

# **ELECTRICAL ENGINEERING, TESTAMUR MAJOR (T102)**

Western Sydney University Major Code: T102

**Previous Code:** KT3172, MT3053

Available to students in other Western Sydney University programs?

No

# **Handbook Summary**

## **Summary 2022-2023**

The Electrical Engineering major 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. This major includes a mandatory 12-week industrial placement as a completion requirement.

## Summary 2024

The Electrical Engineering major 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. All students complete a mandatory 300 to 450 hour industrial placement.

## Location

Campus	Mode	Advice	Students who finish MATH 1021 ( <a href="https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201021">https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201021</a> ) Mathematics for Engineers Preliminary will then use this subject as an elective.		
			Start-year intake		
			Course	Title	Credit Points
Penrith Campus	Internal	Major Advice (edbe@westernsydney.edu.au)	Year 1		
Sydney City Campus*	Internal	Major Advice (edbe@westernsydney.edu.au)	Autumn session		
Surabaya Campus - Indonesia	Internal	Major Advice ( <a href="https://hbook.westernsydney.edu.au/majors-minors/electrical-engineering-ug-testamur-major/">https://hbook.westernsydney.edu.au/majors-minors/electrical-engineering-ug-testamur-major/</a> edbe@westernsydney.edu.au)	ELEC 1006	Engineering Computing	10
			ENGR 1011	Engineering Physics	10
			ENGR 1024	Introduction to Engineering Practice	10
			Select one of the following:		
			MATH 1021	Mathematics for Engineers Preliminary	
			MATH 1016	Mathematics for Engineers 1	

\* Curriculum delivered through an agreement with another party

## Major Sequence Current

This major sequence applies to students who commenced in 2024 or later. If you commenced prior to 2024 please refer to the Sequence 2022-23 tab for details.

This major is included in Bachelor of Engineering Science, Bachelor of Engineering (Honours), Bachelor of Engineering Advanced (Honours) and Bachelor of Engineering (Honours)/Bachelor of Business.

Please follow the recommended sequence for your program as noted below.

## **Bachelor of Engineering Science (3691)**

This major will be offered at Parramatta South, Penrith, Sydney City and Surabaya Indonesia campuses.

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

**\* All students undertaking the Bachelor of Engineering Science are required to enrol in MATH 1021 (<https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201021>) Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study.**

The readiness test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether a student will remain in MATH 1021 (<https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201021>) Mathematics for Engineers Preliminary or be transferred by the School to MATH 1016 (<https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201016>) Mathematics for Engineers 1.

Students remaining in MATH 1021 (<https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201021>) Mathematics for Engineers Preliminary will be required to complete MATH 1016 (<https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201016>) Mathematics for Engineers 1 during second semester and will be encouraged to complete MATH 1019 (<https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201019>) Mathematics for Engineers 2 during the Summer session.

Start-year intake		
Course	Title	Credit Points
<b>Year 1</b>		
<b>Autumn session</b>		
ELEC 1006	Engineering Computing	10
ENGR 1011	Engineering Physics	10
ENGR 1024	Introduction to Engineering Practice	10
Select one of the following:		10
MATH 1021	Mathematics for Engineers Preliminary	
MATH 1016	Mathematics for Engineers 1	
<b>Credit Points</b>		40
<b>Spring session</b>		
ELEC 1003	Electrical Fundamentals	10
ENGR 1018	Fundamentals of Mechanics	10
PROC 1008	Introduction to Materials Engineering	10
Select one of the following:		10
MATH 1019	Mathematics for Engineers 2	
MATH 1016	Mathematics for Engineers 1	
<b>Credit Points</b>		40
<b>Year 2</b>		
<b>Autumn session</b>		
ENGR 3029	Specialisation Workshop 1	10
ELEC 2001	Circuit Theory	10
ELEC 2011	Signals and Systems	10

