# PROGRAM PLAN

**BACHELOR OF MECHATRONICS ENGINEERING (HONOURS)/BACHELOR OF ELECTRICAL & ELECTRONICS ENGINEERING (HONOURS)**

<table>
<thead>
<tr>
<th>PROGRAM OPTION:</th>
<th>Full time or part time</th>
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<tbody>
<tr>
<td>START DATE:</td>
<td>Semester 2 2017 - 2020</td>
</tr>
<tr>
<td>LOCATION:</td>
<td>Callaghan</td>
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**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 Program Advisor to ensure you remain on track.**

**PROGRAM HANDBOOK**

**COURSE HANDBOOK**

**NAME:**

**STUDENT NO.:**

<table>
<thead>
<tr>
<th>YR</th>
<th>SEMESTER 1</th>
<th>SEMESTER 2</th>
<th>SEMESTER 3</th>
<th>SEMESTER 4</th>
<th>SEMESTER 5</th>
<th>SEMESTER 6</th>
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<tbody>
<tr>
<td>1</td>
<td>ENGG1003 Introduction to Procedural Programming CORE</td>
<td>ELEC1310 Introduction to Electrical Engineering CORE</td>
<td>ELEC2320 Electrical &amp; Electronic Circuits CORE</td>
<td>AERO3600 Embedded Control Systems Replaced ENGG3440 CORE</td>
<td>ELEC3130 Electric Machines and Power Systems CORE</td>
<td>DIRECTED # Please note, you can study this in any semester/year</td>
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<td>ENGG1500 Introduction to Professional Engineering CORE</td>
<td>ELEC1710 Digital and Computer Engineering 1 CORE</td>
<td>ENGG2500 Sustainable Engineering Practice CORE</td>
<td>ELEC2132 Electric Energy Systems CORE</td>
<td>ELEC3540 Analog and Digital Communications CORE</td>
<td>ELECTIVE # This can be taken in any term, including summer or winter</td>
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<td>MATH1120 * Mathematics for Engineering, Science and Technology 2 CORE</td>
<td>MATH2310 Calculus of Science &amp; Engineering CORE</td>
<td>MECH2360 Dynamics of Machines CORE</td>
<td>ELEC2430 Circuits and Signals CORE</td>
<td>ENGG4440 Nonlinear Control and Estimation CORE</td>
<td>ELECTIVE # This can be taken in any term, including summer or winter</td>
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<td></td>
<td>ELECTIVE # This can be taken in any term, including summer or winter</td>
<td>PHYS1210 Advanced Physics I CORE</td>
<td>ELECTIVE</td>
<td>ELEC2430 Circuits and Signals CORE</td>
<td>MCHA3500 Mechatronics Design 1 CORE</td>
<td>ENGG4500 Engineering Complexity CORE</td>
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<td>PHYS1210 Advanced Physics I CORE</td>
<td>ENGG1110 Mechanical Drawing/CAD &amp; Workshop Practice CORE</td>
<td>MECH1110 Mechanical Engineering Design 1 CORE</td>
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<td>MATH2310 Calculus of Science &amp; Engineering CORE</td>
<td>MCHA2000 Embedded Systems Engineering Replaced ELEC3730 CORE</td>
<td>ENGG3440 Electromagnetic Fields and Devices CORE</td>
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<td>PHYS1220 Advanced Physics II CORE</td>
<td>MECH2110 Mechanical Engineering Design 1 CORE</td>
<td>ENGG4440 Nonlinear Control and Estimation CORE</td>
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<td>PHYS1210 Advanced Physics I CORE</td>
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**COURSE STATUS KEY**

- C = Completed
- En = Enrolled
- NS = Not Started

**COMPULSORY REQUIREMENT:** EXPOSURE TO PROFESSIONAL PRACTICE (EEP)/INDUSTRIAL EXPERIENCE (IE) 12 WEEKS

If you have any questions visit [NEWCASTLE.EDU.AU/ASKUON](http://NEWCASTLE.EDU.AU/ASKUON).

Information correct as of 27 November 2019 and subject to change. Program code: 40075 CRICOS Code: 088934D CRICOS Provider: 00109J
**Directed Courses** (subject to change – please refer to the program handbook for up to date information)

Complete 10 units:

- **PHYS3360** Advanced Electromagnetism
- **ELEC3251** Power Electronics and Renewable Energy Systems
- **ELEC3500** Telecommunication Networks
- **ELEC4210** Electronics Design
- **ELEC4720** Programmable Logic Design
- **ELEC3160** Off-Grid Power Systems
- **ELEC3400** Signal Processing
- **ELEC4160** Advanced Drives and Power Electronics
- **ELEC4550** Wireless Communications
- **ELEC4700** Advanced Computer Systems

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 courses** – 360 units
  - MATH courses - 20 units. The choice of maths courses is based on your current knowledge. To find out which MATH courses you should enrol in please see the Enrolling in Maths information. More information is in your Program Handbook
    - Please note, completion of MATH1002 counts as 10 units of electives
  - MECH4841B/ELEC4840B must be completed in the semester immediately following MECH4841A/ELEC4840A

- **Directed courses** – 10 units

- **Electives** – 30 units. Students can choose from any unrestricted course taught at the University (as long as it is not already a core course of this degree)
  - Visit the Course Handbook to see a list of available electives. Please note, completion of MATH1002 counts as 10 units of electives

- No more than 120 units at the 1000 level will count towards each individual degree

- Students must undertake 12 weeks of approved industrial experience

- The duration of this program is 5 year 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 Program Advisor.