PROGRAM PLAN

BACHELOR OF COMPUTER SYSTEMS ENGINEERING (HONOURS) / BACHELOR OF MATHEMATICS

PROGRAM OPTION:
Commencing in Semester 1

START DATE:
2021

LOCATION:
Callaghan

This Program Plan is an enrolment guide to ensure you are on track to graduate. If at any time you wish to vary from this program plan seek advice from your Academic Program Advisor to ensure you remain on track.

PROGRAM HANDBOOK

COURSE HANDBOOK

YEAR 1	SEMESTER 1	**ELEC1310** Introduction to Electrical Engineering — CORE	**ELEC1710** Digital and Computer Electronics 1 — CORE	**MATH1110** Mathematics for Engineering, Science and Technology 1 — CORE	**PHYS1220** Advanced Physics II — CORE
	SEMESTER 2	**MATH2310** Calculus of Science and Engineering — CORE	**SENG2250** System and Network Security — CORE	**ELEC2430** Circuits and Signals — CORE	**ENGG2500** Sustainable Engineering Practice — CORE
YEAR 2	SEMESTER 1	**ENGG1500** Introduction to Professional Engineering — CORE	**ENGG1003** Introduction to Procedural Programming — CORE	**SENG1110** Object Oriented Programming — CORE	**MATH1120** Mathematics for Engineering, Science and Technology 2 — CORE
	SEMESTER 2	**MATH1800** Mathematical Modelling — CORE	**ELEC3540** Analog and Digital Communications — CORE	**ELEC3240** Analog Electronics — CORE	**STAT2020** Predictive Analytics — CORE
YEAR 3	SEMESTER 1	**STAT2110** Engineering Statistics — CORE	**ELEC2720** Introduction to Embedded Computing — CORE	**ELEC2320** Electrical and Electronic Circuits — CORE	**SENG1120** Data Structures — CORE
	SEMESTER 2	**MATH2350** Linearity and Continuity 2 — CORE	**ELEC3500** Telecommunication Networks — CORE	**DIRECTED** Mathematics 2000 level — DIRECTED	**DIRECTED** Mathematics 2000 level — DIRECTED	**ELECTIVE** — ELECTIVE
YEAR 4	SEMESTER 1	**ENGG3500** Managing Engineering Projects — CORE	**ELEC3730** Digital and Computer Electronics 2 — CORE	**COMP3500** Security Attacks: Analysis and Mitigation Strategies — CORE	**MATH2340** Linearity and Continuity *1* — CORE
	SEMESTER 2	**ELEC4840B** Final Year Engineering Project Part B *This course must be taken following ELEC4840A (20 units)* — CORE		**ENGG4500** Engineering Complexity — CORE	**ELEC4720** Programmable Logic Design — CORE
YEAR 5	SEMESTER 1	**ELEC4840A** Final Year Engineering Project Part A — CORE	**DIRECTED** Computer Systems — DIRECTED	**DIRECTED** Computer Systems — DIRECTED	**DIRECTED** Mathematics 3000 level — DIRECTED
YEAR 6	SEMESTER 1	**DIRECTED** Mathematics 3000 level — DIRECTED	**DIRECTED** Mathematics 3000 level — DIRECTED	**DIRECTED** Mathematics 3000 level — DIRECTED	**ELECTIVE** — ELECTIVE

COMPULSORY PROFESSIONAL PRACTICE: INDUSTRIAL EXPERIENCE 12 WEEKS

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To be eligible to graduate make sure you have completed 410 units (10 units = 1 course unless otherwise specified) which meet the following criteria:

- **Core and Compulsory** courses – 310 units

  Math courses - Choice of maths courses is based on your assumed knowledge. To find out which MATH course you should enrol in please see the **Enrolling in Maths information**. More information is in your **Program Handbook**.

- **Directed** courses – 80 units; including 20 units of Computer Systems directed courses and 60 units of Mathematics directed courses.
- **Elective** courses – 20 units
- It is also a requirement that students complete a total of 12 weeks of **industrial experience**.
- The duration of this program is 5 years full-time (40 units per semester) or part-time equivalent.
- The maximum time to complete this program is 12 years.

Some courses have assumed knowledge and/or requisites, please refer to the individual **Course Handbook**. Please refer to the **Program Handbook** for specific information on program structure. If you are intending varying from this program plan please seek advice from your **Academic Program Advisor**.

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DIRECTED COURSES

STUDIES IN MATHEMATICS & STATISTICS MAJOR

Complete 20 units from:

MATH2800: Ordinary Differential Equations
STAT2300: Statistical Inference
STAT2000: Applied Statistics and Research Methods
MATH2242: Complex Analysis

Complete 40 units from:

MATH3120: Algebra
MATH3170: Number Theory
MATH3205: Fourier Analysis
MATH3700: Advanced Differential Equations
MATH3820: Numerical Methods
STAT3800: Deterministic and Stochastic Optimisation
STAT3030: Generalised Linear Models
STAT3040: Time Series Analysis
STAT3100: Systems Thinking for an Integrated Workforce

DIRECTED COURSES

COMPUTER SYSTEMS ENGINEERING

Complete 20 units from:

SENG2200: Programming Languages and Paradigms
COMP3260: Data Security
COMP3330: Machine Intelligence
COMP3340: Data Mining
COMP3600: Security Standards and Practices in Industry
ELEC3400: Signal Processing
ELEC4210: Electronics Design
ELEC4740: Internet of Things