ELECTRICAL, TESTAMUR MAJOR (T035)

Western Sydney University Major Code: T035

Previous Codes: KT3125.1, KT3156.1, KT3161.1, KT7001.1, ST3093.1

Available to students in other Western Sydney University programs?
No

This 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.

Select the link for your program below for the locations of your major

Associate Degree in Engineering

Location

Campus	Mode	Advice
	Online	Miriam Krakovska (https://directory.westernsydney.edu.au/search/email/m.krakovska@westernsydney.edu.au)

- Bachelor of Engineering (Honours)
- Bachelor of Engineering Science

Location

Campus	Mode	Advice
Parramatta Campus - Victoria Road	Internal	beng@westernsydney.edu.au
Penrith Campus	Internal	beng@westernsydney.edu.au
Sydney City Campus*	Internal	Peter Lendrum (https://directory.westernsydney.edu.au/search/email/p.lendrum@city.westernsydney.edu.au)

* Curriculum delivered through an agreement with another party

- Diploma in Aerotropolis Industry 4.0 (Mechatronics Skills)/Bachelor of Engineering Science

Location

Campus	Attendance	Mode	Advice
Parramatta Campus - Victoria		Internal	beng@westernsydney.edu.au
Penrith Campus		Internal	beng@westernsydney.edu.au

- Diploma in Engineering/Bachelor of Engineering Studies

Location

Campus	Mode	Advice
Parramatta Campus - Victoria Road	Internal	beng@westernsydney.edu.au
Penrith Campus	Internal	beng@westernsydney.edu.au

- Graduate Certificate in Engineering
- Graduate Diploma in Engineering (exit only)
- Master of Engineering

Location

Campus	Mode	Advice
Parramatta Campus - Victoria Road	Internal	Engineering@westernsydney.edu.
Parramatta City Campus-Macquarie Street	Internal	Engineering@westernsydney.edu.

Recommended Sequence

Select the link for your program below to see details of the major

Associate Degree in Engineering

Major Structure

Subject	Title	Credit Points
Select three of the following:		30
ELEC 2002	Circuit Theory (WSTC AssocD)	
ELEC 1002	Digital Systems 1 (WSTC AssocD)	
ELEC 2005	Electronics (WSTC AssocD)	
MATH 1020	Mathematics for Engineers 2 (WSTC AssocD)	
ELEC 2012	Signals and Systems (WSTC AssocD)	
Please note: Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.		
Total Credit Points		**30**

Bachelor of Engineering (Honours)

Major Structure

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

Full-time start-year intake

* 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.

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.

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		
MATH 1019	Mathematics for Engineers 2	10
ENGR 1018	Fundamentals of Mechanics	10
PROC 1008	Introduction to Materials Engineering	10
Select one elective		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
Students may transfer to 3691 Bachelor of Engineering Science at the end of Year 2 of study.		
	Credit Points	**40**
Year 3		
Autumn session		
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
Major Alternate subject		10
Select one elective		10
*Elective subjects must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary subject)		
	Credit Points	**40**
Spring session		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
ELEC 3005	Electrical Drives	10
Major 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
Major Alternate Subject		10
Select one elective		10
*Elective subjects must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary subject)		
	Credit Points	**40**
Spring session		
ELEC 3008	Instrumentation and Measurement	10
From Spring 2022 ELEC 3008 is replaced with ELEC 4009 Instrumentation and Measurement		
ENGR 4026	Final Year Project 2 (UG Engineering)	10
Major Alternate Subject		10
Select one elective		10
*Elective subjects must be level 2 or higher (an exception applies for students completing Mathematics for Engineers Preliminary subject)		
	Credit Points	**40**
	Total Credit Points	**320**

Alternate Subjects

Alternate subjects may be used to complete one of the minors listed below.