ELEC 1001	Digital Systems 1	10	ELEC 1001	Digital Systems 1	10			
	<b>Credit Points</b>	<b>40</b>		<b>Credit Points</b>	<b>40</b>			
<b>Spring session</b>								
ENGR 3030	Specialisation Workshop 2	10	ENGR 3013	Engineering Science Project 1	10			
ELEC 2009	Microprocessor Systems	10	ELEC 3003	Digital Signal Processing	10			
ELEC 3011	Power and Machines	10	Select two electives (Level 2 or higher)		20			
ENGR 3006	Control Systems	10		<b>Credit Points</b>	<b>40</b>			
	<b>Credit Points</b>	<b>40</b>						
<b>Year 3</b>								
<b>Autumn session</b>								
ENGR 3013	Engineering Science Project 1	10	ENGR 3014	Engineering Science Project 2	10			
ELEC 3001	Communication Systems	10	ELEC 3001	Communication Systems	10			
ELEC 3006	Electrical Machines 1	10	ELEC 3006	Electrical Machines 1	10			
ELEC 2004	Electronics	10	ELEC 2004	Electronics	10			
	<b>Credit Points</b>	<b>40</b>		<b>Credit Points</b>	<b>40</b>			
<b>Spring session</b>								
ENGR 3014	Engineering Science Project 2	10	ENGR 2033	Industrial Experience (Engineering Technologist)	0			
ELEC 3003	Digital Signal Processing	10		<b>Credit Points</b>	<b>40</b>			
Select two electives (Level 2 or higher)		20		<b>Total Credit Points</b>	<b>240</b>			
<b>Industrial Experience</b>								
ENGR 2033	Industrial Experience (Engineering Technologist)	0	<b>Surabaya Campus Indonesia</b>					
	<b>Credit Points</b>	<b>40</b>						
	<b>Total Credit Points</b>	<b>240</b>						
<b>Mid-year intake</b>								
<b>Course</b>	<b>Title</b>	<b>Credit Points</b>	<b>Course</b>	<b>Title</b>	<b>Credit Points</b>			
<b>Year 1</b>								
<b>Spring session</b>								
ELEC 1003	Electrical Fundamentals	10	MATH 1016	Mathematics for Engineers 1	10			
ENGR 1018	Fundamentals of Mechanics	10	ELEC 1003	Electrical Fundamentals	10			
PROC 1008	Introduction to Materials Engineering	10	ENGR 1018	Fundamentals of Mechanics	10			
Select one of the following:		10	ENGR 1011	Engineering Physics	10			
MATH 1021	Mathematics for Engineers Preliminary		CULT 1030	Pancasila	5			
MATH 1016	Mathematics for Engineers 1							
	<b>Credit Points</b>	<b>40</b>						
	<b>Total Credit Points</b>	<b>240</b>	<b>Year 1</b>					
<b>Autumn session</b>								
ELEC 1006	Engineering Computing	10	ENGR 3029	Specialisation Workshop 1	10			
ENGR 1011	Engineering Physics	10	PROC 1008	Introduction to Materials Engineering	10			
ENGR 1024	Introduction to Engineering Practice	10	ELEC 2009	Microprocessor Systems	10			
Select one of the following:		10	LANG 1036	Indonesian Language	5			
MATH 1019	Mathematics for Engineers 2							
MATH 1016	Mathematics for Engineers 1							
	<b>Credit Points</b>	<b>40</b>						
	<b>Total Credit Points</b>	<b>240</b>	<b>Semester 1</b>					
<b>Year 2</b>								
<b>Spring session</b>								
ENGR 3029	Specialisation Workshop 1	10		<b>Semester 3</b>				
ELEC 2009	Microprocessor Systems	10	ENGR 3029	Specialisation Workshop 1	10			
ELEC 3011	Power and Machines	10	PROC 1008	Introduction to Materials Engineering	10			
ENGR 3006	Control Systems	10	ELEC 2009	Microprocessor Systems	10			
	<b>Credit Points</b>	<b>40</b>	LANG 1036	Indonesian Language	5			
	<b>Total Credit Points</b>	<b>240</b>						
<b>Autumn session</b>								
ENGR 3030	Specialisation Workshop 2	10		<b>Semester 4</b>				
ELEC 2001	Circuit Theory	10	ENGR 3030	Specialisation Workshop 2	10			
ELEC 2011	Signals and Systems	10	ELEC 2001	Circuit Theory	10			
	<b>Credit Points</b>	<b>40</b>	PHIL 1008	Religion	5			
	<b>Total Credit Points</b>	<b>240</b>						
<b>Year 3</b>								
<b>Semester 5</b>								
ENGR 3030	Specialisation Workshop 2	10	ENGR 3013	Engineering Science Project 1	10			
ELEC 2001	Circuit Theory	10	ELEC 3011	Power and Machines	10			
ELEC 2011	Signals and Systems	10	ELEC 3003	Digital Signal Processing	10			
	<b>Credit Points</b>	<b>40</b>	ENGR 3006	Control Systems	10			
	<b>Total Credit Points</b>	<b>240</b>						
<b>Autumn session</b>								
ENGR 3030	Specialisation Workshop 2	10		<b>Semester 6</b>				
ELEC 2001	Circuit Theory	10	ENGR 3014	Engineering Science Project 2	10			
ELEC 2011	Signals and Systems	10						
	<b>Credit Points</b>	<b>40</b>						
	<b>Total Credit Points</b>	<b>240</b>						

ELEC 3001	Communication Systems	10	<b>Spring session</b>		
ELEC 3006	Electrical Machines 1	10	ELEC 3009	Power Systems	10
ELEC 2004	Electronics	10	ELEC 3003	Digital Signal Processing	10
<b>Industrial Experience</b>			ELEC 4008	Electrical Drives	10
ENGR 2033	Industrial Experience (Engineering Technologist)	0	ELEC 3004	Digital Systems 2	10
<b>Credit Points</b>		<b>80</b>	<b>Industrial Experience</b>		
<b>Total Credit Points</b>		<b>240</b>	<b>Credit Points</b>		<b>40</b>

## Bachelor of Engineering Advanced (Honours) (3771)

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

\*\* Electives must be Level 2 or higher

### Start-year intake

Course	Title	Credit Points		
<b>Year 1</b>				
<b>Autumn session</b>				
MATH 1034	Mathematics for Engineers 1 (Advanced)	10		
ENGR 1024	Introduction to Engineering Practice	10		
ENGR 1047	Advanced Engineering Physics 1	10		
ELEC 1006	Engineering Computing	10		
<b>Credit Points</b>		<b>40</b>		
<b>Spring session</b>				
ELEC 1003	Electrical Fundamentals	10		
MATH 1035	Mathematics for Engineers 2 (Advanced)	10		
ENGR 2023	Advanced Engineering Physics 2	10		
ENGR 1018	Fundamentals of Mechanics	10		
<b>Credit Points</b>		<b>40</b>		

### Year 2

Course	Title	Credit Points		
<b>Year 2</b>				
<b>Autumn session</b>				
ELEC 2001	Circuit Theory	10		
ELEC 1001	Digital Systems 1	10		
ELEC 2004	Electronics	10		
ELEC 2011	Signals and Systems	10		
<b>Credit Points</b>		<b>40</b>		
<b>Spring session</b>				
ELEC 2009	Microprocessor Systems	10		
ELEC 3011	Power and Machines	10		
COMP 2008	Computer Organisation	10		
Select one elective** or Minor subject		10		

Students who fail to maintain a minimum GPA of 5.0 at the end of completion of 160 Credit Points, and again at the completion of 200 Credit points will be automatically transferred to the B. Engineering (Honours) (3740) program.

Course	Title	Credit Points		
<b>Year 3</b>				
<b>Autumn session</b>				
ELEC 3001	Communication Systems	10		
ELEC 3006	Electrical Machines 1	10		
BUSM 2049	Creative and Innovative Thinkers	10		
Select one elective** or Minor subjects		10		
<b>Credit Points</b>		<b>40</b>		
<b>Year 2</b>				
<b>Spring session</b>				
ELEC 2011	Signals and Systems	10		
ELEC 2009	Microprocessor Systems	10		

### Year 4

#### Autumn session

ELEC 4002	Power Electronics	10
ENGR 4043	Advanced Engineering Thesis 1: Preliminary Investigations	20
Select one elective** or Minor subject		10
<b>Credit Points</b>		<b>40</b>

#### Spring session

ELEC 4009	Instrumentation and Measurement	10
ENGR 4044	Advanced Engineering Thesis 2: Detailed Investigations	20
Select one elective** or Minor subject		10
<b>Credit Points</b>		<b>40</b>

#### Total Credit Points

320

#### Optional Elective

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.

