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# ROBOTICS AND MECHATRONICS ENGINEERING, TESTAMUR MAJOR

Western Sydney University Major Code: T104

Previous Code: KT3174.1, MT3055

Available to students in other Western Sydney University programs?

No

Robotics and Mechatronic engineering combines electrical, computing and mechanical engineering and is at the forefront in designing smart machines and systems, such as pilotless spacecraft, car cruise control, automated factories and medical telerobotics. Students explore intelligent mechanical systems and automation through an extensive and integrated hands-on laboratory program, as well as work-integrated industry projects. Students learn in-depth knowledge about the design and construction of these systems to integrate, evaluate and address their performance. The multidisciplinary skills students develop are sought after by leading edge industries, including aerospace and biomedical engineering. This major includes a mandatory 12 weeks of industrial placement as a completion requirement.

## Location

Campus	Mode	Advice	Select one elective	
Parramatta Campus - Victoria Road	Internal	Major Advice (edbe@westernsydney.ed	u. <b>Spr</b> ing session	Credit P
Parramatta City Campus-Macquarie Street	Internal	Major Advice (edbe@westernsydney.ed	MECH 4003 luMECH 3006 ELEC 3008	Mobile I Mechat Instrum
Penrith Campus	Internal	Major Advice (edbe@westernsvdnev.ed	Select one Alternate	,

# Major Structure Bachelor of Engineering Advanced (Honours)

This Major will be offered at Engineering Innovation Hub which is part of Parramatta City campus.

Qualification for this award requires the successful completion of 320 credit points which include the subjects listed below.

# Start-year intake

Course	Title	Credit Points
Year 1		
Autumn session		
MATH 1034	Mathematics for Engineers 1 (Advanced)	10
ENGR 1024	Introduction to Engineering Practice	10
ENGR 1047	Advanced Engineering Physics 1	10
ENGR 1045	Engineering Programming Fundamentals	10
	Credit Points	40
Spring session		
ELEC 1009	Electrical Circuit Fundamentals	10
MATH 1035	Mathematics for Engineers 2 (Advanced)	10
ENGR 1018	Fundamentals of Mechanics	10

MANU 2001	Design and Manufacturing	10
	Credit Points	40
Year 2		
Autumn session		
ENGR 2027	Engineering Design	10
MECH 2003	Mechanics of Materials	10
MECH 2001	Kinematics and Kinetics of Machines	10
ELEC 1001	Digital Systems 1	10
	Credit Points	40
Spring session		
MECH 2005	Mathematics for Mechanical and Mechatronic Engineers	10
ELEC 2009	Microprocessor Systems	10
MECH 3004	Dynamics of Mechanical Systems	10
ELEC 2008	Microcontrollers and PLCs	10
of completion of of 200 Credit poir	I to maintain a minimum GPA of 5.0 at the end 160 Credit Points, and again at the completion nts will be automatically transferred to the B. lours) (3740) program.	
	Credit Points	40
Year 3		
Autumn session		
MECH 3001	Advanced Dynamics	10
MECH 3005	Mechanical Design	10
Select one Altern	ate Subject	10
Select one electiv	re	10
	Credit Points	40
Spring session		
MECH 4003	Mobile Robotics	10
MECH 3006	Mechatronic Design	10
ELEC 3008	Instrumentation and Measurement	10

Industrial Experien	ce	
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	40
Year 4		
Autumn session		
MECH 4004	Robotics	10
ENGR 4037	Advanced Engineering Thesis 1: Preliminary Investigations	10
Select one Alternat	e subject	10
Select one elective		10
	Credit Points	40
Spring session		
ENGR 4036	Advanced Engineering Thesis 2: Detailed	10

Investigations

**Credit Points** 

**Total Credit Points** 

## **Alternate Subjects**

Select two electives

Select one Alternate Subject

Subject	Title	Credit Points
HLTH 2003	Biomechanics	10
ENGR 3003	Biomedical Electronics	10
ENGR 3004	Biomedical Signals and Data Analysis	10

