

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

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**