ENGR 3022 Special Technical Project

#### Equivalent Subjects

The subjects listed below count towards completion of this program for students who passed these subjects in 2023 or earlier.

BUSM 2047 Venture Makers Foundations, replaced by BUSM 2049 Creative and Innovative Thinkers

### Mid-year intake

Course	Title	Credit Points
<b>Year 1</b>		
<b>Spring session</b>		
MATH 1034	Mathematics for Engineers 1 (Advanced)	10
ELEC 1003	Electrical Fundamentals	10
ENGR 2023	Advanced Engineering Physics 2	10
ENGR 1018	Fundamentals of Mechanics	10
<b>Credit Points</b>		<b>40</b>
<b>Autumn session</b>		
MATH 1035	Mathematics for Engineers 2 (Advanced)	10
ELEC 1001	Digital Systems 1	10
ENGR 1047	Advanced Engineering Physics 1	10
ELEC 2006	Engineering Computing	10
<b>Credit Points</b>		<b>40</b>
<b>Year 2</b>		
<b>Spring session</b>		
ELEC 2011	Signals and Systems	10
ELEC 2009	Microprocessor Systems	10

COMP 2008	Computer Organisation	10
ENGR 1024	Introduction to Engineering Practice	10
	<b>Credit Points</b>	<b>40</b>
<b>Autumn session</b>		
ELEC 2001	Circuit Theory	10
ELEC 2004	Electronics	10
Select two electives** or Minor subjects		20
Students who fail to maintain a minimum GPA of 5.0 at the end of completion of 160 Credit Points, and again at the completion of 200 Credit points will be automatically transferred to the B. Engineering (Honours) (3740) program.		
	<b>Credit Points</b>	<b>40</b>
<b>Year 3</b>		
<b>Spring session</b>		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
ELEC 3011	Power and Machines	10
ELEC 3004	Digital Systems 2	10
	<b>Credit Points</b>	<b>40</b>
<b>Autumn session</b>		
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
BUSM 2049	Creative and Innovative Thinkers	10
Select one elective** or Minor subject		10
<b>Industrial Experience</b>		
ENGR 3017	Industrial Experience (Engineering)	0
	<b>Credit Points</b>	<b>40</b>
<b>Year 4</b>		
<b>Spring session</b>		
ENGR 4043	Advanced Engineering Thesis 1: Preliminary Investigations	20
ELEC 4009	Instrumentation and Measurement	10
ELEC 4008	Electrical Drives	10
	<b>Credit Points</b>	<b>40</b>
<b>Autumn session</b>		
ENGR 4044	Advanced Engineering Thesis 2: Detailed Investigations	20
ELEC 4002	Power Electronics	10
Select one elective** or minor subject		10
	<b>Credit Points</b>	<b>40</b>
	<b>Total Credit Points</b>	<b>320</b>

**Optional Elective**

The following subject is an optional elective unit 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.

ENGR 3022 Special Technical Project

**Equivalent Subjects**

The subjects listed below count towards completion of this program for students who passed these subjects in 2023 or earlier.

BUSM 2047 Venture Makers Foundations, replaced by BUSM 2049 Creative and Innovative Thinkers

## Bachelor of Engineering (Honours) (3740)

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

**\* All students undertaking the Bachelor of Engineering (Honours) are required to enrol in MATH 1021 Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study.**

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

Students remaining in MATH 1021 Mathematics for Engineers Preliminary will be required to complete MATH 1016 Mathematics for Engineers 1 during second semester and will be encouraged to complete MATH 1019 Mathematics for Engineers 2 during the Summer session.

**\*\* Electives** must be Level 2 or higher (An exception applies for students completing MATH 1021 Mathematics for Engineers Preliminary. This subject will then count as one of the elective subjects)

**Start-year intake**

Course	Title	Credit Points
<b>Year 1</b>		
<b>Autumn session</b>		
ENGR 1011	Engineering Physics	10
ENGR 1024	Introduction to Engineering Practice	10
ELEC 1006	Engineering Computing	10
Select one of the following:		10
MATH 1021	Mathematics for Engineers Preliminary	
MATH 1016	Mathematics for Engineers 1	
	<b>Credit Points</b>	<b>40</b>
<b>Spring session</b>		
ENGR 1018	Fundamentals of Mechanics	10
ELEC 1003	Electrical Fundamentals	10
PROC 1008	Introduction to Materials Engineering	10
Select one of the following:		10
MATH 1019	Mathematics for Engineers 2	
MATH 1016	Mathematics for Engineers 1	
	<b>Credit Points</b>	<b>40</b>
<b>Year 2</b>		
<b>Autumn session</b>		
ELEC 2001	Circuit Theory	10
ELEC 2004	Electronics	10
ELEC 2011	Signals and Systems	10
ELEC 1001	Digital Systems 1	10
	<b>Credit Points</b>	<b>40</b>
<b>Spring session</b>		
ELEC 2009	Microprocessor Systems	10
ELEC 2006	Engineering Electromagnetics	10
ELEC 3011	Power and Machines	10
ENGR 3006	Control Systems	10
	<b>Credit Points</b>	<b>40</b>

