points 10 **Level** 1

Assumed Knowledge

Knowledge of basic chemistry, physics and bioscience.

Equivalent Units

400047 - Nursing Science 2

.....

This unit introduces the student to concepts and mechanisms involved in normal body functions and the maintenance of normal activities of living that inform professional nursing practice.

300642.1 Understanding Landscape

Credit Points 10 **Level** 1

Equivalent Units

HT103A - Understanding Landscape

.....

This unit explores the historical and cultural perceptions and perspectives of the term 'landscape' and examines the sustainability and management of landscape issues. Through lectures, workshops and a series of field trips, students will become familiar with the terminology and concepts surrounding the natural landscape and will have the opportunity to experience both conceptual and actual landscape issues. Mapping skills will also be introduced and utilised during the field trip and workshop sessions. These also assist in developing the capacity to describe landscape and some pre-reading will be required prior to the trip.

400183.1 Upper Limb Rehabilitation Following Stroke

Credit Points 10 **Level** 3

Prerequisite

400171.1 Occupation and Neurology

.....

People with neurological conditions commonly lose the ability to use their hand and arm. The impairments and resulting disability can impact on a person's occupational performance, and their participation in chosen activities and life roles. In this unit, students will learn how to analyse and retrain components of upper limb performance, particularly reach, grasp and in-hand manipulation. A movement science approach will be used, requiring students to read and critique motor control, motor learning, and muscle biology literature, as well as current best evidence in rehabilitation.

300789.1 Urban Environment

Credit Points 10 **Level** 3

Incompatible Units

300704 - Healthy Built Environments, 300471 - Urban Development Systems

.....

This unit explores the relationships between community, the natural environment and government within an urban context through considering how housing and urban development can influence population health. Concepts explored include "healthy housing", "active living" "safety by design" and "energy efficiency". Through a combination of case studies and practical field experience, students will develop the skills and knowledge appropriate to assessing the "healthiness" and sustainability of urban environments. The unit examines methods of construction and building regulation aimed at the preservation of health and amenity. Consideration is given to "healthy building design" and minimum infrastructure and service provision for healthy and sustainable living. The unit explores the application to housing design and construction of key components of the Environmental Planning and Assessment Act, Local Government Act, Public Health Act and the Building Code of Australia. Development approval and control systems are introduced as means of achieving beneficial change in urban environments.

300470.2 Vertebrate Biodiversity

Credit Points 10 **Level** 3

Prerequisite

300792.1 Biology A - The Diversity of Life

Equivalent Units

300217 - Animal Form & Function

.....

Provide students with a theoretical and practical working knowledge of a range of vertebrate species and their biodiversity. Students will understand the basic issues involved in adaptation of many biological functions. Identification of major groups of animals from several different environments will also be incorporated into the learning outcomes. Students will learn to conduct field surveys and assess the techniques used to survey vertebrates, as well as learn basic handling and husbandry techniques required for different vertebrate species.

MG309A.1 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.

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

300779.1 Water in the Landscape

Credit Points 10 **Level** 3

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Many land and water use activities in both urban and rural landscape result in hydrologic changes that have environmental, economic and social consequences and require appropriate management strategies for sustainable water use in catchments. In this unit, the hydrologic cycle and its different processes will be explored at different scales of urban and rural landscapes. The availability, demand and the use of water will be examined from hydrologic, environmental, economic and social perspectives. The unit is offered through 'flexible mode' using on-line learning resources, group facilitation, two workshops, a catchment tour and a mini project.

300635.2 Water Quality Assessment and Management

Credit Points 10 **Level** 2

Assumed Knowledge

The equivalent of an Undergraduate level 1 biological science unit.

Equivalent Units

EY211A - Water Quality Assessment and Management,
 EY205A - Principles of Soil and Water Management,
 EN302A - Water and Wastewater, 300528 - Water in the Landscape

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This unit introduces students to a range of concepts from the protection of aquatic environments in terms of the need to monitor and maintain water quality to the application of biological, chemical and physical methods of maintaining the suitability of water quality to meet its use criteria. The unit covers the healthy aquatic environment, pollutants and their sources, health and ecological impacts of water quality degradation, the use of legislation, regulation, policy, guidelines and standards. The concept of water in catchments and catchment management principles are introduced. It also includes irrigation and water use in crop production and landscape management. The fundamental objective in the unit is to broadly address integrated urban and rural water cycle management and explore several case studies through field visits. The unit seeks to develop graduate competencies in water monitoring, regulation, treatment and management. The unit is particularly applicable to those students who are interested in achieving the status of authorised officers with the regulatory authorities, landscape and catchment management.

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

101180.1 Web and Time Based Design

Credit Points 10 **Level** 2

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

100605 - Web and Time Based Production Technology

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Through lectures students develop an understanding of fundamental concepts and processes inherent in designing for an online environment. Students also develop fundamental computer software skills and design understandings appropriate to that medium using the major web software packages and develop a working understanding of production literacies for online design. Students will engage in practical studies of web authoring using HTML, Dreamweaver, image optimisation using Fireworks or Imageready. Emphasis will be placed on understanding the roles, functions and features of each software package in the design production context of online delivery, integrated use, and a working understanding of the responsibilities inherent in the digital production process.

