



**3691 Bachelor of Engineering Science
New Student Advising Guide
Sydney City Campus Trimester 3 2024**

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3691 Bachelor of Engineering Science

2024 New Student Advising Guide

This Advising Guide has been specifically created for new students enrolled in a Bachelor of Engineering Science in Trimester 3 2024 at Western Sydney University, Sydney City Campus to help them successfully plan out their subjects for 2024.

This guide provides students with details of the Subjects they will need to study to complete their Program. Each key program (Civil, Mechanical, and Electrical) is divided into 3 sections;

1. **Program structure:** subjects divided into categories (e.g. Core, Major and Elective).
2. **Subjects per Trimester 2024:** subjects available each trimester.
3. **Subject selection:** recommended sequence for Trimester 3, 2024 and Trimester 1, 2025.

Study load options

Fulltime study:	Students should select 3 subjects per Trimester (International students are required to study a full-time load)
Part-time study:	Students should select 1-2 subjects per Trimester
Accelerated study:	Students should select 4 subjects per Trimester*

Subject prerequisites and assumed knowledge

Students should check the [online handbook](#) entry for more Subject information including prerequisites, subject levels and assumed knowledge.

Transfer Credit

Students who have received Transfer Credit for previous study should make sure they take into account which subjects they have been granted credit for, before selecting their subjects to study at Sydney City Campus. Students with Advanced Standing (or Transfer Credit) who have questions about which subjects to select can also contact Engineering Program Convenors, email engineering@city.westernsydney.edu.au for personalised course advice.

For more assistance you can also make an appointment at Sydney City Campus reception to meet with a Student Adviser or via their online booking system <https://calendly.com/student-services-teams> Alternatively, you can contact them at studentservices@city.westernsydney.edu.au

For electives, students can use the [online handbook](#) to search for other undergraduate subjects available at the Sydney City Campus for each trimester.



Program Structure

Qualification for this award requires the successful completion of 240 credit points (a subject is 10cp) made up of the following Core, Major, Elective and Alternate subjects

Core Subjects (80 credit points)

- MATH 1016 Mathematics for Engineers 1 (see note below)
- ELEC 1006 Engineering Computing
- ENGR 1011 Engineering Physics
- ENGR 1024 Introduction to Engineering Practice
- ENGR 1018 Fundamentals of Mechanics
- PROC 1008 Introduction to Materials Engineering
- ELEC 1003 Electrical Fundamentals
- MATH 1019 Mathematics for Engineers 2

Note: 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 Trimester 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. For students that complete MATH 1021 Mathematics for Engineers Preliminary, this subject will replace an elective subject in the degree.

The following pages show the course structures for each of the Key Programs offered at Sydney City Campus.



Civil Engineering Major

Civil Engineering Major subjects (140 credit points)

- CIVL 1001 Surveying for Engineers
- MECH 2003 Mechanics of Materials
- CIVL 2003 Fluid Mechanics
- CIVL 2007 Introduction to Structural Engineering
- ENGR 2016 Pavement Materials and Design
- CIVL 2012 Soil Mechanics
- ENGR3029 Specialisation Workshop 1
- ENGR3030 Specialisation Workshop 2
- CIVL 3011 Hydraulics
- CIVL 3014 Structural Analysis
- CIVL 3002 Concrete Structures (UG)
- CIVL 3012 Steel Structures
- ENGR3013 Engineering Science Project 1
- ENGR3014 Engineering Science Project 2
- ENGR2033 Industrial Experience (Engineering Technologist) (zero (0) credit point Subject)*

Elective subjects (20 credit points)

Two (2) Elective Subjects (Level 2 or higher)

Note: (If MATH 1021 Mathematics for Engineers Preliminary is completed, this Subject takes the place of an elective Subject) (More information can be found on the University Handbook)

* Students are advised to enrol in Industrial Experience (ENGR2033) subject every session (from their third session onwards) until they complete the internship.