MECH 4001	Computational Fluid Dynamics	10
MECH 4002	Computer Aided Engineering	10
ELEC 2007	Engineering Visualization	10
ENGR 2025	Design Graphics: Engineering Documentation	10
ENGR 2024	Design Graphics: Communication for Manufacture	10
CIVL 2003	Fluid Mechanics	10
BIOS 1022	Introduction to Human Biology	10
MECH 3007	Thermal and Fluid Engineering	10
MECH 3008	Thermodynamics and Heat Transfer	10

#### Minors

SM3093 Computer Aided Design (Mechatronics)

SM3074 Thermal and Fluid Systems

SM3091 Biomedical Engineering

## **Optional Electives**

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

Subject	Title	Credit
		Points
ENGR 3022	Special Technical Project	10

# **Equivalent Subjects**

The subjects listed below count towards completion of this program for students who passed these subjects in 2021 or earlier.

MECH 4005 Advanced Engineering Thesis 1: Preliminary Investigations, replaced by ENGR 4037 Advanced Engineering Thesis 1: Preliminary Investigations

MECH 4006 Advanced Engineering Thesis 2: Detailed Investigations, replaced by ENGR 4036 Advanced Engineering Thesis 2: Detailed Investigations

# Mid-year intake

Course	Title	Credit Points
Year 1		
Spring session		
MATH 1034	Mathematics for Engineers 1 (Advanced)	10
ENGR 1018	Fundamentals of Mechanics	10
ELEC 1009	Electrical Circuit Fundamentals	10
MANU 2001	Design and Manufacturing	10
	Credit Points	40
Autumn session		
MATH 1035	Mathematics for Engineers 2 (Advanced)	10
ELEC 1001	Digital Systems 1	10
ENGR 1047	Advanced Engineering Physics 1	10
ENGR 1045	Engineering Programming Fundamentals	10
	Credit Points	40
Year 2		
Spring session		
MECH 2005	Mathematics for Mechanical and Mechatronic Engineers	10
ELEC 2009	Microprocessor Systems	10

ELEC 2008	Microcontrollers and PLCs	10
One alternate subject		10
	Credit Points	40
Autumn session		
ENGR 2027	Engineering Design	10
MECH 2003	Mechanics of Materials	10
ENGR 1024	Introduction to Engineering Practice	10
MECH 2001	Kinematics and Kinetics of Machines	10
of completion of 160	maintain a minimum GPA of 5.0 at the end Credit Points, and again at the completion will be automatically transferred to the B.	
Engineering (Honour	s) (3740) program.	
	Credit Points	40
Year 3		
Spring session		
MECH 4003	Mobile Robotics	10
MECH 3006	Mechatronic Design	10

	3	
ELEC 3008	Instrumentation and Measurement	10
One alternate subject		10
	Credit Points	40
Autumn session		
MECH 3001	Advanced Dynamics	10
MECH 3005	Mechanical Design	10
Select one electiv	е	10
One alternate subject		10
Industrial Experie	nce	
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	40

#### Spring session **ENGR 4037** 10 Advanced Engineering Thesis 1: **Preliminary Investigations MECH 3004** Dynamics of Mechanical Systems 10 Select two electives 20 **Credit Points** 40 **Autumn session ENGR 4036** Advanced Engineering Thesis 2: Detailed 10 Investigations **MECH 4004** Robotics 10 Select one elective 10 One alternate subject 10 **Credit Points** 40 **Total Credit Points** 320

# **Alternate Subjects**

Year 4

Subject	Title	Credit Points
HLTH 2003	Biomechanics	10
ENGR 3003	Biomedical Electronics	10
ENGR 3004	Biomedical Signals and Data Analysis	10
MECH 4001	Computational Fluid Dynamics	10
MECH 4002	Computer Aided Engineering	10
ELEC 2007	Engineering Visualization	10
ENGR 2025	Design Graphics: Engineering Documentation	10
ENGR 2024	Design Graphics: Communication for Manufacture	10
CIVL 2003	Fluid Mechanics	10

BIOS 1022	Introduction to Human Biology	10
MECH 3007	Thermal and Fluid Engineering	10
MECH 3008	Thermodynamics and Heat Transfer	10

#### Minors

SM3093 Computer Aided Design (Mechatronics)

SM3074 Thermal and Fluid Systems

SM3091 Biomedical Engineering

#### **Optional Electives**

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

Subject	Title	Credit Points
ENGR 3022	Special Technical Project	10

# **Equivalent Subjects**

The subjects listed below count towards completion of this program for students who passed these subjects in 2021 or earlier.