Subject	Title	Credit Points
HLTH 2003	Biomechanics	10
ENGR 4038	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

Minors

Telecommunications, Minor (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/telecommunications-minor/)

Power Engineering, Minor (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/power-engineering-minor/)

Biomedical Engineering, Minor (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/biomedical-engineering-minor/)

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

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

Bachelor of Engineering Science

Full-time start-year intake

Course	Title	Credit Points
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
Industrial Experience		
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	**40**
Year 3		
Autumn session		
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
ENGR 3013	Engineering Science Project 1	10
Select one elective		
*Elective subjects must be level 2 or higher		
	Credit Points	**30**
Spring session		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
ENGR 3014	Engineering Science Project 2	10
Select one elective		10
*Elective subjects must be level 2 or higher		
	Credit Points	**40**
	Total Credit Points	**150**

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 major, however, permission is required to enrol in the subject.

ENGR 3022 Special Technical Project

- Diploma in Aerotropolis Industry 4.0 (Mechatronics Skills)/Bachelor of Engineering Science
- Diploma in Engineering/Bachelor of Engineering Studies

Course	Title	Credit Points
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
ELEC 2010 replaced by ELEC 3011, Spring 2022		
ENGR 3006	Control Systems	10
Industrial Experience		
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	**40**
Year 3		
Autumn session		
ELEC 3001	Communication Systems	10
ELEC 3006	Electrical Machines 1	10
ENGR 3013	Engineering Science Project 1	10
MATH 1019	Mathematics for Engineers 2	10
	Credit Points	**40**
Spring session		
ELEC 3009	Power Systems	10
ELEC 3003	Digital Signal Processing	10
ENGR 3014	Engineering Science Project 2	10
Select one elective		10
*Elective subjects must be level 2 or higher		
	Credit Points	**40**
	Total Credit Points	**160**

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 major, however, permission is required to enrol in the subject.

ENGR 3022 Special Technical Project

- Graduate Certificate in Engineering
- Graduate Diploma in Engineering (exit only)
- Master of Engineering

Postgraduate Major Structure

To complete some of the components within the subjects in this major, students may be required to travel to other Western Sydney University campuses.

Electrical Major Alternate Subjects

Specialist alternate subject offerings are subject to sufficient student demand and may not be offered annually.

Students enrolled in 3693 Master of Engineering choose seven major subjects from the list below

Students exiting with 3694 Graduate Diploma in Engineering (exit only) choose six major alternate subjects

Students enrolled in 3695 Graduate Certificate in Engineering choose four major alternate subjects

Subject	Title	Credit Points
ELEC 7001	Advanced Control Systems	10
ELEC 7003	Advanced Electrical Machines and Drives	10
ELEC 7004	Advanced Power Quality	10
ELEC 7005	Advanced Signal Processing	10
ELEC 7006	Advanced Smart Grids and Distributed Generation	10
ELEC 7008	Instrumentation and Measurement (PG)	10
ELEC 7009	Personal Communication Systems	10
ELEC 7010	Power System Planning and Economics	10

Related Programs

Associate Degree in Engineering (7022) (https://hbook.westernsydney.edu.au/archives/2024-2025/programs/associate-degree-engineering/)

Bachelor of Engineering (Honours) (3740) (https://hbook.westernsydney.edu.au/archives/2024-2025/programs/bachelor-engineering-honours/)

Diploma in Aerotropolis Industry 4.0 (Mechatronics Skills)/Bachelor of Engineering Science (6046) (https://hbook.westernsydney.edu.au/archives/2024-2025/programs/diploma-aerotropolis-industry-40-mechatronics-skillsbachelor-engineering-science/)

Diploma in Engineering/Bachelor of Engineering Studies (6033) (https://hbook.westernsydney.edu.au/archives/2024-2025/programs/diploma-engineering-bachelor-engineering-studies/)

Graduate Certificate in Engineering (3695) (https://hbook.westernsydney.edu.au/archives/2024-2025/programs/graduate-certificate-engineering/)

Graduate Diploma in Engineering (exit only) (3694) (https://hbook.westernsydney.edu.au/archives/2024-2025/programs/graduate-diploma-engineering-exit-only/)

Master of Engineering (3693) (https://hbook.westernsydney.edu.au/archives/2024-2025/programs/master-engineering/)