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
Parramatta Campus - Victoria Road	Internal	Major Advice (edbe@westernsydney.edu
Parramatta City Campus-Macquarie Street	Internal	Major advice (edbe@westernsydney.edu
Penrith Campus	Internal	Major Advice (edbe@westernsydney.edu.au)
Sydney City Campus*	Internal	Major Advice (edbe@westernsydney.edu.au)
Surabaya Campus - Indonesia	Internal	Major Advice (https://hbook.westernsydney.edu.au/majors-minors/electrical-engineering-ug-testamur-major/ edbe@westernsydney.edu.au)

* 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 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.

Students who finish MATH 1021 Mathematics for Engineers Preliminary will then use this subject as an elective.

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 following:		10
MATH 1021	Mathematics for Engineers Preliminary	
MATH 1016	Mathematics for Engineers 1	
	Credit Points	**40**
Spring session		
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	
	Credit Points	**40**
Year 2		
Autumn session		
ENGR 3029	Specialisation Workshop 1	10
ELEC 2001	Circuit Theory	10
ELEC 2011	Signals and Systems	10
ELEC 1001	Digital Systems 1	10
	Credit Points	**40**
Spring session		
ENGR 3030	Specialisation Workshop 2	10
ELEC 2009	Microprocessor Systems	10
ELEC 3011	Power and Machines	10
ENGR 3006	Control Systems	10
	Credit Points	**40**

Year 3		
Autumn session		
ENGR 3013	Engineering Science Project 1	10
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
ELEC 2004	Electronics	10
	Credit Points	**40**
Spring session		
ENGR 3014	Engineering Science Project 2	10
ELEC 3003	Digital Signal Processing	10
Select two electives (Level 2 or higher)		20
Industrial Experience		
ENGR 2033	Industrial Experience (Engineering Technologist)	0
	Credit Points	**40**
	Total Credit Points	**240**

Mid-year intake

Course	Title	Credit Points
Year 1		
Spring session		
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 1021	Mathematics for Engineers Preliminary	
MATH 1016	Mathematics for Engineers 1	
	Credit Points	**40**
Autumn session		
ELEC 1006	Engineering Computing	10
ENGR 1011	Engineering Physics	10
ENGR 1024	Introduction to Engineering Practice	10
Select one of the following:		10
MATH 1019	Mathematics for Engineers 2	
MATH 1016	Mathematics for Engineers 1	
	Credit Points	**40**
Year 2		
Spring session		
ENGR 3029	Specialisation Workshop 1	10
ELEC 2009	Microprocessor Systems	10
ELEC 3011	Power and Machines	10
ENGR 3006	Control Systems	10
	Credit Points	**40**
Autumn session		
ENGR 3030	Specialisation Workshop 2	10
ELEC 2001	Circuit Theory	10
ELEC 2011	Signals and Systems	10
ELEC 1001	Digital Systems 1	10
	Credit Points	**40**
Year 3		
Spring session		
ENGR 3013	Engineering Science Project 1	10
ELEC 3003	Digital Signal Processing	10
Select two electives (Level 2 or higher)		20
	Credit Points	**40**
Autumn session		
ENGR 3014	Engineering Science Project 2	10
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
ELEC 2004	Electronics	10
Industrial Experience		
ENGR 2033	Industrial Experience (Engineering Technologist)	0
	Credit Points	**40**
	Total Credit Points	**240**

Surabaya Campus Indonesia

Course	Title	Credit Points
Year 1		
Semester 1		
MATH 1016	Mathematics for Engineers 1	10
ELEC 1003	Electrical Fundamentals	10
ENGR 1018	Fundamentals of Mechanics	10
ENGR 1011	Engineering Physics	10
CULT 1030	Pancasila	5
Semester 2		
MATH 1019	Mathematics for Engineers 2	10
ELEC 1006	Engineering Computing	10
ENGR 1024	Introduction to Engineering Practice	10
ELEC 1001	Digital Systems 1	10
CULT 1031	Civic Education	5
	Credit Points	**90**
Year 2		
Semester 3		
ENGR 3029	Specialisation Workshop 1	10
PROC 1008	Introduction to Materials Engineering	10
ELEC 2009	Microprocessor Systems	10
LANG 1036	Indonesian Language	5
Semester 4		
ENGR 3030	Specialisation Workshop 2	10
ELEC 2001	Circuit Theory	10
ELEC 2011	Signals and Systems	10
PHIL 1008	Religion	5
	Credit Points	**70**
Year 3		
Semester 5		
ENGR 3013	Engineering Science Project 1	10
ELEC 3011	Power and Machines	10
ELEC 3003	Digital Signal Processing	10
ENGR 3006	Control Systems	10
Semester 6		
ENGR 3014	Engineering Science Project 2	10
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
ELEC 2004	Electronics	10
Industrial Experience		
ENGR 2033	Industrial Experience (Engineering Technologist)	0
	Credit Points	**80**
	Total Credit Points	**240**