MECH 4005 Advanced Engineering Thesis 1: Preliminary Investigations, replaced by ENGR 4037 Advanced Engineering Thesis 1: Preliminary Investigations

MECH 4006 Advanced Engineering Thesis 2: Detailed Investigations, replaced by ENGR 4036 Advanced Engineering Thesis 2: Detailed Investigations

# **Bachelor of Engineering Science**

This Major will be offered at Parramatta City and Penrith campuses.

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

# Start-year intake

Course	Title	Credit Points
Year 1		
Autumn session		
ELEC 1006	Engineering Computing	10
ENGR 1011	Engineering Physics	10
ENGR 1024	Introduction to Engineering Practice	10
Select one of the fo	ollowing:	10
MATH 1021	Mathematics for Engineers Preliminary	
MATH 1016	Mathematics for Engineers 1	
Note: All students	are required to enrol in MATH 1021	

Note: All students are required to enrol in MATH 1021 Mathematics for Engineers Preliminary first and undertake a readiness test at the beginning of their study.

This test will be conducted at the beginning of the first semester of enrolment and the result will determine whether a student will remain in MATH 1021 Mathematics for Engineers Preliminary or be transferred by the School to MATH 1016 Mathematics for Engineers 1.

The students who finish MATH 1021 Mathematics for Engineers Preliminary will then use this unit as an elective.

Credit Points

Snrina	CASSION
opring	session

ENGR 1018	Fundamentals of Mechanics	10
PROC 1008	Introduction to Materials Engineering	10
Select one of the fo	llowing:	10
MATH 1016	Mathematics for Engineers 1	
MATH 1019	Mathematics for Engineers 2	
Select one elective		10

Note: Students who remained in MATH 1021 Mathematics for Engineers Preliminary during the first semester will be required to complete MATH 1016 Mathematics for Engineers 1 during second semester.

These students must then complete MATH 1019 Mathematics for Engineers 2 during the Summer session.

	Total Credit Points	240
	Credit Points	40
Note: Elective units	must be level 2 or higher	
Select one elective		10
ELEC 2010	Power and Machines	10
ENGR 3014	Engineering Science Project 2	10
MECH 4003	Mobile Robotics	10
Spring session		
	Credit Points	40
ELEC 1001	Digital Systems 1	10
ENGR 3013	Engineering Science Project 1	10
MECH 3001	Advanced Dynamics	10
MECH 3005	Mechanical Design	10
Autumn session		
Year 3		10
	Credit Points	40
ENGR 2033	Industrial Experience (Engineering Technologist)	0
Industrial Experience		•
ENGR 3030	Specialisation Workshop 2	10
ELEC 2008	Microcontrollers and PLCs	10
ENGR 2001	Automated Manufacturing	10
MECH 3004	Dynamics of Mechanical Systems	10
Spring session		
	Credit Points	40
ENGR 3029	Specialisation Workshop 1	10
ELEC 2001	Circuit Theory	10
MECH 2003	Mechanics of Materials	10
MECH 2001	Kinematics and Kinetics of Machines	10
Autumn session		
Year 2		
	Credit Points	40

# **Equivalent Subjects**

40

The subjects listed below count towards completion of this program for students who passed these subjects in Autumn 2022 or earlier.