300583.1 Web Systems Development

Credit Points 10 **Level** 3

Assumed Knowledge

Systems Analysis and Design (or equivalent). Ability to develop a dynamic web page using data retrieved from a database and save data entered on to a Web based form in to a database.

Prerequisite

300582.1 Technologies for Web Applications

Equivalent Units

300085 - Advanced Web Site Development

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In this unit students will learn how to build a Web based information systems using programming, database, networking and web technologies that they have learned in other units. Students will learn about various web system architectures and development methodologies that can be used when developing web based information systems. Students will also learn about how to model, design and implement different aspects of Web based information systems.

300065.3 Wireless Communications

Credit Points 10 **Level** 4

Assumed Knowledge

The students should have a good understanding of signals and systems, probability and random processes and fundamentals of communication systems.

Prerequisite

200242.2 Mathematics for Engineers 3 AND **300007.1** Communication Systems OR **300010.2** Data Networks

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.

200243.2 Work Employment and the Labour Market

Credit Points 10 **Level** 3

Prerequisite

200300.1 Managing People at Work

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This unit provides an in-depth study of the links between work, employment and wider labour market issues. An introductory framework will be provided emphasizing the historical perspectives of work and the key theories and concepts involved in industrial sociology. Current and future issues and trends in work organization and practice and their relationships to society will also be considered. The unit will then examine the relationship between labour markets, employment and government policy in both macro and micro settings. Particular emphasis will be placed upon the interaction of regional labour markets, policies and outcomes for key labour market segments.

400904.1 Work Experience in Sport and Exercise Science

Credit Points 10 **Level** 3

Assumed Knowledge

It is expected that students have the knowledge and skills associated with the prerequisite units.

Prerequisite

400885.1 Sport and Exercise Physiology AND **400887.1** Clinical Exercise Physiology 1 AND **400902.1** Exercise in Musculo-Skeletal Rehabilitation AND **400903.1** Professional Development and Work Experience

Equivalent Units

400331 - Sport and Exercise Science in Practice

Special Requirements

Students must be enrolled in course 4658 - Bachelor of Health Science (Sport and Exercise Science). To undertake this unit, students must comply with the following special requirements: Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate 2) submitted a Prohibited Employment Declaration prior to 1 June 2010 or a Working with Children Check Student Declaration after 1 June 2010 3) provide evidence of compliance with the occupational screening and immunisation policy of NSW Health 4) possess a current WorkCover Authority approved First Aid Certificate.

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The unit Work Experience in Sport and Exercise Science focuses on observation and participation in Sport and Exercise Science activities in the industry setting. Students will develop professionally in Sport and Exercise Science by applying their knowledge and skills developed during previous Sport and Exercise Science course work and practical experiences through supervised practice placements. During these placements students are expected to develop and demonstrate an ability to design,

implement and evaluate testing and training programs for a variety of clients in sports, community and clinical settings.

200616.2 Workplace Behaviour

Credit Points 10 **Level** 3

Prerequisite

200300.1 Managing People at Work

Equivalent Units

61441 - Workplace Behaviour

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The primary concern of this unit is to equip students with an understanding of how to apply sociology and work psychology to effectively manage human resources. The unit analyses both the individual (psychological) and social (sociological) factors that influence workplace behaviour and relations in the workplace. The structure of the unit is thematic, drawing on the major theoretical frameworks of psychology and sociology, and applying them to the practice of human resource management and to contemporary issues within the workplace.

400246.2 Workplace Learning 1 (Therapeutic Recreation)

Credit Points 10 **Level** 2

Prerequisite

400783.1 Professional Pathways in Health Science

Special Requirements

Students must be enrolled in a Bachelor of Health Science course and studying Therapeutic Recreation. Prior to enrolling in this unit students must have: 1) submitted a Criminal Record Check form prior to 1 June 2010 or a Student Undertaking Form after 1 June 2010 and have applied for a National Police Certificate.

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This unit provides students with the opportunity to apply theoretical and practical knowledge and skills gained in the course to develop their practice and professional behaviours in a therapeutic recreation workplace setting.

400252.1 Workplace Learning 2 (Community Placement)

Credit Points 10 **Level** 3

Assumed Knowledge

Workplace Learning 1

Prerequisite

400246.1 Workplace Learning 1 (Therapeutic Recreation)

Special Requirements

This unit is only available to Therapeutic Recreation students.

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This unit provides students with the opportunity to experience the practice of therapeutic recreation/ diversional therapy through supervised needs assessment, problem identification, program planning, implementation and evaluation in a range of distinct therapeutic service

setting. Identify and provide services for people from special populations such as culturally and linguistically diverse (CALD), refugees and trauma victims, indigenous people, older people, people with learning problems and high risk populations. Students are to explore the advocacy and support needs of the clients receiving services. Students will explore issues related to quality supervision and their own learning styles as they develop learning contracts to be used in the workplace learning setting.

101662.1 Young People, Their Futures and Education

Credit Points 10 **Level** 3

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This unit provides an introduction to the youth studies field. It examines emerging ways of theorising the roles ascribed to 'youth' over the past 50 years and their relationships to the changing contexts in which young people are growing up. These changes include the impact of digital technologies, increases in high-school completion rates, mass tertiary education, increases in student employment, and the effects of labour market deregulation. The unit examines how socio-economic inequality and geographies of exclusion contribute to shaping young people's identities and their life chances. Social and educational challenges affecting immigrant and refugee youth are also examined.

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