1

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

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.

Mode

Internal

Internal

Internal

Internal

Location

Campus

Street

Victoria Road

Parramatta City Campus-Macquarie

Penrith Campus

Sydney City Campus

Parramatta Campus -

to complete MATH 1016 (https://hbook.westernsydney.edu.au/ archives/2021-2022/search/?P=MATH%201016) Mathematics for Engineers 1 during second semester and will be encouraged to complete MATH 1019 (https://hbook.westernsvdnev.edu.au/ archives/2021-2022/search/?P=MATH%201019) Mathematics for Engineers 2 during the Summer session.

Students who finish MATH 1021 (https://hbook.westernsydney.edu.au/ archives/2021-2022/search/?P=MATH%201021) Mathematics for Engineers Preliminary will then use this subject as an elective.

Start-year intake

subjects from all	otart year mean		
vill work in the fields nagnetics, power	Course	Title	Credit Points
d control in public	Year 1		
nd electrical systems.	Autumn session		
strial placement as a	Select one of the fol	lowing:	10
	MATH 1021	Mathematics for Engineers Preliminary	
	MATH 1016	Mathematics for Engineers 1	
Advice	ELEC 1006	Engineering Computing	10
Major Advice	ENGR 1011	Engineering Physics	10
(edbe@westernsydney.ed	ENGR 1024	Introduction to Engineering Practice	10
Major advice		Credit Points	40
(edbe@westernsydney.ed	Spring session		
	Select one of the fol	lowing:	10
Major Advice	MATH 1019	Mathematics for Engineers 2	
(edbe@westernsydney.ed	MATH 1016	Mathematics for Engineers 1	
Major Advice	ELEC 1003	Electrical Fundamentals	10
(edbe@westernsydney.ed	^J ENGR 1018	Fundamentals of Mechanics	10
	Select one elective ((Level 1 or higher)	10
		Credit Points	40
ng Science, Bachelor of	Year 2		
g Advanced (Honours) or of Business.	Autumn session		
of of Dusiness.	ENGR 3029	Specialisation Workshop 1	10
our program as noted	ELEC 2001	Circuit Theory	10
	ELEC 2011	Signals and Systems	10
ng Science	ELEC 1001	Digital Systems 1	10
•		Credit Points	40
Penrith and Sydney City	Spring session		
	ENGR 3030	Specialisation Workshop 2	10
sful completion of 240	ELEC 2009	Microprocessor Systems	10
in the recommended	ELEC 2010	Power and Machines	10
	ENGR 3006	Control Systems	10
neering Science are		Credit Points	40
westernsydney.edu.au/	Year 3		
1) Mathematics for	Autumn session		
ss test at the beginning	ENGR 3013	Engineering Science Project 1	10
	ELEC 3001	Communication Systems	10
inning of the	ELEC 3006	Electrical Machines 1	10
e used to	ELEC 2004	Electronics	10
TH 1021 (https://)22/search/?P=MATH		Credit Points	40
ary or be transferred	Spring session		
esternsydney.edu.au/	ENGR 3014	Engineering Science Project 2	10
5) Mathematics for	ELEC 3009	Power Systems	10
	ELEC 3003	Digital Signal Processing	10
	Select one elective ((Level 2 or higher)	10
)22/search/?P=MATH	Industrial Experience	e	

Recommended Sequence

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/2021-2022/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/2021-2022/search/?P=MATH %201021) Mathematics for Engineers Preliminary or be transferred by the School to MATH 1016 (https://hbook.westernsydney.edu.au/ archives/2021-2022/search/?P=MATH%201016) Mathematics for Engineers 1.