ENGR 1008 - Engineering Materials, replaced by PROC 1008 - Introduction to Materials Engineering

# Mid-year intake Course Credit

		Points
Year 1		
Spring session		
Select one of the foll	•	10
MATH 1021	Mathematics for Engineers Preliminary	
MATH 1016	Mathematics for Engineers 1	
ENGR 1018	Fundamentals of Mechanics	10
ELEC 1003	Electrical Fundamentals	10
ENGR 1024	Introduction to Engineering Practice	10
A	Credit Points	40
Autumn session Select one of the foll	outing:	10
MATH 1016		10
MATH 1016 MATH 1019	Mathematics for Engineers 1	
ELEC 1006	Mathematics for Engineers 2	10
ENGR 1011	Engineering Computing	10
Select one elective	Engineering Physics	10
	et be Level 1 or higher	10
• Elective unit mus	at be Level 1 of Higher	
	Credit Points	40
Year 2		
Spring session		
ENGR 2001	Automated Manufacturing	10
ELEC 2008	Microcontrollers and PLCs	10
ENGR 3029	Specialisation Workshop 1	10
Select one elective		10
Elective unit mus	st be Level 2 or higher	
	Credit Points	40
Autumn session		
MECH 2001	Kinematics and Kinetics of Machines	10
MECH 2003	Mechanics of Materials	10
ELEC 2001	Circuit Theory	10
ENGR 3030	Specialisation Workshop 2	10
Industrial Experience		
ENGR 2033	Industrial Experience (Engineering Technologist)	0
	Credit Points	40
Year 3		
Spring session		
MECH 4003	Mobile Robotics	10
ENGR 3014	Engineering Science Project 2	10
ELEC 2010	Power and Machines	10
MECH 3004	Dynamics of Mechanical Systems	10
	Credit Points	40
Autumn session		
MECH 3005	Mechanical Design	10
MECH 3001	Advanced Dynamics	10
ENGR 3013	Engineering Science Project 1	10
ELEC 1001	Digital Systems 1	10
	Credit Deinte	40

**Credit Points** 

**Total Credit Points** 

40

240

# **Bachelor of Engineering (Honours)/ Bachelor of Business**

Qualification for this award requires the successful completion of 400 credit points which include the subjects listed in the recommended sequences below.

# Start-year intake

Course	Title	Credit Points
Year 1		
Autumn session		
MATH 1016	Mathematics for Engineers 1	10
ENGR 1011	Engineering Physics	10
BBus core unit 1		10
BBus core unit 2		10
	Credit Points	40
Spring session		
MATH 1019	Mathematics for Engineers 2	10
PROC 1008	Introduction to Materials Engineering	10
BBus core unit 3		10
BBus core unit 4		10
	Credit Points	40
Year 2		
Autumn session		
ELEC 1006	Engineering Computing	10
BBus Professional Su	ubject 1	10
BBus Professional Su	ubject 2	10
BBus Major Subject 1	1	10
	Credit Points	40
Spring session		
ELEC 1003	Electrical Fundamentals	10
ENGR 1018	Fundamentals of Mechanics	10
BBus Major Subject 2	2	10
BBus Major Subject 3	3	10
	Credit Points	40
Year 3		
Autumn session		
MECH 2001	Kinematics and Kinetics of Machines	10
MECH 2003	Mechanics of Materials	10
ELEC 2001	Circuit Theory	10
ELEC 1001	Digital Systems 1	10
	Credit Points	40
Spring session		
MECH 3004	Dynamics of Mechanical Systems	10
ENGR 2001	Automated Manufacturing	10
ELEC 2010	Power and Machines	10
ELEC 2008	Microcontrollers and PLCs	10
	Credit Points	40
Year 4		
Autumn session		
MECH 3005	Mechanical Design	10
MECH 3001	Advanced Dynamics	10
ELEC 2004	Electronics	10
BBus Major Subject 4	4	10
	Credit Points	40