Year 3						
Autumn session		Autumn session				
ELEC 3001	Communication Systems	10	ELEC 2011	Signals and Systems	10	
ELEC 3006	Electrical Machines 1	10	ELEC 2004	Electronics	10	
ELEC 2007	Engineering Visualization	10	ELEC 2001	Circuit Theory	10	
Select one elective** or minor subject		10	ENGR 1024	Introduction to Engineering Practice	10	
				<b>Credit Points</b>	<b>40</b>	
	<b>Credit Points</b>	<b>40</b>	Year 3			
Spring session		Spring session				
ELEC 3002	Data Communications	10	ELEC 3002	Data Communications	10	
ELEC 3003	Digital Signal Processing	10	ELEC 3003	Digital Signal Processing	10	
ELEC 3004	Digital Systems 2	10	ELEC 3011	Power and Machines	10	
Select one elective** or minor subject		10	ENGR 3006	Control Systems	10	
				<b>Credit Points</b>	<b>40</b>	
Industrial Experience		Industrial Experience				
ENGR 3017	Industrial Experience (Engineering)	0	ELEC 3001	Communication Systems	10	
	<b>Credit Points</b>	<b>40</b>	ELEC 3006	Electrical Machines 1	10	
Year 4						
Autumn session		Autumn session				
ELEC 4002	Power Electronics	10	ELEC 2007	Engineering Visualization	10	
ENGR 4041	Final Year Project 1 (UG Engineering)	20	Select one elective** or minor subject		10	
Select one elective** or minor subject		10				
	<b>Credit Points</b>	<b>40</b>	Industrial Experience			
			ENGR 3017	Industrial Experience (Engineering)	0	
	<b>Credit Points</b>	<b>40</b>				
Spring session		Year 4				
ELEC 4009	Instrumentation and Measurement	10	ELEC 4009	Instrumentation and Measurement	10	
ENGR 4042	Final Year Project 2 (UG Engineering)	20	ENGR 4041	Final Year Project 1 (UG Engineering)	20	
Select one elective** or minor subject		10	Select one elective** or minor subject		10	
	<b>Credit Points</b>	<b>40</b>				
	<b>Total Credit Points</b>	<b>320</b>		<b>Credit Points</b>	<b>40</b>	
Mid-year intake						
Course	Title	Credit Points	Autumn session			
			ELEC 4002	Power Electronics	10	
Year 1						
Spring session			ENGR 4042	Final Year Project 2 (UG Engineering)	20	
ENGR 1018	Fundamentals of Mechanics	10	Select one elective** or minor subject		10	
ELEC 1003	Electrical Fundamentals	10		<b>Credit Points</b>	<b>40</b>	
PROC 1008	Introduction to Materials Engineering	10		<b>Total Credit Points</b>	<b>320</b>	
Select one of the following:		10				
MATH 1021	Mathematics for Engineers Preliminary					
MATH 1016	Mathematics for Engineers 1					
	<b>Credit Points</b>	<b>40</b>	Bachelor of Engineering (Honours)/ Bachelor of Business (3800)			
Autumn session						
ENGR 1011	Engineering Physics	10				
ELEC 1006	Engineering Computing	10				
ELEC 1001	Digital Systems 1	10				
Select one of the following:		10	Start-year intake			
MATH 1019	Mathematics for Engineers 2		Course	Title	Credit Points	
MATH 1016	Mathematics for Engineers 1		Year 1			
	<b>Credit Points</b>	<b>40</b>	Autumn session			
Year 2				MATH 1016	Mathematics for Engineers 1	10
Spring session				ENGR 1011	Engineering Physics	10
ELEC 2009	Microprocessor Systems	10		BBus Core Subject 1		10
ELEC 2006	Engineering Electromagnetics	10		BBus Core Subject 2		10
ELEC 3004	Digital Systems 2	10			<b>Credit Points</b>	<b>40</b>
Select one elective** or minor subject		10	Spring session			
	<b>Credit Points</b>	<b>40</b>	MATH 1019	Mathematics for Engineers 2	10	
				PROC 1008	Introduction to Materials Engineering	10
				BBus Core Subject 3		10
				BBus Core Subject 4		10
					<b>Credit Points</b>	<b>40</b>

<b>Year 2</b>				
<b>Autumn session</b>				
ELEC 1006	Engineering Computing	10	ELEC 3004	Digital Systems 2
ENGR 1024	Introduction to Engineering Practice	10	ENGR 4042	Final Year Project 2 (UG Engineering)
ELEC 1001	Digital Systems 1	10		<b>Credit Points</b>
BBus Major Subject 1		10		<b>Total Credit Points</b>
	<b>Credit Points</b>	<b>40</b>		<b>440</b>
<b>Spring session</b>				
ELEC 1003	Electrical Fundamentals	10		If you commenced in 2024 or later please refer to the Sequence 2024 tab for details.
ENGR 1018	Fundamentals of Mechanics	10		
BBus Major Subject 2		10		<b>This major is included in Bachelor of Engineering Science, Bachelor of Engineering (Honours), Bachelor of Engineering Advanced (Honours) and Bachelor of Engineering (Honours)/Bachelor of Business.</b>
BBus Major Subject 3		10		
	<b>Credit Points</b>	<b>40</b>		
<b>Year 3</b>				
<b>Autumn session</b>				
ELEC 2004	Electronics	10		Please follow the recommended sequence for your program as noted below.
ELEC 2001	Circuit Theory	10		
ELEC 2011	Signals and Systems	10		
BBus Professional Subject 1		10		
	<b>Credit Points</b>	<b>40</b>		
<b>Spring session</b>				
ELEC 2009	Microprocessor Systems	10		
ELEC 3011	Power and Machines	10		
ELEC 3002	Data Communications	10		
BBus Major Subject 4		10		
	<b>Credit Points</b>	<b>40</b>		
<b>Year 4</b>				
<b>Autumn session</b>				
ELEC 3001	Communication Systems	10		
ELEC 2007	Engineering Visualization	10		
BBus Professional Subject 2		10		
BBus Major Subject 5		10		
	<b>Credit Points</b>	<b>40</b>		
<b>Spring session</b>				
ELEC 2006	Engineering Electromagnetics	10		
ENGR 3006	Control Systems	10		
ELEC 3003	Digital Signal Processing	10		
BBus Major Subject 6		10		
<b>Industrial Experience</b>				
ENGR 3017	Industrial Experience (Engineering)	0		
	<b>Credit Points</b>	<b>40</b>		
<b>Year 5</b>				
<b>Autumn session</b>				
ELEC 3006	Electrical Machines 1	10		
BBus Professional Subject 3		10		
BBus Major Subject 7		10		
BBus Major Subject 8		10		
	<b>Credit Points</b>	<b>40</b>		
<b>Spring session</b>				
ELEC 4009	Instrumentation and Measurement	10		
ENGR 4041	Final Year Project 1 (UG Engineering)	20		
BBus Professional Subject 4		10		
	<b>Credit Points</b>	<b>40</b>		
<b>Year 6</b>				
<b>Autumn session</b>				
ELEC 4002	Power Electronics	10		

## Major Sequence 2022-23

If you commenced in 2024 or later please refer to the Sequence 2024 tab for details.

**This major is included in Bachelor of Engineering Science, Bachelor of Engineering (Honours), Bachelor of Engineering Advanced (Honours) and Bachelor of Engineering (Honours)/Bachelor of Business.**

Please follow the recommended sequence for your program as noted below.