Students remaining in MATH 1021 (https://

hbook.westernsydney.edu.au/archives/2021-2022/search/?P=MATH %201021) Mathematics for Engineers Preliminary will be required

ENGR 2033	Industrial Experience (Engineering Technologist)	0
	Credit Points	40
	Total Credit Points	240
Mid-year intal	ke	
Course	Title	Credit
		Points
Year 1		
Spring session		
Select one of the	5	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		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 electiv	e	10
 Elective unit n 	nust be Level 1 or higher	
	Credit Points	40
Year 2	Creat Points	40
Spring session		
ENGR 3029	Specialisation Workshop 1	10
ELEC 2009	Microprocessor Systems	10
ELEC 2009	Power and Machines	10
ENGR 3006		10
ENGR 3000	Control Systems Credit Points	-
A	Credit Points	40
Autumn session	On a sin line tion. We also have 0	10
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 electiv	e (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 Experie	nce	

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 2015	Mathematics for Electrical Engineers 2	10
ELEC 2010	Power and Machines	10
Select one elective		10
	maintain a minimum GPA of 5.0 at the end	
	Credit Points, and again at the completion	
Engineering (Honou	will be automatically transferred to the B.	
Lingineering (Honou	Credit Points	40
Year 3	orear i onto	40
Autumn session		
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
Select one alternate		10
Select one elective		10
	Credit Points	40
Spring session		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10

ELEC 3005	Electrical Drives	10
Select one elective		10
Industrial Experience	e	
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	40
Year 4		
Autumn session		
ELEC 4002	Power Electronics	10
ENGR 4037	Advanced Engineering Thesis 1:	10
	Preliminary Investigations	
Select one alternate	subject	10
Select one elective		10
	Credit Points	40
Spring session		
ELEC 3008	Instrumentation and Measurement	10
ENGR 4036	Advanced Engineering Thesis 2: Detailed	10
	Investigations	
Select two alternate		20
	Credit Points	40
	Total Credit Points	320
Mid-year intake		
Course	Title	Credit
Course	The	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		
Students who fail to	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 (Honou	(3740) program. Credit Points	20
Voor 2	Great Points	30
Year 3		
Spring session ELEC 3009	Power Systems	10
LLL0 3009	i onei oystenis	10

	Total Credit Points	310
	Credit Points	40
Select one alternate	subject	10
Select one elective		10
ELEC 4002	Power Electronics	10
ENGR 4036	Advanced Engineering Thesis 2: Detailed Investigations	10
Autumn session	Credit Points	40
Select one alternate	,	10
ELEC 3005	Electrical Drives	10
ELEC 3008	Instrumentation and Measurement	10
ENGR 4037	Advanced Engineering Thesis 1: Preliminary Investigations	10
Year 4 Spring session		
No	Credit Points	40
ENGR 3017	Industrial Experience (Engineering)	0
Industrial Experienc		
Select one elective		10
Select one alternate	subject	10
ELEC 3006	Electrical Machines 1	10
ELEC 3001	Communication Systems	10
Autumn session		40
	Credit Points	40
Select one alternate		10
ELEC 2010	Power and Machines	10
ELEC 3003	Digital Signal Processing	10

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 o	ne of the fol	lowing:	10
MATH	1021	Mathematics for Engineers Preliminary	
MATH	1016	Mathematics for Engineers 1	
ENGR 10	011	Engineering Physics	10

ENGR 1024	Introduction to Engineering Practice	10
ELEC 1006	Engineering Computing	10
	Credit Points	40
Spring session		
Select one of the f	ollowing:	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	e (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 2010	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 alterna	te subject	10
Select one elective	2	10
	Credit Points	40
Spring session		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
ELEC 3005	Electrical Drives	10
Select one alterna	te subject	10
Industrial Experier	ice	
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 alterna	te subject	10
Select one elective	2	10
	Credit Points	40
Spring session		
ELEC 3008	Instrumentation and Measurement	10
ENGR 4026	Final Year Project 2 (UG Engineering)	10
Select one alterna		10
Select one elective		10
	Credit Points	40
	Total Credit Points	320
		520