Spring session		
MECH 4003	Mobile Robotics	10
BBus Major Subject	t 5	10
BBus Major Subject	t 6	10
BBus Major Subject	t 7	10
Industrial Experience	ce	
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	40
Year 5		
Autumn session		
MECH 4004	Robotics	10
ENGR 4025	Final Year Project 1 (UG Engineering)	10
Business Professio	nal Subject 3	10
Business Major Sub	oject 8	10
	Credit Points	40
Spring session		
ENGR 4026	Final Year Project 2 (UG Engineering)	10
ELEC 3008	Instrumentation and Measurement	10
MECH 3006	Mechatronic Design	10
Business Professio	nal Subject 4	10
	Credit Points	40
	Total Credit Points	400

# **Equivalent Subjects**

The subjects listed below count towards completion of this program for students who passed these subjects in Autumn 2022 or earlier.

ENGR 1008 - Engineering Materials, replaced by PROC 1008 -Introduction to Materials Engineering

# Mid-year intake

Course	Title	Credit Points
Year 1		
Spring session		
MATH 1016	Mathematics for Engineers 1	10
PROC 1008	Introduction to Materials Engineering	10
BBus Core Subject 1		10
BBus Core Subject 2	2	10
	Credit Points	40
Autumn session		
MATH 1019	Mathematics for Engineers 2	10
ENGR 1011	Engineering Physics	10
BBus Core Subject 3	3	10
BBus Core Subject 4	l .	10
	Credit Points	40
Year 2		
Spring session		
ELEC 1003	Electrical Fundamentals	10
ENGR 1018	Fundamentals of Mechanics	10
BBus Major Subject	1	10
BBus Major Subject	2	10
	Credit Points	40
Autumn session		
ELEC 1006	Engineering Computing	10
BBus Professional S	Subject 1	10
BBus Professional S	Subject 2	10

	Total Credit Points	400
	Credit Points	40
Business Major Su	ubject 8	10
Business Professi	onal Subject 4	10
MECH 4004	Robotics	10
ENGR 4026	Final Year Project 2 (UG Engineering)	10
Autumn session		
	Credit Points	40
Business Professi	onal Subject 3	10
MECH 3006	Mechatronic Design	10
ELEC 3008	Instrumentation and Measurement	10
ENGR 4025	Final Year Project 1 (UG Engineering)	10
Spring session		
Year 5	C. Cart I Office	40
	Credit Points	40
ENGR 3017	Industrial Experience (Engineering)	0
Industrial Experier		10
BBus Major Subje		10
ELEC 2004	Electronics	10
MECH 3003	Advanced Dynamics	10
MECH 3005	Mechanical Design	10
Autumn session	orealt i onito	40
DDGG Major Gubje	Credit Points	40
BBus Major Subje		10
BBus Major Subje		10
BBus Major Subje		10
MECH 4003	Mobile Robotics	10
Spring session		
Year 4	Great rounts	40
	Credit Points	40
ELEC 2001	Digital Systems 1	10
ELEC 2001	Circuit Theory	10
MECH 2001 MECH 2003	Mechanics of Materials	10
MECH 2001	Kinematics and Kinetics of Machines	10
Autumn session	Credit Points	40
ELEC 2008	Microcontrollers and PLCs	10
ELEC 2010	Power and Machines	10
ENGR 2001	Automated Manufacturing	10
MECH 3004	Dynamics of Mechanical Systems	10
Spring session	5 · (M   1 · 10 ·	10
Year 3		
	Credit Points	40
BBus Major Subje		10
	. •	

# **Bachelor of Engineering (Honours)**

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

# **Start-year intake**

, , , , , , , , , , , , , , , , , , , ,		
Course	Title	Credit Points
Year 1		
Autumn session		
Select one of the fol	lowing:	10

