DIPLOMA OF ENGINEERING

Program Information

The Diploma of Engineering curriculum is designed to equip you with the essential skills, knowledge, and confidence to excel in your university studies and future engineering career. The program focuses on core modules equivalent to the first-year content of an engineering degree at university. These modules provide a strong academic foundation, ensuring a seamless transition into the second year of your chosen bachelor's program. With small class sizes and personalised support, you'll have the opportunity to thrive in a dynamic learning environment tailored to your success.

The free Language Development Module (LDM100) enables international students to continue to develop their English language skills, while engaging with their studies. While compulsory for some students, LDM100 does not count towards the study load or GPA. Eligibility criteria and exemptions of this module are provided during enrolment. If this module is required, a non-graded pass in LDM100 is required for graduation.

Stage 2		Study Load	Units
ENG1002	Programming (Matlab, C and Excel)	25%	4.5
ELEC1101	Electronic Systems	25%	4.5
ENG3003	Engineering Communication EAL	25%	4.5
CEME1002	Introduction to Infrastructure	25%	4.5
MATH1011	Mathematics 1A (Pre-requisite for MATH1012)	25%	4.5
MATH1012	Mathematics 1B	25%	4.5
CENV1010	Engineering Mechanics – Statics (Pre-requisite for MECH1007 / CEME1002)	25%	4.5
MECH1007	Engineering Mechanics - Dynamics	25%	4.5

Diploma of Engineering Pathway Programs

Please refer to the following website for information on Pathways:
https://www.eynesbury.edu.au/adelaide-university/diploma-programs/engineering/

All classes (unless otherwise specified) are held at City East Campus (CE)

Program Outline

Tertiary Preparation

Language Development Module 1

This module is designed to provide students with opportunities to review, develop and practice the English language systems and skills required to successfully participate in an undergraduate degree program.

Stage 2

Introduction to Infrastructure

This module explores the central role of infrastructure in society, both locally and globally. It examines the different elements of infrastructure and incorporates links with industry and real life experience from technical, social, environmental, economic and sustainability perspectives. Students work in small groups to create civil engineering analyses, designs and drawings. The group work will develop the key engineering attributes of working together in a team and professional communication skills.

Pre-requisite: Engineering Mechanics – Statics

Electronic Systems

This module develops a basic understanding of the fundamentals and principles of analog and digital circuits and electronic devices. This understanding is a critical step towards being able to design new electronic circuits or use them appropriately as part of a larger engineering system. The module is designed to be a broad introduction to electronic systems for students from diverse engineering disciplines.

Engineering Communication EAL

This module provides development of the critical thinking skills necessary to analyse and evaluate academic texts, and the language skills to prepare and present findings. Class work and assignments are designed to develop students? communication skills appropriate to the study of engineering and do so through the use of materials that focus on issues related to engineering professional practice. Tasks relate to research and the preparation of evidence-based papers appropriate to academic and professional settings, as well as informal academic group discussion and formal seminar presentation.

Mathematics 1A

Topics include: Calculus: functions of one variable, differentiation, the definite integral, and techniques of integration. Algebra: Linear equations, matrices, the real vector space determinants, optimisation, applications of linear algebra.

Programming (Matlab, C and Excel)

All modern engineering projects use programming for data analysis and problem solving. This module introduces the fundamental concepts of procedural programming using the MATLAB programming environment. This module also includes C, which introduces low-level programming concepts, and Excel, which consists of data analysis and algorithm development using industry-standard spreadsheet approaches.

Engineering Mechanics – Statics

This module familiarises students with the principles of static equilibrium by applying Newton's laws of motion to solve engineering problems. Emphasis is placed on drawing free body diagrams and self checking strategies. Topics include introduction to forces; 2D equilibrium of particles and rigid bodies; centre of gravity and centroids; distributed loading and hydrostatics; friction; analysis of truss structures; and shear force and bending moment diagrams.

Engineering Mechanics – Dynamics

This module teaches students how to apply Newtonian physics to analyse relatively simple physical mechanisms with some emphasis on commonly encountered engineering applications. It follows on from the Engineering Mechanics – Statics module, but considers systems that are not in equilibrium i.e. with velocity and acceleration. Some of the topics covered are pure kinematics (a mathematical description of motion only), while others are kinetic.

Pre-requisite: Engineering Mechanics – Statics

Mathematics 1B

Topics include: Calculus: Differential equations, sequences and series, power series, calculus in two variables. Algebra: Subspaces, rank theorem, linear transformations, orthogonality, eigenvalues and eigenvectors, singular value decomposition, applications of linear algebra.

Pre-requisite: Mathematics 1A

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