Subjects on offer for Civil students in Trimester 3, 2024

Subjects T3 2024	
MATH 1016	Mathematics for Engineers 1
MATH 1019	Mathematics for Engineers 2
MATH 1021	Mathematics for Engineers Preliminary
PROC 1008	Introduction to Materials Engineering
ENGR 1018	Fundamentals of Mechanics
ELEC 1003	Electrical Fundamentals
MECH 2003	Mechanics of Materials
ENGR 2016	Pavement Materials and Design
CIVL 2002	Environmental Engineering
CIVL 3007	Engineering Geomechanics
CIVL 3011	Hydraulics
CIVL 3012	Steel Structures
ENGR 3020	Numerical Methods in Engineering
CIVL 4001	Applied Mechanics
CIVL 4009	Timber Structures (UG)
ENGR 4011	Sustainability and Risk Engineering
ENGR 3013	Engineering Science Project 1
ENGR 2033	Industrial Experience (Engineering Technologist)

The delivery mode is on campus face-to-face unless otherwise stated.

Note: Subjects ENGR3029 Specialisation Workshop 1 and ENGR3030 Specialisation Workshop 2 will be running at the main campus only during Autumn and Spring Semester, respectively. Students are advised to refer to the course handbook to determine when they can enrol. If students have any other questions about the enrolment of these subjects, they are advised to contact their Program Convenor.



Recommended subjects for New Civil Engineering students in Trimester 3, 2024 and Trimester 1, 2025

Trimester 3, 2024

MATH 1021 OR MATH 1016	Mathematics for Engineers Preliminary OR Mathematics for Engineers 1
PROC 1008	Introduction to Materials Engineering
ENGR 1018	Fundamentals of Mechanics

If a student wants to accelerate the program, they may enrol in the 4th subject as below:

ELEC 1003	Electrical Fundamentals
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Trimester 1, 2025

MATH 1016 OR MATH 1019	Mathematics for Engineers 1 OR Mathematics for Engineers 2
ENGR 1024	Introduction to Engineering Practice
ENGR 1011	Engineering Physics

If a student wants to accelerate the program, they may enrol in the 4th subject as below:

ELEC 1006	Engineering Computing
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Mechanical Engineering Major

Mechanical Engineering Major subjects (140 credit points)

MECH 2001 Kinematics and Kinetics of Machines
MECH 2003 Mechanics of Materials
CIVL 2003 Fluid Mechanics
ENGR 3029 Specialisation Workshop 1
MECH 3004 Dynamics of Mechanical Systems
ENGR 2001 Automated Manufacturing
MECH 3008 Thermodynamics and Heat Transfer
ENGR 3030 Specialisation Workshop 2
MECH 3005 Mechanical Design
MECH 3001 Advanced Dynamics
ENGR 2035 Modern Digital Design and Development
MECH 3007 Thermal and Fluid Engineering
ENGR 3013 Engineering Science Project 1
ENGR 3014 Engineering Science Project 2
ENGR 2033 Industrial Experience (Engineering Technologist)

Elective subjects (20 credit points)

Two (2) Elective Subjects (Level 2 or higher)

Note: (If MATH 1021 Mathematics for Engineers Preliminary is completed, this Subject takes the place of an elective Subject) (More information can be found on the University Handbook)

* Students are advised to enrol in Industrial Experience (ENGR2033) subject every session (from their session 3 onwards) until they complete the internship.



Subjects on offer for Mechanical students in Trimester 3, 2024

Subjects T3 2024	
MATH1016	Mathematics for Engineers 1
MATH1019	Mathematics for Engineers 2
MATH1021	Mathematics for Engineers Preliminary
PROC1008	Introduction to Materials Engineering
ENGR1018	Fundamentals of Mechanics
ELEC 1003	Electrical Fundamentals
MECH2003	Mechanics of Materials
ENGR2001	Automated Manufacturing
ENGR3004	Biomedical Signals and Data Analysis
ENGR3020	Numerical Methods in Engineering
MECH3002	Advanced Mechanics of Materials
MECH3004	Dynamics of Mechanical Systems
MECH3006	Mechatronic Design
MECH3007	Thermal and Fluid Engineering
MECH3008	Thermodynamics and Heat Transfer
MECH4002	Computer Aided Engineering
MECH4003	Mobile Robotics
ENGR3013	Engineering Science Project 1
ENGR2033	Industrial Experience (Engineering Technologist)

The delivery mode is on campus face-to-face unless otherwise stated.