## 3691 Bachelor of Engineering Science

This major will be offered at Parramatta South, Penrith and Sydney City campuses

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

**\* All students undertaking the Bachelor of Engineering Science are required to enrol in MATH 1021 (<https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201021>) Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study.**

The readiness test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether a student will remain in MATH 1021 (<https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201021>) Mathematics for Engineers Preliminary or be transferred by the School to MATH 1016 (<https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201016>) Mathematics for Engineers 1.

Students remaining in MATH 1021 (<https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201021>) Mathematics for Engineers Preliminary will be required to complete MATH 1016 (<https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201016>) Mathematics for Engineers 1 during second semester and will be encouraged to complete MATH 1019 (<https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201019>) Mathematics for Engineers 2 during the Summer session.

Students who finish MATH 1021 (<https://hbook.westernsydney.edu.au/archives/2024-2025/search/?P=MATH%201021>) Mathematics for Engineers Preliminary will then use this subject as an elective.

### Start-year intake

Course	Title	Credit Points
<b>Year 1</b>		
<b>Autumn session</b>		
Select one of the following:		10
MATH 1021	Mathematics for Engineers Preliminary	
MATH 1016	Mathematics for Engineers 1	
ELEC 1006	Engineering Computing	10
ENGR 1011	Engineering Physics	10

ENGR 1024	Introduction to Engineering Practice	10	MATH 1016	Mathematics for Engineers 1	
	<b>Credit Points</b>	<b>40</b>	ELEC 1006	Engineering Computing	10
<b>Spring session</b>			ENGR 1011	Engineering Physics	10
Select one of the following:		10	Select one elective		10
MATH 1019	Mathematics for Engineers 2		• Elective unit must be Level 1 or higher		
MATH 1016	Mathematics for Engineers 1				
ELEC 1003	Electrical Fundamentals	10			
ENGR 1018	Fundamentals of Mechanics	10			
Select one elective		10			
	<b>Credit Points</b>	<b>40</b>			
<b>Year 2</b>					
<b>Autumn session</b>					
ENGR 3029	Specialisation Workshop 1	10	ENGR 3029	Specialisation Workshop 1	10
ELEC 2001	Circuit Theory	10	ELEC 2009	Microprocessor Systems	10
ELEC 2011	Signals and Systems	10	ELEC 3011	Power and Machines	10
ELEC 1001	Digital Systems 1	10	ENGR 3006	Control Systems	10
	<b>Credit Points</b>	<b>40</b>			
<b>Spring session</b>					
ENGR 3030	Specialisation Workshop 2	10	ENGR 3030	Specialisation Workshop 2	10
ELEC 2009	Microprocessor Systems	10	ELEC 2001	Circuit Theory	10
ELEC 3011	Power and Machines	10	ELEC 2011	Signals and Systems	10
ENGR 3006	Control Systems	10	ELEC 1001	Digital Systems 1	10
	<b>Credit Points</b>	<b>40</b>			
<b>Year 3</b>					
<b>Autumn session</b>					
ENGR 3013	Engineering Science Project 1	10	ENGR 3013	Engineering Science Project 1	10
ELEC 3009	Power Systems	10	ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10	ELEC 3003	Digital Signal Processing	10
Select one elective (Level 2 or higher)		10			
	<b>Credit Points</b>	<b>40</b>			
<b>Spring session</b>					
ENGR 3014	Engineering Science Project 2	10	ENGR 3014	Engineering Science Project 2	10
ELEC 3001	Communication Systems	10	ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10	ELEC 3006	Electrical Machines 1	10
ELEC 2004	Electronics	10	ELEC 2004	Electronics	10
	<b>Credit Points</b>	<b>40</b>			
<b>Industrial Experience</b>					
ENGR 2033	Industrial Experience (Engineering Technologist)	0	ENGR 2033	Industrial Experience (Engineering Technologist)	0
	<b>Credit Points</b>	<b>40</b>			
	<b>Total Credit Points</b>	<b>240</b>			

## 3771 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 in the recommended sequence below.

### Start-year intake

Course	Title	Credit Points			
<b>Year 1</b>					
<b>Autumn session</b>					
Select one of the following:		10			
MATH 1021	Mathematics for Engineers Preliminary		MATH 1034	Mathematics for Engineers 1 (Advanced)	10
MATH 1016	Mathematics for Engineers 1		ENGR 1024	Introduction to Engineering Practice	10
ELEC 1003	Electrical Fundamentals	10	ENGR 1047	Advanced Engineering Physics 1	10
ENGR 1018	Fundamentals of Mechanics	10	ENGR 1045	Engineering Programming Fundamentals	10
ENGR 1024	Introduction to Engineering Practice	10			
	<b>Credit Points</b>	<b>40</b>			
<b>Spring session</b>					
Select one of the following:		10			
MATH 1019	Mathematics for Engineers 2				
	<b>Credit Points</b>	<b>40</b>			

