



## Bachelor of Engineering (Honours) in Mechatronic Engineering (Domestic students)

### Program code

1426

### Commencing in

For Continuing Students Only

### Available at

### Duration

4 years full-time

8 years part-time

### Credit points

320

### Degree requirements: Students who started Semester 1 - 2016

For Domestic and those International students not required to complete the English Language Enhancement course

To be eligible for the award of *Bachelor of Engineering (Honours) in Mechatronic Engineering [BEng(Hons)]*, a student must acquire 320 credit points as prescribed below:

- gain 310 credit points as prescribed;
- gain 10 credit points for **Undergraduate free-choice elective/s**;
- complete no more than 120 credit points at first year level;
- complete at least 80 credit points of courses at final year level;
- complete a minimum of 12 weeks (60 days) of approved experience in an engineering practice environment (or a satisfactory alternative) during their degree studies.

### Exit point

To be eligible to exit the Bachelor of Engineering (Honours) in Mechatronic Engineering program with the Bachelor of Engineering Science award, a student must acquire 240 credit points as prescribed below:

- at least 210 credit points from the Bachelor of Engineering (Honours) in Mechatronic Engineering course list including all first year level and second year level core courses
- no more than 30 credit points of **Undergraduate free-choice elective/s**
- at least 60 credit points of courses at third year level or higher
- no more than 100 credit points of courses at first year level.

Note: Students undertaking the **Bachelor of Engineering (Honours) in Electronic and Biomedical Engineering (1424)** or **Bachelor of Engineering (Honours) in Software Engineering (1478)** will need to have completed some Year 4 courses to meet the above requirements.

To exit, a student should apply for a program transfer.

### Honours

#### Classification of Honours

#### Bachelor of Engineering (Honours) in Mechatronic Engineering

Honours in this program is awarded on the basis of sustained performance in the final two years of the program and in accordance with the Honours Weighted Average (HWA). The Honours Weighted Average is calculated using specified courses (third and fourth year level including the research component) which are referred to as the **Honours Calculable Courses (HCC)** and these courses are identified in the course lists within the program structure.

The Honours Weighted Average is calculated by multiplying the 120 credit points of Honours Calculable Courses by the percentage mark and the relevant weighting assigned for each course, divided by 120 credit points multiplied by the relevant weighting factor.

#### Cut-offs for Honours Classification

- **Class I Honours:**
  - Overall HWA Range: 80 - 100%
  - Minimum Thesis Mark - 80%
- **Class IIA Honours:**
  - Overall HWA Range: 70 - 79%
  - Minimum Thesis Mark - 70%
- **Class IIB Honours:**
  - Overall HWA Range: 55 - 69.9%
  - Minimum Thesis Mark - 60%
- **Class III Honours:**
  - Overall HWA Range: < 54.9%
  - Minimum Thesis Mark - 50%

### Australian Qualifications Framework (AQF) Level and Type

The **Australian Qualifications Framework (AQF)** is the national policy for regulated qualifications in Australian education and training. This qualification is accredited as an AQF Level 8 - Bachelor Honours Degree.

### English Language Enhancement

Domestic students enrolled in this program whose first language is not English may complete the following **English Language Enhancement Course** as an elective.

- **5903LHS Language and Communication for Sciences**

**Students whose first language is English are not permitted to undertake this course.**

### Program learning outcomes

#### Program learning outcomes

**Program Learning Outcomes** communicate to the community the value of the Griffith educational experience as benchmarked against national qualification standards.

**Program Learning Outcomes for this award** describe the knowledge, skills and the application of knowledge and skills you will acquire through studying the Griffith program of your choice.

### Course list: Students starting Semester 1 - 2016

**Course offering information in program structures is a guide only. Please check the actual offering information in the Course Catalogue.**

**Note: Students must check the prerequisite and incompatible requirements before selecting any course within this program.**

Course selection for students required to complete the English Language Enhancement course

Students entering the program in **Trimester 1** will:

- complete **5903LHS Language and Communication for Sciences** in their first trimester of study in place of **1007ENG Engineering Fundamentals** and
- complete **1007ENG Engineering Fundamentals** in Year 3 in place of a **Undergraduate free-choice elective/s**.

