

# PROGRAM PLAN

## BACHELOR OF COMPUTER SYSTEMS ENGINEERING (HONOURS) / BACHELOR OF COMPUTER SCIENCE

**PROGRAM OPTION:**  
Commencing in Semester 2

**START DATE:**  
2017 to 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	DESCRIPTION	STATUS
YEAR 1	SEMESTER 1	COMP1010	Computing Fundamentals	CORE
	SEMESTER 2	ELEC1710	Digital and Computer Electronics 1	CORE
YEAR 2	SEMESTER 1	ENGG1003	Introduction to Procedural Programming	CORE
	SEMESTER 2	ELEC1310	Introduction to Electrical Engineering	CORE
YEAR 3	SEMESTER 1	MATH1110	Mathematics for Engineering, Science and Technology 1	CORE <i>Replaces option of MATH1110 OR MATH1210</i>
	SEMESTER 2	COMP1140	Database and Information Management	CORE
YEAR 4	SEMESTER 1	ENGG1500	Introduction to Professional Engineering	CORE
	SEMESTER 2	COMP2240	Operating Systems	CORE
YEAR 5	SEMESTER 1	MATH1120	Mathematics for Engineering, Science and Technology 2	CORE <i>Replaces option of MATH1120 OR MATH1220</i>
	SEMESTER 2	ENGG2500	Sustainable Engineering Practice	CORE <i>In 2021 changed from Sem 1 to Sem 2</i>
YEAR 6	SEMESTER 1	ELEC2320	Electrical and Electronic Circuits	CORE
	SEMESTER 2	COMP2230	Algorithms	CORE
YEAR 7	SEMESTER 1	SENG1120	Data Structures	CORE
	SEMESTER 2	SENG2250	System and Network Security	CORE
YEAR 8	SEMESTER 1	STAT2110	Engineering Statistics	CORE <i>In 2021 changed from Sem 2 to Sem 1</i>
	SEMESTER 2	SENG2260	Human-Computer Interaction	CORE
YEAR 9	SEMESTER 1	ELEC2720	Introduction to Embedded Computing	CORE
	SEMESTER 2	DIRECTED	Computer Systems	DIRECTED <i>From 2021, 10 units Directed will count in place of ELEC3850</i>
YEAR 10	SEMESTER 1	SENG2130	Systems Analysis and Design	CORE
	SEMESTER 2	ELEC3540	Analog and Digital Communications	CORE
YEAR 11	SEMESTER 1	COMP2270	Theory of Computation	CORE
	SEMESTER 2	ELEC3240	Analog Electronics	CORE
YEAR 12	SEMESTER 1	ENGG3500	Managing Engineering Projects	CORE
	SEMESTER 2	ELEC3500	Telecommunication Networks	CORE
YEAR 13	SEMESTER 1	ELEC3730	Digital and Computer Electronics 2	CORE
	SEMESTER 2	ELEC4840A	Final Year Engineering Project Part A	CORE
YEAR 14	SEMESTER 1	COMP3500	Security Attacks: Analysis and Mitigation Strategies	CORE <i>From 2021, will count in place of SENG2050</i>
	SEMESTER 2	ENGG4500	Engineering Complexity	CORE
YEAR 15	SEMESTER 1	DIRECTED	Computer Systems	DIRECTED <i>Replaced SENG3400 in 2019</i>
	SEMESTER 2	ELEC4720	Programmable Logic Design	CORE
YEAR 16	SEMESTER 1	ELEC4840B	Final Year Engineering Project Part B <i>Must be taken following ELEC4840A (20 units)</i>	CORE
	SEMESTER 2	COMP3290	Compiler Design	COMPULSORY
YEAR 17	SEMESTER 1	COMP3330	Machine Intelligence	COMPULSORY
	SEMESTER 2	DIRECTED	Computer Science	DIRECTED

COMPULSORY PROFESSIONAL PRACTICE: INDUSTRIAL EXPERIENCE 12 WEEKS

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To be eligible to graduate make sure you have completed 400 units (10 units = 1 course unless otherwise specified) which meet the following criteria:

- **Core and Compulsory courses** – 370 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](#).

**Prior to 2021**, students could choose to complete either MATH1110 and MATH1120, **OR** MATH1210 and MATH1220. Note that due to course offerings it is recommended midyear commencing students take MATH1110 and MATH1120, and that you also consider the University's [Summer School](#) offerings following your first semester.

**After 2021**, the option to do MATH1210 and MATH1220 has been removed from the program. **From 2021 onwards:** 1) if you have not yet completed MATH1210 you must complete MATH1110; and 2) if you haven't completed MATH1220 then you must complete MATH1120.

- **Directed courses** – 30 units

**From 2019**, 10 units of Directed courses will count in place of SENG3400. If you have already completed SENG3400, please note this will count as 10 units of Engineering Directed courses. Refer to the transition document in the [Program Handbook](#) for further information.

**From 2021**, 10 units of Directed courses will count in place of ELEC3850. If you have already completed ELEC3850, please note this will count as 10 units of Engineering Directed courses. Refer to the transition document in the [Program Handbook](#) for further information.

- 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.

**IMPORTANT:** Continuing students should refer to the transition document in the [Program Handbook](#) for further information.



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

#### COMPUTER SYSTEMS ENGINEERING

Complete 20 units from:

**SENG2200: Programming Languages and Paradigms**  
**COMP3260: Data Security**  
**COMP3340: Data Mining**  
**COMP3600: Security Standards and Practices in Industry**  
**ELEC3400: Signal Processing**  
**ELEC4210: Electronics Design**  
**ELEC4740: Internet of Things**  
*PHYS3360: Advanced Electromagnetism (no longer offered)*

*If you have completed ELEC3850 and/or SENG3400, these will count as directed courses.*

### DIRECTED COURSES

#### COMPUTER SCIENCE – COMPUTER SYSTEMS & ROBOTICS MAJOR

Complete 10 units from:

**SENG2200: Programming Languages and Paradigms**  
**SENG3320: Software Verification and Validation**  
**COMP3260: Data Security**  
**COMP3320: Computer Graphics**  
**COMP3350: Advanced Database**  
**ELEC3400: Signal Processing**  
**ELEC4210: Electronics Design**  
*ELEC4550: Wireless Communications (no longer offered)*