Spring session		Subject	Title	Credit Points
ELEC 1009	Electrical Circuit Fundamentals	10	HLTH 2003	Biomechanics
MATH 1035	Mathematics for Engineers 2 (Advanced)	10	ENGR 3003	Biomedical Electronics
ENGR 2023	Advanced Engineering Physics 2	10	ENGR 3004	Biomedical Signals and Data Analysis
COMP 2008	Computer Organisation	10	ELEC 3002	Data Communications
	<b>Credit Points</b>	<b>40</b>	ELEC 3004	Digital Systems 2
<b>Year 2</b>			ELEC 2007	Engineering Visualization
<b>Autumn session</b>			BIOS 1022	Introduction to Human Biology
ELEC 2013	Circuits and Signals	10	ELEC 4003	Power Quality
ELEC 1001	Digital Systems 1	10	ELEC 4004	Radio and Satellite Communication
ELEC 2004	Electronics	10	ELEC 4005	Smart Grids and Distributed Generation
ELEC 2014	Mathematics for Electrical Engineers 1	10	ELEC 4006	Sustainable Energy Systems
	<b>Credit Points</b>	<b>40</b>	ELEC 4007	Wireless Communications
<b>Spring session</b>			<b>Mid-year intake</b>	
ELEC 2009	Microprocessor Systems	10	Course	Title
ELEC 3011	Power and Machines	10		
ELEC 2015	Mathematics for Electrical Engineers 2	10	<b>Credit Points</b>	
Select one elective		10	<b>Year 1</b>	
Students who fail to maintain a minimum GPA of 5.0 at the end of completion of 160 Credit Points, and again at the completion of 200 Credit points will be automatically transferred to the B. Engineering (Honours) (3740) program.			<b>Spring session</b>	
	<b>Credit Points</b>	<b>40</b>	MATH 1034	Mathematics for Engineers 1 (Advanced)
<b>Year 3</b>			ELEC 1009	Electrical Circuit Fundamentals
<b>Autumn session</b>			ENGR 2023	Advanced Engineering Physics 2
ELEC 3001	Communication Systems	10	ENGR 1024	Introduction to Engineering Practice
ELEC 3006	Electrical Machines 1	10		<b>Credit Points</b>
Select one alternate subject		10	<b>Autumn session</b>	
Select one elective		10	MATH 1035	Mathematics for Engineers 2 (Advanced)
	<b>Credit Points</b>	<b>40</b>	ELEC 1001	Digital Systems 1
<b>Spring session</b>			ENGR 1047	Advanced Engineering Physics 1
ELEC 3009	Power Systems	10	ENGR 1045	Engineering Programming Fundamentals
ELEC 3003	Digital Signal Processing	10		<b>Credit Points</b>
ELEC 4008	Electrical Drives	10	<b>Year 2</b>	
Select one elective		10	<b>Spring session</b>	
<b>Industrial Experience</b>			ELEC 2014	Mathematics for Electrical Engineers 1
ENGR 3017	Industrial Experience (Engineering)	0	ELEC 2009	Microprocessor Systems
	<b>Credit Points</b>	<b>40</b>	COMP 2008	Computer Organisation
<b>Year 4</b>			Select one elective	
<b>Autumn session</b>				<b>Credit Points</b>
ELEC 4002	Power Electronics	10	<b>Autumn session</b>	
ENGR 4037	Advanced Engineering Thesis 1: Preliminary Investigations	10	ELEC 2015	Mathematics for Electrical Engineers 2
Select one alternate subject		10	ELEC 2013	Circuits and Signals
Select one elective		10	ELEC 2004	Electronics
	<b>Credit Points</b>	<b>40</b>	select one elective	
Students who fail to maintain a minimum GPA of 5.0 at the end of completion of 160 Credit Points, and again at the completion of 200 Credit points will be automatically transferred to the B. Engineering (Honours) (3740) program.			Students who fail to maintain a minimum GPA of 5.0 at the end of completion of 160 Credit Points, and again at the completion of 200 Credit points will be automatically transferred to the B. Engineering (Honours) (3740) program.	
<b>Spring session</b>			<b>Credit Points</b>	
ELEC 4009	Instrumentation and Measurement	10	<b>Year 3</b>	
ENGR 4036	Advanced Engineering Thesis 2: Detailed Investigations	10	<b>Spring session</b>	
Select two alternate subjects		20	ELEC 3009	Power Systems
	<b>Credit Points</b>	<b>40</b>	ELEC 3003	Digital Signal Processing
	<b>Total Credit Points</b>	<b>320</b>	ELEC 3011	Power and Machines
<b>Alternate Subjects</b>			Select one alternate subject	
				<b>Credit Points</b>
<b>Autumn session</b>			ELEC 3001	Communication Systems

ELEC 3006	Electrical Machines 1	10	a student will remain in MATH 1021 Mathematics for Engineers Preliminary or be transferred by the School to MATH 1016 Mathematics for Engineers 1.
Select one alternate subject		10	
Select one elective		10	
<b>Industrial Experience</b>			Students remaining in MATH 1021 Mathematics for Engineers Preliminary will be required to complete MATH 1016 Mathematics for Engineers 1 during second semester and will be encouraged to complete MATH 1019 Mathematics for Engineers 2 during the Summer session.
ENGR 3017	Industrial Experience (Engineering)	0	
	<b>Credit Points</b>	<b>40</b>	
<b>Year 4</b>			
<b>Spring session</b>			
ENGR 4037	Advanced Engineering Thesis 1: Preliminary Investigations	10	<b>Start-year intake</b>
ELEC 4009	Instrumentation and Measurement	10	<b>Course</b>
ELEC 4008	Electrical Drives	10	<b>Title</b>
Select one alternate subject		10	<b>Credit Points</b>
	<b>Credit Points</b>	<b>40</b>	
<b>Autumn session</b>			
ENGR 4036	Advanced Engineering Thesis 2: Detailed Investigations	10	Select one of the following:
ELEC 4002	Power Electronics	10	MATH 1021 Mathematics for Engineers Preliminary
Select one elective		10	MATH 1016 Mathematics for Engineers 1
Select one alternate subject		10	ENGR 1011 Engineering Physics
	<b>Credit Points</b>	<b>40</b>	10
	<b>Total Credit Points</b>	<b>320</b>	ENGR 1024 Introduction to Engineering Practice
			ELEC 1006 Engineering Computing
<b>Alternate Subjects</b>			
<b>Subject</b>	<b>Title</b>	<b>Credit Points</b>	<b>Credit Points</b>
HLTH 2003	Biomechanics	10	
ENGR 3003	Biomedical Electronics	10	
ENGR 3004	Biomedical Signals and Data Analysis	10	
ELEC 3002	Data Communications	10	
ELEC 3004	Digital Systems 2	10	
ELEC 2007	Engineering Visualization	10	
BIOS 1022	Introduction to Human Biology	10	
BIOS 1035	Anatomy and Physiology in Health	10	
ELEC 4003	Power Quality	10	
ELEC 4004	Radio and Satellite Communication	10	
ELEC 4005	Smart Grids and Distributed Generation	10	
ELEC 4006	Sustainable Energy Systems	10	
ELEC 4007	Wireless Communications	10	
<b>Equivalent Subjects</b>			
The subjects listed below count towards completion of this program for students who passed these subjects in 2020 or earlier.			
BIOS 1022 Introduction to Human Biology, replaced by BIOS 1035 Anatomy and Physiology in Health			
<b>3740 Bachelor of Engineering (Honours)</b>			
Qualification for this award requires the successful completion of 320 credit points which include the subjects listed in the recommended sequences below.			
<b>* All students undertaking the Bachelor of Engineering (Honours) are required to enrol in MATH 1021 Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study.</b>			
The readiness test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether			
	<b>Credit Points</b>	<b>40</b>	
<b>Year 3</b>			
<b>Autumn session</b>			
ELEC 3001	Communication Systems	10	
ELEC 3006	Electrical Machines 1	10	
Select one alternate subject		10	
Select one elective		10	
	<b>Credit Points</b>	<b>40</b>	
<b>Spring session</b>			
ELEC 3009	Power Systems	10	
ELEC 3003	Digital Signal Processing	10	
ELEC 4008	Electrical Drives	10	
Select one alternate subject		10	
<b>Industrial Experience</b>			
ENGR 3017	Industrial Experience (Engineering)	0	
	<b>Credit Points</b>	<b>40</b>	