### Year 1

Students must complete the following courses:

| Semester | Course code | Requirement | Course title  | CP |
|----------|-------------|-------------|---|----|
| Tri 1    | 1007ENG     |             | Engineering Fundamentals (see Note 1) (not offered from 2017) | 10 |
|          |             |             | <b>OR</b>   |    |
| Tri 1,3  | 1701ENG     |             | Creative Engineering (Withdrawn from 2022)                    | 10 |
|          |             |             | <b>OR</b>   |    |
| Tri 1,3  | 1008ENG     |             | Programming and Computing for Engineers                       | 10 |
|          |             |             | <b>OR</b>   |    |
| Tri 1    | 5903LHS     |             | Language and Communication for Sciences                       | 10 |
| Tri 1    | 1502ENG     |             | Engineering Materials (not offered from 2017)                 | 10 |
|          |             |             | <b>OR</b>   |    |
| Tri 1,3  | 1017ENG     |             | Engineering Materials   | 10 |
| Tri 1    | 1011SCG     |             | Mathematics 1A (not offered from 2017)                        | 10 |
|          |             |             | <b>OR</b>   |    |
| Tri 1    | 1010ENG     |             | Engineering Mathematics 1                                     | 10 |
| Tri 1    | 1004ENG     |             | Computing and Programming with MATLAB (not offered from 2018) | 10 |
|          |             |             | <b>OR</b>   |    |
| Tri 2    | 1305ENG     |             | Engineering Programming (withdrawn from 2022)                 | 10 |
|          |             |             | <b>OR</b>   |    |
| Tri 2    | 1008ENG     |             | Programming and Computing for Engineers                       | 10 |
| Tri 2    | 1006ENG     |             | Design and Professional Skills                                | 10 |
| Tri 2    | 1005ENG     |             | Electronics for Engineers (not offered from 2017)             | 10 |
|          |             |             | <b>OR</b>   |    |
| Tri 2,3  | 1301ENG     |             | Electric Circuits   | 10 |
| Tri 2    | 1501ENG     |             | Engineering Mechanics   | 10 |
| Tri 1    | 1012SCG     |             | Mathematics 1B (offered for the last time in Tri 1 2017)      | 10 |
|          |             |             | <b>OR</b>   |    |
| Tri 2    | 1020ENG     |             | Engineering Mathematics 2                                     | 10 |

Note 1. Students not undertaking 1007ENG in Year 1 must complete this course in Year 3.

## Year 2

Students must complete the following courses:

| Semester | Course code | Requirement | Course title  | CP |
|----------|-------------|-------------|---|----|
| Tri 1    | 2311ENG     |             | Analog Electronics I  | 10 |
| Tri 1    | 2315ENG     |             | Digital Electronics   | 10 |
| Tri 1    | 2203NSC     |             | Mathematics 2A (not offered from 2018)                          | 10 |
|          |             |             | <b>OR</b>   |    |
| Tri 1    | 2205NSC     |             | Calculus II   | 10 |
| Tri 1    | 2101ENG     |             | Mechanics of Materials I  | 10 |
| Tri 2    | 2312ENG     |             | C Programming and Computer Architecture (not offered from 2017) | 10 |
|          |             |             | <b>OR</b>   |    |
| Tri 2    | 1305ENG     |             | Engineering Programming (withdrawn from 2022)                   | 10 |
|          |             |             | <b>OR</b>   |    |
| Tri 2    | 1008ENG     |             | Programming and Computing for Engineers                         | 10 |
| Tri 2    | 2303ENG     |             | Embedded Systems  | 10 |
| Tri 2    | 3318ENG     |             | Sensors and Actuators (not offered from 2018)                   | 10 |
|          |             |             | <b>OR</b>   |    |
| Tri 2    | 3327ENG     |             | Sensors and Conditioning Circuits                               | 10 |
| Tri 2    | 2305ENG     |             | Signals and Systems   | 10 |

### Year 3

Students must complete the following courses:

| Semester | Type  | Course code | Requirement | Course title  | CP |
|----------|-------|-------------|-------------|---|----|
| Tri 1    | HCC-A | 3304ENG     |             | Control Systems   | 10 |
| Tri 1    |       |             |             | Undergraduate free-choice elective/s (see Note 1)                                       | 10 |
|          |       |             |             | <b>OR</b>   |    |
| Tri 1    |       | 1007ENG     |             | Engineering Fundamentals (see Note 2) (not offered from 2017)                           | 10 |
|          |       |             |             | <b>OR</b>   |    |
| Tri 1,3  |       | 1701ENG     |             | Creative Engineering (see Note 2) (Withdrawn from 2022)                                 | 10 |
|          |       |             |             | <b>OR</b>   |    |
| Tri 1,3  |       | 1008ENG     |             | Programming and Computing for Engineers   | 10 |
| Tri 1    |       | 3317ENG     |             | Kinematics and Dynamics (not offered from 2018)   | 10 |
|          |       |             |             | <b>OR</b>   |    |
| Tri 1    |       | 2517ENG     |             | Kinematics and Dynamics (offered from 2018)   | 10 |
| Tri 1    |       | 3312ENG     |             | Electrical Design Project   | 10 |
| Tri 2    |       | 2505ENG     |             | Design of Machine Elements (not offered from 2019)                                      | 10 |
|          |       |             |             | <b>OR</b>   |    |
| Tri 2    |       | 3511ENG     |             | Design of Machine Elements (offered from 2019)  | 10 |
| Tri 2    | HCC-A | 3321ENG     |             | Instrumentation and Monitoring (Previously Signal Conditioning) (not offered from 2019) | 10 |
| Tri 2    | HCC-A | 6319ENG     |             | Precision Engineering and Prototyping (not offered from 2019)                           | 10 |
|          |       |             |             | <b>OR</b>   |    |
| Tri 2    |       | 2501ENG     |             | Manufacturing Technology (offered from 2019)  | 10 |
| Tri 2    | HCC-B | 6524ENG     |             | System Dynamics and Advanced Control  | 10 |

Note 1: Students may choose **Undergraduate free-choice elective/s** from across the university or choose Engineering electives from the list below.

Note 2: Students not undertaking 1007ENG or 1701ENG in Year 1 must complete one of these courses in Year 3.

Type:

HCC-A = Honours Calculable Courses with a weighting factor of 1

HCC-B = Honours Calculable Courses with a weighting factor of 2

**Exit point:** **Bachelor of Engineering Science (1573)**. To exit (after completing the 240 credit point requirements of Years 1, 2 and 3), a student should apply for a program transfer.

#### Year 4

Students must complete the following courses:

| Semester | Type  | Course code | Requirement | Course title  | CP |
|----------|-------|-------------|-------------|---|----|
| Tri 1    | HCC-B | 6321ENG     |             | Discrete Time Signal Processing                                     | 10 |
| Tri 1    | HCC-B | 6308ENG     |             | Digital Control System Engineering                                  | 10 |
| Tri 2    | HCC-B | 6309ENG     |             | Mechatronic Systems Design and Engineering                          | 10 |
| Tri 1    | HCC-A | 4000ENG     |             | Research Methods and Statistics                                     | 10 |
| Tri 2    | HCC-B | 6007ENG     |             | IAP - Thesis (capstone course) (not offered from 2021) (see Note 1) | 30 |
|          |       |             |             | <b>AND</b>  |    |
| Tri 2    |       | 6008ENG     |             | IAP - Professional Practice (not offered from 2021) (see Note 1)    | 10 |
|          |       |             |             | <b>OR</b>   |    |
| Tri 2    | HCC-B | 6002ENG     |             | IAP (offered from 2020) (see Note 1)                                | 40 |

Note 1: Students who have completed either 6007ENG or 6008ENG should complete the corresponding course (6007ENG or 6008ENG) before 2021. Students who have not completed either 6007ENG or 6008ENG should enrol in 6002ENG.

Type:

HCC-A = Honours Calculable Courses with a weighting factor of 1

HCC-B = Honours Calculable Courses with a weighting factor of 2

#### Electives (1 available)

#### Listed Mechatronic Engineering electives

| Semester | Course code | Requirement | Course title   | CP |
|----------|-------------|-------------|--|----|
| Tri 1    | 2502ENG     |             | Mechanical Engineering Design                                    | 10 |
| Tri 1    | 6317ENG     |             | Biomedical and Sport Instrumentation (not offered from 2020)     | 10 |
| Tri 1    | 6318ENG     |             | Signals and Imaging for Biomedical Applications                  | 10 |
| Tri 2    | 3004ENG     |             | Project Management Principles                                    | 10 |
| Tri 2    | 3309ENG     |             | Engineering Electromagnetics (not offered from 2016)             | 10 |
|          |             |             | <b>courseLineOperator</b>  |    |
| Tri 2    | 2314ENG     |             | Engineering Electromagnetics (offered from 2016)                 | 10 |
| Tri 2    | 3320ENG     |             | Electrical Machines and Renewable Generators (offered from 2017) | 10 |