Note: Subjects ENGR3029 Specialisation Workshop 1 and ENGR3030 Specialisation Workshop 2 will be running at the main campus only during Autumn and Spring Semester. Students are advised to refer to the course handbook to determine when they can enrol. If students have any other questions about the enrolment of these subjects, they are advised to contact their Program Convenor.



Recommended subjects for New Mechanical Engineering students in Trimester 3, 2024 and Trimester 1, 2025

Trimester 3, 2024

MATH 1021 OR MATH 1016	Mathematics for Engineers Preliminary OR Mathematics for Engineers 1
PROC 1008	Introduction to Materials Engineering
ENGR 1018	Fundamentals of Mechanics

If a student wants to accelerate the program, they may enrol in the 4th subject as below:

ELEC 1003	Electrical Fundamentals
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Trimester 1, 2025

MATH 1016 OR MATH 1019	Mathematics for Engineers 1 OR Mathematics for Engineers 2
ENGR 1024	Introduction to Engineering Practice
ENGR 1011	Engineering Physics

If a student wants to accelerate the program, they may enrol in the 4th subject as below:

ELEC 1006	Engineering Computing
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Electrical Engineering Major

Electrical Engineering Major subjects (140 credit points)

ELEC 2001 Circuit Theory
ELEC 2011 Signals and Systems
ELEC 1001 Digital Systems 1
ENGR 3029 Specialisation Workshop 1
ELEC 2009 Microprocessor Systems
ELEC 3011 Power and Machines
ENGR 3006 Control Systems
ENGR 3030 Specialisation Workshop 2
ELEC 3001 Communication Systems
ELEC 3006 Electrical Machines 1
ELEC 2004 Electronics
ELEC 3003 Digital Signal Processing
ENGR 3013 Engineering Science Project 1
ENGR 3014 Engineering Science Project 2
ENGR 2033 Industrial Experience (Engineering Technologist)

Elective subjects (20 credit points)

Two (2) Elective Subjects (Level 2 or higher)

Note: (If MATH 1021 Mathematics for Engineers Preliminary is completed, this Subject takes the place of an elective Subject) (More information can be found on the University Handbook)

* Students are advised to enrol in Industrial Experience (ENGR2033) subject every session (from their session 3 onwards) until they complete the internship.



Subjects on offer for Electrical students in Trimester 3, 2024

Subjects T3 2024	
MATH1016	Mathematics for Engineers 1
MATH1019	Mathematics for Engineers 2
MATH1021	Mathematics for Engineers Preliminary
ELEC1003	Electrical Fundamentals
PROC1008	Introduction to Materials Engineering
ENGR1018	Fundamentals of Mechanics
ELEC2006	Engineering Electromagnetics
ELEC2009	Microprocessor Systems
ELEC2010	Power and Machines
ELEC3003	Digital Signal Processing
ELEC3004	Digital Systems 2
ELEC3005	Electrical Drives
ELEC4009	Instrumentation and Measurement
ELEC3009	Power Systems
ENGR3004	Biomedical Signals and Data Analysis
ENGR3006	Control Systems
ENGR3013	Engineering Science Project 1
ENGR2033	Industrial Experience (Engineering Technologist)

The delivery mode is on campus face-to-face unless otherwise stated.

Note: Subjects ENGR3029 Specialisation Workshop 1 and ENGR3030 Specialisation Workshop 2 will be running at the main campus only during Autumn and Spring Semester. Students are advised to refer to the course handbook to determine when they can enrol. If students have any other questions about the enrolment of these subjects, they are advised to contact their Program Convenor.



Recommended subjects for New Electrical Engineering students in Trimester 3, 2024 and Trimester 1, 2025

Trimester 3, 2024

MATH 1021 OR MATH 1016	Mathematics for Engineers Preliminary OR Mathematics for Engineers 1
ELEC 1003	Electrical Fundamentals
ENGR 1018	Fundamentals of Mechanics

If a student wants to accelerate the program, they may enrol in the 4th subject as below:

PROC 1008	Introduction to Materials Engineering
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Trimester 1, 2025

MATH 1016 OR MATH 1019	Mathematics for Engineers 1 OR Mathematics for Engineers 2
ENGR 1011	Engineering Physics
ELEC 1001	Digital Systems 1

If a student wants to accelerate the program, they may enrol in the 4th subject as below:

ENGR 1024	Introduction to Engineering Practice
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