<b>Year 4</b>			Select one alternate subject	10	
<b>Autumn session</b>			<b>Credit Points</b>	<b>40</b>	
ELEC 4002	Power Electronics	10	<b>Autumn session</b>		
ENGR 4025	Final Year Project 1 (UG Engineering)	10	ELEC 3001	Communication Systems	
Select one alternate subject		10	ELEC 3006	Electrical Machines 1	
Select one elective		10	Select one alternate subject	10	
	<b>Credit Points</b>	<b>40</b>	Select one elective	10	
<b>Spring session</b>			<b>Industrial Experience</b>		
ELEC 4009	Instrumentation and Measurement	10	ENGR 3017	Industrial Experience (Engineering)	
ENGR 4026	Final Year Project 2 (UG Engineering)	10		<b>Credit Points</b>	
Select one alternate subject		10		<b>40</b>	
Select one elective		10	<b>Year 4</b>		
	<b>Credit Points</b>	<b>40</b>	<b>Spring session</b>		
	<b>Total Credit Points</b>	<b>320</b>	ELEC 4009	Instrumentation and Measurement	
<b>Mid-year intake</b>			ENGR 4025	Final Year Project 1 (UG Engineering)	
<b>Course</b>	<b>Title</b>	<b>Credit Points</b>	Select one alternate subject	10	
<b>Year 1</b>			Select one elective	10	
<b>Spring session</b>				<b>Credit Points</b>	
Select one of the following:		10		<b>40</b>	
MATH 1021	Mathematics for Engineers Preliminary			<b>Total Credit Points</b>	
MATH 1016	Mathematics for Engineers 1			<b>320</b>	
ENGR 1018	Fundamentals of Mechanics	10	<b>3728 Bachelor of Engineering (Honours)/</b>		
ELEC 1003	Electrical Fundamentals	10	<b>Bachelor of Business (3728)</b>		
ENGR 1024	Introduction to Engineering Practice	10	Qualification for this award requires the successful completion of 400 credit points, which include the subjects listed in the recommended sequence below.		
	<b>Credit Points</b>	<b>40</b>			
<b>Autumn session</b>			<b>Start-year intake</b>		
Select one of the following:		10	<b>Course</b>	<b>Title</b>	
MATH 1019	Mathematics for Engineers 2			<b>Credit Points</b>	
MATH 1016	Mathematics for Engineers 1		<b>Year 1</b>		
ENGR 1011	Engineering Physics	10	MATH 1016	Mathematics for Engineers 1	
ELEC 1006	Engineering Computing	10	ENGR 1011	Engineering Physics	
Select one elective		10	Business Core Subject 1	10	
• Elective unit must be Level 1 or higher			Business Core Subject 2	10	
	<b>Credit Points</b>	<b>40</b>		<b>Credit Points</b>	
<b>Year 2</b>			<b>Spring session</b>		
<b>Spring session</b>			MATH 1019	Mathematics for Engineers 2	
ELEC 2009	Microprocessor Systems	10	PROC 1008	Introduction to Materials Engineering	
ELEC 2004	Electronics	10	Business Core Subject 3	10	
ELEC 3011	Power and Machines	10	Business Core Subject 4	10	
ELEC 3006	Electrical Machines 1	10		<b>Credit Points</b>	
	<b>Credit Points</b>	<b>40</b>	<b>Year 2</b>		
<b>Autumn session</b>			ELEC 1006	Engineering Computing	
ELEC 2011	Signals and Systems	10	Business Professional Subject 1	10	
ELEC 1001	Digital Systems 1	10	Business Professional Subject 2	10	
ELEC 2006	Engineering Electromagnetics	10	Business Major Subject 1	10	
ELEC 2001	Circuit Theory	10		<b>Credit Points</b>	
	<b>Credit Points</b>	<b>40</b>	<b>Spring session</b>		
<b>Year 3</b>			ELEC 1003	Electrical Fundamentals	
<b>Spring session</b>				<b>10</b>	
ELEC 3009	Power Systems	10			
ELEC 3003	Digital Signal Processing	10			
ELEC 4008	Electrical Drives	10			
	<b>Credit Points</b>	<b>40</b>			