MATH 1021	Mathematics for Engineers Preliminary		ENGR 4026	Final Year Project 2 (UG Engineering)	10
MATH 1016	Mathematics for Engineers 1		One alternate sub		10
ELEC 1006	Engineering Computing	10	Select one electiv		10
ENGR 1011	Engineering Physics	10	Elective unit n	nust be Level 2 or higher	
ENGR 1024	Introduction to Engineering Practice	10		Credit Points	40
	Credit Points	40		Total Credit Points	320
Spring session				Total Greater Gints	320
Select one of the	•	10	Mid-year intal	ke	
MATH 1016	Mathematics for Engineers 1		Course	Title	Credit
MATH 1019	Mathematics for Engineers 2	1.0			Points
ENGR 1018	Fundamentals of Mechanics	10	Year 1		
ELEC 1003	Electrical Fundamentals	10	Spring session		
Select one electiv		10	Select one of the	following:	10
Elective unit n	nust be Level 1 or higher		MATH 1021	Mathematics for Engineers Preliminary	
	Credit Points	40	MATH 1016	Mathematics for Engineers 1	
Year 2			ENGR 1018	Fundamentals of Mechanics	10
Autumn session			PROC 1008	Introduction to Materials Engineering	10
MECH 2001	Kinematics and Kinetics of Machines	10	ENGR 1024	Introduction to Engineering Practice	10
MECH 2003	Mechanics of Materials	10		Credit Points	40
ELEC 2001	Circuit Theory	10	Autumn session		
ELEC 1001	Digital Systems 1	10	Select one of the	following:	10
	Credit Points	40	MATH 1016	Mathematics for Engineers 1	
Spring session	oreant romes	.0	MATH 1019	Mathematics for Engineers 2	
MECH 3004	Dynamics of Mechanical Systems	10	ELEC 1006	Engineering Computing	10
ENGR 2001	Automated Manufacturing	10	ENGR 1011	Engineering Physics	10
ELEC 2010	Power and Machines	10	Select one electiv	e	10
ELEC 2008	Microcontrollers and PLCs	10	Elective unit n	nust be Level 1 or higher	
		. 0			
	Credit Points	40			
Year 3	Credit Points	40		Credit Points	40
Year 3	Credit Points	40	Year 2	Credit Points	40
Autumn session			Spring session		
Autumn session MECH 3005	Mechanical Design	10	Spring session ENGR 2001	Automated Manufacturing	10
Autumn session MECH 3005 MECH 3001	Mechanical Design Advanced Dynamics	10 10	Spring session ENGR 2001 ELEC 2008	Automated Manufacturing Microcontrollers and PLCs	10 10
Autumn session MECH 3005 MECH 3001 ELEC 2004	Mechanical Design Advanced Dynamics Electronics	10 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub	Automated Manufacturing Microcontrollers and PLCs ject	10 10 10
Autumn session MECH 3005 MECH 3001	Mechanical Design Advanced Dynamics Electronics Mobile Robotics	10 10 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv	Automated Manufacturing Microcontrollers and PLCs ject e	10 10
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003	Mechanical Design Advanced Dynamics Electronics	10 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv	Automated Manufacturing Microcontrollers and PLCs ject	10 10 10
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points	10 10 10 10 40	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv	Automated Manufacturing Microcontrollers and PLCs ject e	10 10 10
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design	10 10 10 10 40	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher	10 10 10 10
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject	10 10 10 10 40	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher	10 10 10 10
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject	10 10 10 10 40 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines	10 10 10 10
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv One alternate sub	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject e	10 10 10 10 40	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n  Autumn session MECH 2001 MECH 2003	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines Mechanics of Materials	10 10 10 10 40
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv One alternate sub	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject	10 10 10 10 40 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n  Autumn session MECH 2001	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines Mechanics of Materials Circuit Theory	10 10 10 10 40
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv One alternate sub	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject e ject nust be Level 2 or higher	10 10 10 10 40 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n  Autumn session MECH 2001 MECH 2003 ELEC 2001	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines Mechanics of Materials Circuit Theory Digital Systems 1	10 10 10 10 40 10 10 10