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
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
ELEC 1006	Engineering Computing	10
	Credit Points	**40**
Spring session		
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
	Credit Points	**40**
Year 2		
Autumn session		
ELEC 2001	Circuit Theory	10
ELEC 1001	Digital Systems 1	10
ELEC 2004	Electronics	10
ELEC 2011	Signals and Systems	10
	Credit Points	**40**
Spring session		
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.		
	Credit Points	**40**
Year 3		
Autumn session		
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
	Credit Points	**40**
Spring session		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
ELEC 4008	Electrical Drives	10
ELEC 3004	Digital Systems 2	10
Industrial Experience		
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	**40**
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
	Credit Points	**40**
Spring session		
ELEC 4009	Instrumentation and Measurement	10
ENGR 4044	Advanced Engineering Thesis 2: Detailed Investigations	20
Select one elective** or Minor subject		10
	Credit Points	**40**
	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
Year 1		
Spring session		
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
	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
ELEC 1006	Engineering Computing	10
	Credit Points	**40**
Year 2		
Spring session		
ELEC 2011	Signals and Systems	10
ELEC 2009	Microprocessor Systems	10
COMP 2008	Computer Organisation	10
ENGR 1024	Introduction to Engineering Practice	10
	Credit Points	**40**
Autumn session		
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.

	Credit Points	**40**
Year 3		
Spring session		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
ELEC 3011	Power and Machines	10
ELEC 3004	Digital Systems 2	10
	Credit Points	**40**
Autumn session		
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
Industrial Experience		
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	**40**
Year 4		
Spring session		
ENGR 4043	Advanced Engineering Thesis 1: Preliminary Investigations	20
ELEC 4009	Instrumentation and Measurement	10
ELEC 4008	Electrical Drives	10
	Credit Points	**40**
Autumn session		
ENGR 4044	Advanced Engineering Thesis 2: Detailed Investigations	20
ELEC 4002	Power Electronics	10
Select one elective** or minor subject		10
	Credit Points	**40**
	Total Credit Points	**320**

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
Year 1		
Autumn session		
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	
	Credit Points	**40**
Spring session		
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	
	Credit Points	**40**
Year 2		
Autumn session		
ELEC 2001	Circuit Theory	10
ELEC 2004	Electronics	10
ELEC 2011	Signals and Systems	10
ELEC 1001	Digital Systems 1	10
	Credit Points	**40**
Spring session		
ELEC 2009	Microprocessor Systems	10
ELEC 2006	Engineering Electromagnetics	10
ELEC 3011	Power and Machines	10
ENGR 3006	Control Systems	10
	Credit Points	**40**
Year 3		
Autumn session		
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
ELEC 2007	Engineering Visualization	10
Select one elective** or minor subject		10
	Credit Points	**40**

Spring session		
ELEC 3002	Data Communications	10
ELEC 3003	Digital Signal Processing	10
ELEC 3004	Digital Systems 2	10
Select one elective** or minor subject		10
Industrial Experience		
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	**40**
Year 4		
Autumn session		
ELEC 4002	Power Electronics	10
ENGR 4041	Final Year Project 1 (UG Engineering)	20
Select one elective** or minor subject		10
	Credit Points	**40**
Spring session		
ELEC 4009	Instrumentation and Measurement	10
ENGR 4042	Final Year Project 2 (UG Engineering)	20
Select one elective** or minor subject		10
	Credit Points	**40**
	Total Credit Points	**320**

Mid-year intake

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

Bachelor of Engineering (Honours)/ Bachelor of Business (3800)