Mid-year intake

Course	Title	Credit Points
Year 1		
Spring session		
Select one of the f	5	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		10
Select one of the f		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 m	nust be Level 1 or higher	
	Credit Points	40
Year 2		
Spring session		
ELEC 2009	Microprocessor Systems	10
ELEC 2004	Electronics	10
ELEC 2010	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 3005	Electrical Drives	10
Select one alterna	te subject	10
	Credit Points	40
Autumn session		
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
Select one alterna	te subject	10
Select one elective	•	10
Industrial Experier	nce	
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	40
Year 4		
Spring session		
ELEC 3008	Instrumentation and Measurement	10
ENGR 4025	Final Year Project 1 (UG Engineering)	10
Select one alterna		10

Select one electiv	/e	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

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 Sub	ject 1	10
Business Core Sub	ject 2	10
	Credit Points	40
Spring session		
MATH 1019	Mathematics for Engineers 2	10
PROC 1008	Introduction to Materials Engineering	10
Business Core Sub	ject 3	10
Business Core Sub	ject 4	10
	Credit Points	40
Year 2		
Autumn session		
ELEC 1006	Engineering Computing	10
Business Professional Subject 1		
Business Professio	onal Subject 2	10
Business Major Su	bject 1	10
	Credit Points	40
Spring session		
ELEC 1003	Electrical Fundamentals	10
ENGR 1018	Fundamentals of Mechanics	10
Business Major Su	bject 2	10
Business Major Su	bject 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 2010	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 S	Subject 4	10
Business Major S	Subject 5	10
	Credit Points	40
Spring session		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
Business Major S	Subject 6	10
Business Major S	Subject 7	10
Industrial Experie	ence	
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 Profess	sional Subject 3	10
Business Major S	Subject 8	10
	Credit Points	40
Spring session		
ELEC 3005	Electrical Drives	10
ENGR 4026	Final Year Project 2 (UG Engineering)	10
ELEC 3008	Instrumentation and Measurement	10
Business Profess	sional 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

	Total Credit Points	400	
	Credit Points	40	
Business Major Subj	ect 8	10	
Business Professional Subject 4			
ELEC 4002	Power Electronics	10 10	
ENGR 4026	Final Year Project 2 (UG Engineering)	10	
Autumn session		40	
Duameas F1018881011	Credit Points	40	
Business Profession		10	
ELEC 3008	Final Year Project 1 (UG Engineering)	10	
ELEC 3005 ENGR 4025	Electrical Drives	10 10	
Spring session	Flashring Drives	10	
Year 5			
	Credit Points	40	
ENGR 3017	Industrial Experience (Engineering)	0	
Industrial Experience	2		
Business Major Subj	ect 7	10	
Business Major Subj	ect 6	10	
ELEC 3006	Electrical Machines 1	10	
ELEC 3001	Communication Systems	10	
Autumn session			
,	Credit Points	40	
Business Major Subject 5			
Business Major Subj	ect 4	10	
ELEC 3003	Digital Signal Processing	10	
ELEC 3009	Power Systems	10	
Spring session			
Year 4			
	Credit Points	40	
Business Profession	• •	10	
ELEC 2011	Signals and Systems	10	
ELEC 2001	Circuit Theory	10	
ELEC 1001	Digital Systems 1	10	
Autumn session			
	Credit Points	40	
ENGR 3006	Control Systems	10	
ELEC 2010	Power and Machines	10	
ELEC 2006	Engineering Electromagnetics	10	
ELEC 2009	Microprocessor Systems	10	
Spring session			
Year 3	creat roms	40	
	Credit Points	40	
Business Profession		10	
Business Major Subj		10	
ELEC 2004	Electronics	10	
ELEC 1006	Engineering Computing	10	
Autumn session	Credit Points	40	
Business Major Subj		10	
Business Major Subject 1			
	Fundamentals of Mechanics	10 10	
ENGR 1018	Fundamentals of Mashanias	10	

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/2021-2022/majors-minors/power-engineering-minor/) Telecommunications, Minor (https://hbook.westernsydney.edu.au/ archives/2021-2022/majors-minors/telecommunications-minor/) Biomedical Engineering, Minor (https://hbook.westernsydney.edu.au/ archives/2021-2022/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

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/)