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv One alternate sub • Elective unit n	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject e ject nust be Level 2 or higher	10 10 10 10 40 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n  Autumn session MECH 2001 MECH 2003 ELEC 2001 ELEC 1001	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines Mechanics of Materials Circuit Theory	10 10 10 10 40 10 10
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv One alternate sub • Elective unit n  Industrial Experien	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject e ject nust be Level 2 or higher	10 10 10 10 40 10 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n  Autumn session MECH 2001 MECH 2003 ELEC 2001 ELEC 1001  Year 3	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines Mechanics of Materials Circuit Theory Digital Systems 1	10 10 10 10 40 10 10 10
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv One alternate sub • Elective unit n  Industrial Experien	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject e ject nust be Level 2 or higher Industrial Experience (Engineering)	10 10 10 10 40 10 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n  Autumn session MECH 2001 MECH 2003 ELEC 2001 ELEC 1001  Year 3 Spring session	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines Mechanics of Materials Circuit Theory Digital Systems 1  Credit Points	10 10 10 10 40 10 10 10 40
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv One alternate sub • Elective unit n  Industrial Experient ENGR 3017	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject e ject nust be Level 2 or higher Industrial Experience (Engineering)	10 10 10 10 40 10 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n  Autumn session MECH 2001 MECH 2003 ELEC 2001 ELEC 1001  Year 3 Spring session MECH 3006	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines Mechanics of Materials Circuit Theory Digital Systems 1 Credit Points  Mechatronic Design	10 10 10 10 40 10 10 40
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv One alternate sub • Elective unit n Industrial Experier ENGR 3017  Year 4 Autumn session	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject e ject nust be Level 2 or higher Industrial Experience (Engineering)	10 10 10 10 40 10 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n  Autumn session MECH 2001 MECH 2003 ELEC 2001 ELEC 1001  Year 3 Spring session MECH 3006 MECH 3004	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines Mechanics of Materials Circuit Theory Digital Systems 1  Credit Points  Mechatronic Design Dynamics of Mechanical Systems	10 10 10 10 40 10 10 40
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv One alternate sub • Elective unit n Industrial Experier ENGR 3017  Year 4 Autumn session	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject e ject nust be Level 2 or higher nce Industrial Experience (Engineering) Credit Points	10 10 10 40 40 10 10 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n  Autumn session MECH 2001 MECH 2003 ELEC 2001 ELEC 1001  Year 3 Spring session MECH 3006 MECH 3004 ELEC 2010	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines Mechanics of Materials Circuit Theory Digital Systems 1  Credit Points  Mechatronic Design Dynamics of Mechanical Systems Power and Machines	10 10 10 10 40 10 10 40
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv One alternate sub • Elective unit not be the select one se	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject e ject nust be Level 2 or higher nce Industrial Experience (Engineering) Credit Points  Robotics Final Year Project 1 (UG Engineering)	10 10 10 40 10 10 10 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n  Autumn session MECH 2001 MECH 2003 ELEC 2001 ELEC 1001  Year 3 Spring session MECH 3006 MECH 3004	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines Mechanics of Materials Circuit Theory Digital Systems 1  Credit Points  Mechatronic Design Dynamics of Mechanical Systems Power and Machines ject	10 10 10 10 40 10 10 40
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv One alternate sub • Elective unit n  Industrial Experient ENGR 3017  Year 4  Autumn session MECH 4004 ENGR 4025	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject e ject nust be Level 2 or higher Industrial Experience (Engineering) Credit Points  Robotics Final Year Project 1 (UG Engineering)	10 10 10 40 40 10 10 10 40	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n  Autumn session MECH 2001 MECH 2003 ELEC 2001 ELEC 1001  Year 3 Spring session MECH 3006 MECH 3004 ELEC 2010 One alternate sub	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines Mechanics of Materials Circuit Theory Digital Systems 1  Credit Points  Mechatronic Design Dynamics of Mechanical Systems Power and Machines	10 10 10 10 40 10 10 40