Qualification for this award requires the successful completion of 440 credit points, which include the subjects listed in the recommended sequence 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 Subject 1		10
BBus Core Subject 2		10
	Credit Points	**40**
Spring session		
MATH 1019	Mathematics for Engineers 2	10
PROC 1008	Introduction to Materials Engineering	10
BBus Core Subject 3		10
BBus Core Subject 4		10
	Credit Points	**40**
Year 2		
Autumn session		
ELEC 1006	Engineering Computing	10
ENGR 1024	Introduction to Engineering Practice	10
ELEC 1001	Digital Systems 1	10

BBus Major Subject 1		10
	Credit Points	**40**
Spring session		
ELEC 1003	Electrical Fundamentals	10
ENGR 1018	Fundamentals of Mechanics	10
BBus Major Subject 2		10
BBus Major Subject 3		10
	Credit Points	**40**
Year 3		
Autumn session		
ELEC 2004	Electronics	10
ELEC 2001	Circuit Theory	10
ELEC 2011	Signals and Systems	10
BBus Professional Subject 1		10
	Credit Points	**40**
Spring session		
ELEC 2009	Microprocessor Systems	10
ELEC 3011	Power and Machines	10
ELEC 3002	Data Communications	10
BBus Major Subject 4		10
	Credit Points	**40**
Year 4		
Autumn session		
ELEC 3001	Communication Systems	10
ELEC 2007	Engineering Visualization	10
BBus Professional Subject 2		10
BBus Major Subject 5		10
	Credit Points	**40**
Spring session		
ELEC 2006	Engineering Electromagnetics	10
ENGR 3006	Control Systems	10
ELEC 3003	Digital Signal Processing	10
BBus Major Subject 6		10
Industrial Experience		
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	**40**
Year 5		
Autumn session		
ELEC 3006	Electrical Machines 1	10
BBus Professional Subject 3		10
BBus Major Subject 7		10
BBus Major Subject 8		10
	Credit Points	**40**
Spring session		
ELEC 4009	Instrumentation and Measurement	10
ENGR 4041	Final Year Project 1 (UG Engineering)	20
BBus Professional Subject 4		10
	Credit Points	**40**
Year 6		
Autumn session		
ELEC 4002	Power Electronics	10
ELEC 3004	Digital Systems 2	10
ENGR 4042	Final Year Project 2 (UG Engineering)	20
	Credit Points	**40**
	Total Credit Points	**440**

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 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.

Students who finish MATH 1021 Mathematics for Engineers Preliminary will then use this subject as an elective.

Start-year intake

Course	Title	Credit Points
Year 1		
Autumn session		
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
	Credit Points	**40**
Spring session		
Select one of the following:		10
MATH 1019	Mathematics for Engineers 2	
MATH 1016	Mathematics for Engineers 1	
ELEC 1003	Electrical Fundamentals	10
ENGR 1018	Fundamentals of Mechanics	10
Select one elective		10
	Credit Points	**40**
Year 2		
Autumn session		
ENGR 3029	Specialisation Workshop 1	10
ELEC 2001	Circuit Theory	10

ELEC 2011	Signals and Systems	10
ELEC 1001	Digital Systems 1	10
	Credit Points	**40**
Spring session		
ENGR 3030	Specialisation Workshop 2	10
ELEC 2009	Microprocessor Systems	10
ELEC 3011	Power and Machines	10
ENGR 3006	Control Systems	10
	Credit Points	**40**
Year 3		
Autumn session		
ENGR 3013	Engineering Science Project 1	10
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
ELEC 2004	Electronics	10
	Credit Points	**40**
Spring session		
ENGR 3014	Engineering Science Project 2	10
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
Select one elective (Level 2 or higher)		10
Industrial Experience		
ENGR 2033	Industrial Experience (Engineering Technologist)	0
	Credit Points	**40**
	Total Credit Points	**240**