		10	Course	Title	Credit Points
ENGR 1018	Fundamentals of Mechanics	10		<b>Mid-year intake</b>	
Business Major Subject 2		10			
Business Major Subject 3		10			
	<b>Credit Points</b>	<b>40</b>			
<b>Year 3</b>			<b>Year 1</b>		
<b>Autumn session</b>			<b>Spring session</b>		
ELEC 2001	Circuit Theory	10	MATH 1016	Mathematics for Engineers 1	10
ELEC 2004	Electronics	10	PROC 1008	Introduction to Materials Engineering	10
ELEC 2011	Signals and Systems	10	Business Core Subject 1		10
ELEC 1001	Digital Systems 1	10	Business Core Subject 2		10
	<b>Credit Points</b>	<b>40</b>			
<b>Spring session</b>			<b>Credit Points</b>		
ELEC 2009	Microprocessor Systems	10	MATH 1019	Mathematics for Engineers 2	10
ELEC 2006	Engineering Electromagnetics	10	ENGR 1011	Engineering Physics	10
ELEC 3011	Power and Machines	10	Business Core Subject 3		10
ENGR 3006	Control Systems	10	Business Core Subject 4		10
	<b>Credit Points</b>	<b>40</b>			
<b>Year 4</b>			<b>Year 2</b>		
<b>Autumn session</b>			<b>Spring session</b>		
ELEC 3001	Communication Systems	10	ELEC 1003	Electrical Fundamentals	10
ELEC 3006	Electrical Machines 1	10	ENGR 1018	Fundamentals of Mechanics	10
Business Major Subject 4		10	Business Major Subject 1		10
Business Major Subject 5		10	Business Major Subject 2		10
	<b>Credit Points</b>	<b>40</b>			
<b>Spring session</b>			<b>Autumn session</b>		
ELEC 3009	Power Systems	10	ELEC 1006	Engineering Computing	10
ELEC 3003	Digital Signal Processing	10	ELEC 2004	Electronics	10
Business Major Subject 6		10	Business Major Subject 3		10
Business Major Subject 7		10	Business Professional Subject 1		10
	<b>Credit Points</b>	<b>40</b>			
<b>Industrial Experience</b>			<b>Year 3</b>		
ENGR 3017	Industrial Experience (Engineering)	0	<b>Spring session</b>		
	<b>Credit Points</b>	<b>40</b>	ELEC 2009	Microprocessor Systems	10
<b>Year 5</b>			ELEC 2006	Engineering Electromagnetics	10
<b>Autumn session</b>			ELEC 3011	Power and Machines	10
ELEC 4002	Power Electronics	10	ENGR 3006	Control Systems	10
ENGR 4025	Final Year Project 1 (UG Engineering)	10		<b>Credit Points</b>	<b>40</b>
Business Professional Subject 3		10	<b>Autumn session</b>		
Business Major Subject 8		10	ELEC 1001	Digital Systems 1	10
	<b>Credit Points</b>	<b>40</b>	ELEC 2001	Circuit Theory	10
<b>Spring session</b>			ELEC 2011	Signals and Systems	10
ELEC 4008	Electrical Drives	10	Business Professional Subject 2		10
ENGR 4026	Final Year Project 2 (UG Engineering)	10		<b>Credit Points</b>	<b>40</b>
ELEC 4009	Instrumentation and Measurement	10	<b>Year 4</b>		
Business Professional Subject 4		10	<b>Spring session</b>		
	<b>Credit Points</b>	<b>40</b>	ELEC 3009	Power Systems	10
	<b>Total Credit Points</b>	<b>400</b>	ELEC 3003	Digital Signal Processing	10
<b>Equivalent Subjects</b>			Business Major Subject 4		10
The subjects listed below count towards completion of this program for students who passed these subjects in Autumn 2022 or earlier.			Business Major Subject 5		10
ENGR 1008 - Engineering Materials, replaced by PROC 1008 - Introduction to Materials Engineering				<b>Credit Points</b>	<b>40</b>
			<b>Autumn session</b>		
			ELEC 3001	Communication Systems	10
			ELEC 3006	Electrical Machines 1	10
			Business Major Subject 6		10
			Business Major Subject 7		10
<b>Industrial Experience</b>					

ENGR 3017	Industrial Experience (Engineering)	0	MECH 4006 Advanced Engineering Thesis 2: Detailed Investigations, replaced by ENGR 4036 Advanced Engineering Thesis 2: Detailed Investigations
	<b>Credit Points</b>	<b>40</b>	
<b>Year 5</b>			
<b>Spring session</b>			
ELEC 4008	Electrical Drives	10	The subjects listed below count towards completion of this program for students who passed these subjects in Autumn 2022 or earlier.
ENGR 4025	Final Year Project 1 (UG Engineering)	10	ENGR 1008 - Engineering Materials, replaced by PROC 1008 - Introduction to Materials Engineering
ELEC 4009	Instrumentation and Measurement	10	
Business Professional Subject 3		10	
	<b>Credit Points</b>	<b>40</b>	
<b>Autumn session</b>			
ENGR 4026	Final Year Project 2 (UG Engineering)	10	The subjects listed below count towards completion of this program for students who passed these subjects in 2022 or earlier.
ELEC 4002	Power Electronics	10	ELEC 3008 Instrumentation and Measurement, replaced by ELEC 4009 Instrumentation and Measurement
Business Professional Subject 4		10	
Business Major Subject 8		10	
	<b>Credit Points</b>	<b>40</b>	
	<b>Total Credit Points</b>	<b>400</b>	ELEC 3005 Electrical Drives, replaced with ELEC 4008 Electrical Drives
			ELEC 2010 Power and Machines, replaced by ELEC 3011 Power and Machines

## Alternate Subjects

Subject	Title	Credit Points
ELEC 3004	Digital Systems 2	10
ELEC 4003	Power Quality	10
ELEC 4006	Sustainable Energy Systems	10
ELEC 4005	Smart Grids and Distributed Generation	10
ELEC 4004	Radio and Satellite Communication	10
ELEC 4007	Wireless Communications	10
HLTH 2003	Biomechanics	10
ENGR 3003	Biomedical Electronics	10
ENGR 3004	Biomedical Signals and Data Analysis	10
BIOS 1022	Introduction to Human Biology	10
ELEC 3002	Data Communications	10
ELEC 2007	Engineering Visualization	10

## Minors

Power Engineering, Minor (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/power-engineering-minor/>)  
 Telecommunications, Minor (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/telecommunications-minor/>)  
 Biomedical Engineering, Minor (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/biomedical-engineering-minor/>)

## Optional Elective

The following subject is an optional elective unit 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.

ENGR 3022 Special Technical Project

## 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

## Related Programs

Bachelor of Engineering (Honours)/Bachelor of Business (3728) ( <a href="https://hbook.westernsydney.edu.au/archives/2024-2025/programs/bachelor-engineering-honours-bachelor-business/">https://hbook.westernsydney.edu.au/archives/2024-2025/programs/bachelor-engineering-honours-bachelor-business/</a> )
Bachelor of Engineering (Honours) (3740) ( <a href="https://hbook.westernsydney.edu.au/archives/2024-2025/programs/bachelor-engineering-honours/">https://hbook.westernsydney.edu.au/archives/2024-2025/programs/bachelor-engineering-honours/</a> )
Bachelor of Engineering Advanced (Honours) (3771) ( <a href="https://hbook.westernsydney.edu.au/archives/2024-2025/programs/bachelor-engineering-advanced-honours/">https://hbook.westernsydney.edu.au/archives/2024-2025/programs/bachelor-engineering-advanced-honours/</a> )
Bachelor of Engineering Science (3691) ( <a href="https://hbook.westernsydney.edu.au/archives/2024-2025/programs/bachelor-engineering-science/">https://hbook.westernsydney.edu.au/archives/2024-2025/programs/bachelor-engineering-science/</a> )