WESTERN SYDNEY
UNIVERSITY

Sydney City Campus

3740 Bachelor of Engineering (honours)
New Student Advising Guide
Sydney City Campus Trimester 3 2024

Table of Contents

WESTERN SYDNEY UNIVERSITY

Sydney City Campus

3740 Bachelor of Engineering (honours)

2024 New Student (year 2024 commencement) Advising Guide

This Advising Guide has been specifically created for new students enrolled in a Bachelor of Engineering (Honours) 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 320 credit points (a subject is 10cp) made up of the following Core, Major, Elective and Minor 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 Program.

The following pages show the Program structures for each of the Majors offered at Sydney City Campus.

WESTERN SYDNEY UNIVERSITY

Sydney City Campus

Civil Engineering Major

Civil Engineering Major subjects (200 credit points)

CIVL 1001 Surveying for Engineers

MECH 2003 Mechanics of Materials

CIVL 2002 Environmental Engineering

CIVL 2003 Fluid Mechanics

CIVL 2007 Introduction to Structural Engineering

CIVL 2012 Soil Mechanics

ENGR 2016 Pavement Materials and Design

CIVL 3011 Hydraulics

CIVL 3014 Structural Analysis

CIVL 4017 Surface Water Hydrology

CIVL 3002 Concrete Structures (UG)

CIVL 3012 Steel Structures

CIVL 3007 Engineering Geomechanics

ENGR 3020 Numerical Methods in Engineering

ENGR 4011 Sustainability and Risk Engineering

ENGR 4041 Final Year Project 1 (UG Engineering)

ENGR 4042 Final Year Project 2 (UG Engineering)

BLDG 4008 Digital Construction

ENGR 3017 Industrial Experience (Engineering) (zero (0) credit point Subject)*

Elective/ Minor subjects (40 credit points)

Four (4) elective Subjects or Four (4) Minor subjects

Note: 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)

* Students are advised to enrol in Industrial Experience (ENGR3017) subject every session (from their third session onwards) until they complete the internship.

WESTERN SYDNEY UNIVERSITY

Sydney City Campus

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 3017	Industrial Experience
ENGR 3020	Numerical Methods in Engineering
CIVL 4001	Applied Mechanics
CIVL 4009	Timber Structures (UG)
ENGR 4011	Sustainability and Risk Engineering

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

WESTERN SYDNEY UNIVERSITY

Sydney City Campus

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

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

WESTERN SYDNEY UNIVERSITY

Sydney City Campus

Mechanical Engineering Major

Mechanical Engineering Major subjects (200 credit points)

MECH 2001 Kinematics and Kinetics of Machines

MECH 2003 Mechanics of Materials

CIVL 2003 Fluid Mechanics

ENGR 2035 Modern Digital Design and Development

MECH 3004 Dynamics of Mechanical Systems

ENGR 2001 Automated Manufacturing

MECH 3008 Thermodynamics and Heat Transfer

MECH 3002 Advanced Mechanics of Materials

MECH 3005 Mechanical Design

MECH 3001 Advanced Dynamics

PROC 2003 Materials Selection and Design

MECH 3007 Thermal and Fluid Engineering

MECH 3006 Mechatronic Design

MECH 4001 Computational Fluid Dynamics

MECH 4004 Robotics

MECH 4002 Computer Aided Engineering

ENGR 4041 Final Year Project 1 (UG Engineering)

ENGR 4042 Final Year Project 2 (UG Engineering)

ENGR 3017 Industrial Experience (Engineering) (zero (0) credit point Subject)*

Elective/ Minor subjects (40 credit points)

Four (4) elective Subjects or Four (4) Minor subjects

Note: 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)

* Students are advised to enrol in Industrial Experience (ENGR3017) subject every session (from their session 3 onwards) until they complete the internship.

WESTERN SYDNEY UNIVERSITY

Sydney City Campus

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
ENGR3017	Industrial Experience

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

WESTERN SYDNEY UNIVERSITY

Sydney City Campus

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

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

Electrical Engineering Major

Electrical Engineering Major subjects (200 credit points)

ELEC 2001 Circuit Theory
ELEC 2004 Electronics
ELEC 2011 Signals and Systems
ELEC 1001 Digital Systems 1
ELEC 2009 Microprocessor Systems
ELEC 2006 Engineering Electromagnetics
ELEC 3011 Power and Machines
ENGR 3006 Control Systems
ELEC 3001 Communication Systems
ELEC 3006 Electrical Machines 1
ELEC 2007 Engineering Visualisation
ELEC 3001 Data Communications
ELEC 3003 Digital Signal Processing
ELEC 3004 Digital Systems 2
ELEC 4002 Power Electronics
ELEC 4009 Instrumentation and Measurement
ENGR 4041 Final Year Project 1 (UG Engineering)
ENGR 4042 Final Year Project 2 (UG Engineering)
ENGR 3017 Industrial Experience (Engineering) (zero credit point Subject)*

Elective/ Minor subjects (40 credit points)

Four (4) elective Subjects or Four (4) Minor subjects

Note: 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)

* Students are advised to enrol in Industrial Experience (ENGR3017) subject every session (from their session 3 onwards) until they complete the internship.

WESTERN SYDNEY UNIVERSITY

Sydney City Campus

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
ENGR1018	Fundamentals of Mechanics
PROC1008	Introduction to Materials Engineering
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
ENGR3017	Industrial Experience

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

WESTERN SYDNEY UNIVERSITY

Sydney City Campus

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

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