Mid-year intake

Course	Title	Credit Points
Year 1		
Spring session		
Select one of the following:		10
MATH 1021	Mathematics for Engineers Preliminary	
MATH 1016	Mathematics for Engineers 1	
ELEC 1003	Electrical Fundamentals	10
ENGR 1018	Fundamentals of Mechanics	10
ENGR 1024	Introduction to Engineering Practice	10
	Credit Points	**40**
Autumn session		
Select one of the following:		10
MATH 1019	Mathematics for Engineers 2	
MATH 1016	Mathematics for Engineers 1	
ELEC 1006	Engineering Computing	10
ENGR 1011	Engineering Physics	10
Select one elective		10
• Elective unit must be Level 1 or higher		
	Credit Points	**40**
Year 2		
Spring session		
ENGR 3029	Specialisation Workshop 1	10
ELEC 2009	Microprocessor Systems	10
ELEC 3011	Power and Machines	10
ENGR 3006	Control Systems	10
	Credit Points	**40**
Autumn session		
ENGR 3030	Specialisation Workshop 2	10
ELEC 2001	Circuit Theory	10
ELEC 2011	Signals and Systems	10
ELEC 1001	Digital Systems 1	10
	Credit Points	**40**
Year 3		
Spring session		
ENGR 3013	Engineering Science Project 1	10
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
Select one elective (Level 2 or higher)		10
	Credit Points	**40**
Autumn session		
ENGR 3014	Engineering Science Project 2	10
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
ELEC 2004	Electronics	10
Industrial Experience		
ENGR 2033	Industrial Experience (Engineering Technologist)	0
	Credit Points	**40**
	Total Credit Points	**240**

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
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 2023	Advanced Engineering Physics 2	10
COMP 2008	Computer Organisation	10
	Credit Points	**40**
Year 2		
Autumn session		
ELEC 2013	Circuits and Signals	10
ELEC 1001	Digital Systems 1	10
ELEC 2004	Electronics	10
ELEC 2014	Mathematics for Electrical Engineers 1	10
	Credit Points	**40**

Spring session		
ELEC 2009	Microprocessor Systems	10
ELEC 3011	Power and Machines	10
ELEC 2015	Mathematics for Electrical Engineers 2	10
Select one elective		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.		
	Credit Points	**40**
Year 3		
Autumn session		
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
Select one alternate subject		10
Select one elective		10
	Credit Points	**40**
Spring session		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
ELEC 4008	Electrical Drives	10
Select one elective		10
Industrial Experience		
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	**40**
Year 4		
Autumn session		
ELEC 4002	Power Electronics	10
ENGR 4037	Advanced Engineering Thesis 1: Preliminary Investigations	10
Select one alternate subject		10
Select one elective		10
	Credit Points	**40**
Spring session		
ELEC 4009	Instrumentation and Measurement	10
ENGR 4036	Advanced Engineering Thesis 2: Detailed Investigations	10
Select two alternate subjects		20
	Credit Points	**40**
	Total Credit Points	**320**

Alternate Subjects

Subject	Title	Credit Points
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
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

Mid-year intake

Course	Title	Credit Points
Year 1		
Spring session		
MATH 1034	Mathematics for Engineers 1 (Advanced)	10
ELEC 1009	Electrical Circuit Fundamentals	10
ENGR 2023	Advanced Engineering Physics 2	10
ENGR 1024	Introduction to Engineering Practice	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		
ELEC 2014	Mathematics for Electrical Engineers 1	10
ELEC 2009	Microprocessor Systems	10
COMP 2008	Computer Organisation	10
Select one elective		10
	Credit Points	**40**
Autumn session		
ELEC 2015	Mathematics for Electrical Engineers 2	10
ELEC 2013	Circuits and Signals	10
ELEC 2004	Electronics	10
select one elective		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.		
	Credit Points	**40**
Year 3		
Spring session		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
ELEC 3011	Power and Machines	10
Select one alternate subject		10
	Credit Points	**40**
Autumn session		
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
Select one alternate subject		10
Select one elective		10
Industrial Experience		
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	**40**
Year 4		
Spring session		
ENGR 4037	Advanced Engineering Thesis 1: Preliminary Investigations	10
ELEC 4009	Instrumentation and Measurement	10
ELEC 4008	Electrical Drives	10
Select one alternate subject		10
	Credit Points	**40**

Autumn session		
ENGR 4036	Advanced Engineering Thesis 2: Detailed Investigations	10
ELEC 4002	Power Electronics	10
Select one elective		10
Select one alternate subject		10
	Credit Points	**40**
	Total Credit Points	**320**

Alternate Subjects

Subject	Title	Credit Points
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

Equivalent Subjects

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

3740 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.