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Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv One alternate sub • Elective unit n  Industrial Experier ENGR 3017  Year 4 Autumn session MECH 4004 ENGR 4025 One alternate sub Select one electiv	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject e ject nust be Level 2 or higher nce Industrial Experience (Engineering) Credit Points  Robotics Final Year Project 1 (UG Engineering) ject e nust be Level 2 or higher	10 10 10 40 10 10 10 10 10 10 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n  Autumn session MECH 2001 MECH 2003 ELEC 2001 ELEC 1001  Year 3 Spring session MECH 3006 MECH 3004 ELEC 2010 One alternate sub  Autumn session MECH 3005	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines Mechanics of Materials Circuit Theory Digital Systems 1 Credit Points  Mechatronic Design Dynamics of Mechanical Systems Power and Machines ject Credit Points  Mechanical Design	10 10 10 10 40 10 10 10 10 10 10 40
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv One alternate sub Elective unit notation Industrial Experient ENGR 3017  Year 4 Autumn session MECH 4004 ENGR 4025 One alternate sub Select one electiv Elective unit notation	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject e ject nust be Level 2 or higher nce Industrial Experience (Engineering) Credit Points  Robotics Final Year Project 1 (UG Engineering) ject	10 10 10 40 10 10 10 10 10 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n  Autumn session MECH 2003 ELEC 2001 ELEC 1001  Year 3 Spring session MECH 3006 MECH 3004 ELEC 2010 One alternate sub  Autumn session MECH 3005 MECH 3005 MECH 3001	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines Mechanics of Materials Circuit Theory Digital Systems 1  Credit Points  Mechatronic Design Dynamics of Mechanical Systems Power and Machines ject  Credit Points  Mechanical Design Advanced Dynamics	10 10 10 10 10 10 10 10 10 10 10 10
Autumn session MECH 3005 MECH 3001 ELEC 2004 MECH 4003  Spring session MECH 3006 One alternate sub Select one electiv One alternate sub • Elective unit n  Industrial Experies ENGR 3017  Year 4 Autumn session MECH 4004 ENGR 4025 One alternate sub Select one electiv	Mechanical Design Advanced Dynamics Electronics Mobile Robotics Credit Points  Mechatronic Design ject e ject nust be Level 2 or higher nce Industrial Experience (Engineering) Credit Points  Robotics Final Year Project 1 (UG Engineering) ject e nust be Level 2 or higher	10 10 10 40 10 10 10 10 10 10 10 10	Spring session ENGR 2001 ELEC 2008 One alternate sub Select one electiv • Elective unit n  Autumn session MECH 2001 MECH 2003 ELEC 2001 ELEC 1001  Year 3 Spring session MECH 3006 MECH 3004 ELEC 2010 One alternate sub  Autumn session MECH 3005	Automated Manufacturing Microcontrollers and PLCs ject e nust be Level 2 or higher  Credit Points  Kinematics and Kinetics of Machines Mechanics of Materials Circuit Theory Digital Systems 1 Credit Points  Mechatronic Design Dynamics of Mechanical Systems Power and Machines ject Credit Points  Mechanical Design	10 10 10 10 40 10 10 10 10 10 10 40

Industrial Experi	ence	
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	40
Year 4		
Spring session		
MECH 4002	Computer Aided Engineering	10
ENGR 4026	Final Year Project 2 (UG Engineering)	10
One alternate subject		10
Select one elective		10
Elective unit	must be Level 2 or higher	
	Credit Points	40
Autumn session		
MECH 4004	Robotics	10
ENGR 4025	Final Year Project 1 (UG Engineering)	10
One alternate subject		10
Select one elective		10
• Elective unit	must be Level 2 or higher	
	Credit Points	40
	Total Credit Points	320

# **Equivalent Subjects**

The subjects listed below count towards completion of this program for students who passed these subjects in Autumn 2022 or earlier.

ENGR 1008 - Engineering Materials, replaced by PROC 1008 - Introduction to Materials Engineering

# **Related Programs**

Bachelor of Engineering Advanced (Honours) (3771) (https://hbook.westernsydney.edu.au/archives/2021-2022/programs/bachelorengineering-advanced-honours/)

Bachelor of Engineering Science (3691) (https://hbook.westernsydney.edu.au/archives/2021-2022/programs/bachelorengineering-science/)