*** 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.

Start-year intake

Course	Title	Credit Points
Year 1		
Autumn session		
Select one of the following:		10
MATH 1021	Mathematics for Engineers Preliminary	
MATH 1016	Mathematics for Engineers 1	
ENGR 1011	Engineering Physics	10
ENGR 1024	Introduction to Engineering Practice	10
ELEC 1006	Engineering Computing	10
	Credit Points	**40**
Spring session		
Select one of the following:		10
MATH 1019	Mathematics for Engineers 2	
MATH 1016	Mathematics for Engineers 1	
ENGR 1018	Fundamentals of Mechanics	10
ELEC 1003	Electrical Fundamentals	10
Select one elective (Level 1 or higher)		10
	Credit Points	**40**
Year 2		
Autumn session		
ELEC 2001	Circuit Theory	10
ELEC 2004	Electronics	10
ELEC 2011	Signals and Systems	10
ELEC 1001	Digital Systems 1	10
	Credit Points	**40**
Spring session		
ELEC 2009	Microprocessor Systems	10
ELEC 2006	Engineering Electromagnetics	10
ELEC 3011	Power and Machines	10
ENGR 3006	Control Systems	10
	Credit Points	**40**
Year 3		
Autumn session		
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
Select one alternate subject		10
Select one elective		10
	Credit Points	**40**
Spring session		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
ELEC 4008	Electrical Drives	10
Select one alternate subject		10
Industrial Experience		
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	**40**
Year 4		
Autumn session		
ELEC 4002	Power Electronics	10
ENGR 4025	Final Year Project 1 (UG Engineering)	10
Select one alternate subject		10
Select one elective		10
	Credit Points	**40**
Spring session		
ELEC 4009	Instrumentation and Measurement	10
ENGR 4026	Final Year Project 2 (UG Engineering)	10
Select one alternate subject		10

Select one elective		10
	Credit Points	**40**
	Total Credit Points	**320**

Mid-year intake

Course	Title	Credit Points
Year 1		
Spring session		
Select one of the following:		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
	Credit Points	**40**
Autumn session		
Select one of the following:		10
MATH 1019	Mathematics for Engineers 2	
MATH 1016	Mathematics for Engineers 1	
ENGR 1011	Engineering Physics	10
ELEC 1006	Engineering Computing	10
Select one elective		10
• Elective unit must be Level 1 or higher		
	Credit Points	**40**
Year 2		
Spring session		
ELEC 2009	Microprocessor Systems	10
ELEC 2004	Electronics	10
ELEC 3011	Power and Machines	10
ELEC 3006	Electrical Machines 1	10
	Credit Points	**40**
Autumn session		
ELEC 2011	Signals and Systems	10
ELEC 1001	Digital Systems 1	10
ELEC 2006	Engineering Electromagnetics	10
ELEC 2001	Circuit Theory	10
	Credit Points	**40**
Year 3		
Spring session		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
ELEC 4008	Electrical Drives	10
Select one alternate subject		10
	Credit Points	**40**
Autumn session		
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
Select one alternate subject		10
Select one elective		10
Industrial Experience		
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	**40**
Year 4		
Spring session		
ELEC 4009	Instrumentation and Measurement	10
ENGR 4025	Final Year Project 1 (UG Engineering)	10
Select one alternate subject		10
Select one elective		10
	Credit Points	**40**
Autumn session		
ELEC 4002	Power Electronics	10
ENGR 4026	Final Year Project 2 (UG Engineering)	10
Select one alternate subject		10
Select one elective		10
	Credit Points	**40**
	Total Credit Points	**320**

3728 Bachelor of Engineering (Honours)/ Bachelor of Business (3728)

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

Start-year intake

Course	Title	Credit Points
Year 1		
Autumn session		
MATH 1016	Mathematics for Engineers 1	10
ENGR 1011	Engineering Physics	10
Business Core Subject 1		10
Business Core Subject 2		10
	Credit Points	**40**
Spring session		
MATH 1019	Mathematics for Engineers 2	10
PROC 1008	Introduction to Materials Engineering	10
Business Core Subject 3		10
Business Core Subject 4		10
	Credit Points	**40**
Year 2		
Autumn session		
ELEC 1006	Engineering Computing	10
Business Professional Subject 1		10
Business Professional Subject 2		10
Business Major Subject 1		10
	Credit Points	**40**
Spring session		
ELEC 1003	Electrical Fundamentals	10
ENGR 1018	Fundamentals of Mechanics	10
Business Major Subject 2		10
Business Major Subject 3		10
	Credit Points	**40**
Year 3		
Autumn session		
ELEC 2001	Circuit Theory	10
ELEC 2004	Electronics	10
ELEC 2011	Signals and Systems	10

ELEC 1001	Digital Systems 1	10
	Credit Points	**40**
Spring session		
ELEC 2009	Microprocessor Systems	10
ELEC 2006	Engineering Electromagnetics	10
ELEC 3011	Power and Machines	10
ENGR 3006	Control Systems	10
	Credit Points	**40**
Year 4		
Autumn session		
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
Business Major Subject 4		10
Business Major Subject 5		10
	Credit Points	**40**
Spring session		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
Business Major Subject 6		10
Business Major Subject 7		10
Industrial Experience		
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	**40**
Year 5		
Autumn session		
ELEC 4002	Power Electronics	10
ENGR 4025	Final Year Project 1 (UG Engineering)	10
Business Professional Subject 3		10
Business Major Subject 8		10
	Credit Points	**40**
Spring session		
ELEC 4008	Electrical Drives	10
ENGR 4026	Final Year Project 2 (UG Engineering)	10
ELEC 4009	Instrumentation and Measurement	10
Business Professional 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
Business Core Subject 1		10
Business Core Subject 2		10
	Credit Points	**40**
Autumn session		
MATH 1019	Mathematics for Engineers 2	10
ENGR 1011	Engineering Physics	10
Business Core Subject 3		10
Business Core Subject 4		10
	Credit Points	**40**
Year 2		
Spring session		
ELEC 1003	Electrical Fundamentals	10
ENGR 1018	Fundamentals of Mechanics	10
Business Major Subject 1		10
Business Major Subject 2		10
	Credit Points	**40**
Autumn session		
ELEC 1006	Engineering Computing	10
ELEC 2004	Electronics	10
Business Major Subject 3		10
Business Professional Subject 1		10
	Credit Points	**40**
Year 3		
Spring session		
ELEC 2009	Microprocessor Systems	10
ELEC 2006	Engineering Electromagnetics	10
ELEC 3011	Power and Machines	10
ENGR 3006	Control Systems	10
	Credit Points	**40**
Autumn session		
ELEC 1001	Digital Systems 1	10
ELEC 2001	Circuit Theory	10
ELEC 2011	Signals and Systems	10
Business Professional Subject 2		10
	Credit Points	**40**
Year 4		
Spring session		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
Business Major Subject 4		10
Business Major Subject 5		10
	Credit Points	**40**
Autumn session		
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
Business Major Subject 6		10
Business Major Subject 7		10
Industrial Experience		
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	**40**
Year 5		
Spring session		
ELEC 4008	Electrical Drives	10
ENGR 4025	Final Year Project 1 (UG Engineering)	10
ELEC 4009	Instrumentation and Measurement	10
Business Professional Subject 3		10
	Credit Points	**40**
Autumn session		
ENGR 4026	Final Year Project 2 (UG Engineering)	10
ELEC 4002	Power Electronics	10
Business Professional Subject 4		10

Business Major Subject 8	10
Credit Points	**40**
Total Credit Points	**400**

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/majors-minors/power-engineering-minor/)
Telecommunications, Minor (https://hbook.westernsydney.edu.au/majors-minors/telecommunications-minor/)
Biomedical Engineering, Minor (https://hbook.westernsydney.edu.au/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

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

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

Replaced Subjects

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

ELEC 3008 Instrumentation and Measurement, replaced by ELEC 4009 Instrumentation and Measurement

ELEC 3005 Electrical Drives, replaced with ELEC 4008 Electrical Drives

ELEC 2010 Power and Machines, replaced by ELEC 3011 Power and Machines

Related Programs

Bachelor of Engineering (Honours)/Bachelor of Business (3728) (https://hbook.westernsydney.edu.au/programs/bachelor-engineering-honours-bachelor-business/)

Bachelor of Engineering (Honours) (3740) (https://hbook.westernsydney.edu.au/programs/bachelor-engineering-honours/)

Bachelor of Engineering Advanced (Honours) (3771) (https://hbook.westernsydney.edu.au/programs/bachelor-engineering-advanced-honours/)

Bachelor of Engineering Science (3691) (https://hbook.westernsydney.edu.au/programs/bachelor-engineering-science/)