Bachelor of Engineering (Honours) (BENH) - BEng(Hons)

QTAC code (Australian and New Zealand applicants): Toowoomba campus: 907331; External: 907335; Springfield campus: 927331

CRICOS code (International applicants): 079519E

<table>
<thead>
<tr>
<th>Start:</th>
<th>On-campus^#</th>
<th>External</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trimester 1 (January)</td>
<td>Trimester 1 (January)</td>
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<tr>
<td></td>
<td>Trimester 2 (May)</td>
<td>Trimester 2 (May)</td>
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<tr>
<td></td>
<td>Trimester 3 (September)</td>
<td>Trimester 3 (September)</td>
</tr>
<tr>
<td>Campus:</td>
<td>Springfield, Toowoomba</td>
<td>-</td>
</tr>
<tr>
<td>Fees:</td>
<td>Commonwealth supported place</td>
<td>Commonwealth supported place</td>
</tr>
<tr>
<td></td>
<td>Domestic full fee paying place</td>
<td>Domestic full fee paying place</td>
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<tr>
<td></td>
<td>International full fee paying place</td>
<td>International full fee paying place</td>
</tr>
<tr>
<td>Standard duration:</td>
<td>4 years full-time, 8 years part-time</td>
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</tr>
<tr>
<td>Program articulation:</td>
<td>From: Associate Degree of Engineering; Bachelor of Engineering Technology</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
In 2023 the program follows the Semester calendar. The Academic Calendar and Important Dates webpage will allow you to view and download a copy of the important dates for the Semester calendar.

Footnotes
^ The only majors available on-campus at UniSQ Springfield are Civil Engineering, Electrical and Electronic Engineering, Mechanical Engineering and Mechatronic Engineering.
# The Instrumentation Control and Automation Engineering major is only available via external study.

Contact us

Future Australian and New Zealand students

Ask a question
Freecall (within Australia): 1800 269 500
Phone (from outside Australia): +61 7 4631 5315
Email: study@usq.edu.au

Future International students

Ask a question
Phone: +61 7 4631 5543
Email: international@usq.edu.au

Current students

Ask a question
Freecall (within Australia): 1800 007 252
Phone (from outside Australia): +61 7 4631 2285
Email: usq.support@usq.edu.au

Professional accreditation

A graduate of this program is eligible to apply for membership of Engineers Australia as a graduate Professional Engineer. After further professional development, a graduate member with a Bachelor of Engineering (Honours) may apply for chartered status as a Professional Engineer and, when granted, may use the post-nominal MIEAust CPEng.

The Bachelor of Engineering (Honours) program is accredited by Engineers Australia and, through an agreement reached between the professional engineering bodies of other countries (the Washington Accord), is also recognised in those countries that are signatories to the Washington Accord.

Program aims

The Bachelor of Engineering (Honours) provides students with the knowledge and skills that are necessary to commence practice as a professional engineer; be eligible for graduate membership of Engineers Australia (as a Professional Engineer) and other appropriate professional bodies; and to undertake further advanced
level studies in engineering. Specifically the program provides students with a core of basic generic and technical skills, common to all branches of engineering, and then permits students to undertake an in depth study of either agricultural, civil, computer systems, electrical and electronic, environmental, instrumentation control and automation, mechanical, mechatronic or power engineering. In addition, students are equipped with a knowledge of the industrial and social environments in which they will function as professional engineers. The program also seeks to instil in students a capacity to communicate effectively and adapt to change.

The Bachelor of Engineering (Honours) is primarily vocationally oriented. However, the program has been designed to identify students who have the capacity to undertake further study at an advanced level and to make an original contribution to engineering knowledge.

Program objectives
On completion of this program, students should be able to:

- Display coherent and comprehensive knowledge of historical, contemporary and emerging theories and concepts that underpin relevant engineering disciplines.
- Recognise the social purpose of engineering and analyse the relationship between human-made products and systems, and community needs.
- Apply well-researched, innovative, industry-relevant systems approaches to solve a range of engineering problems, and to address issues of sustainable practice in diverse environmental, technical and social contexts.
- Apply relevant project management skills and formulate design processes to enable the delivery of engineering projects within given project constraints.
- Make appropriate autonomous judgements by critically evaluating evidence, identifying and analysing ethical issues and applying cultural competencies, including those relevant to indigenous peoples.
- Communicate effectively in English and interpret information for diverse audiences using a range of high-level oral, written and technology-based approaches; and apply effective competencies as a leader, team member and individual within the professional domain.
- Engage in lifelong learning through critical reflection, and be accountable for their personal and professional actions by managing and monitoring personal performance.

Australian Qualifications Framework
The Australian Qualifications Framework (AQF) is a single national, comprehensive system of qualifications offered by higher education institutions (including universities), vocational education and training institutions and secondary schools. Each AQF qualification has a set of descriptors which define the type and complexity of knowledge, skills and application of knowledge and skills that a graduate who has been awarded that qualification has attained, and the typical volume of learning associated with that qualification type.

This program is at AQF Qualification Level 08. Graduates at this level will have advanced knowledge and skills for professional or highly skilled work and/or further learning.

The full set of levels criteria and qualification type descriptors can be found by visiting www.aqf.edu.au.

Program Information Set
View UniSQ's admission criteria, student profiles and a summary of all offers made under Course Admission Information Set via the QTAC website.

Admission requirements
To be eligible for admission, applicants must satisfy the following requirements:

- Have achieved a minimum Australian Tertiary Admission Rank (ATAR) of 74.15, or equivalent qualification.

- Subject Pre-requisites: English (Units 3 & 4, C) and Mathematical Methods (Units 3 & 4, C) or equivalent.
- English Language Proficiency requirements for Category 2.

Applicants are advised to also address the following:
- Recommended Prior Study: Physics (Units 3 & 4, C) or equivalent.

All students are required to satisfy the applicable English language requirements.

If students do not meet the English language requirements they may apply to study a University-approved English language program. On successful completion of the English language program, students may be admitted to an award program.

These are determined by the University for specific programs each Semester. The 2023 ATAR and tertiary entrance ranks are based on agreed QTAC schedules which assess formal study at Year 12 or equivalent level, tertiary, preparatory, professional or vocational qualifications or work experience, as detailed in the QTAC Assessment of Qualifications Manual and QTAC Assessor Guidelines.

Adjustment factors may help you get into the program of your choice by increasing your entrance rank. The additional points don't apply to all applicants or all programs. Please read the information about UniSQ's Adjustment Factors carefully to find out what you may be eligible for.

**Program fees**

**Commonwealth supported place**
A Commonwealth supported place is where the Australian Government makes a contribution towards the cost of a students' higher education and students pay a student contribution amount, which varies depending on the courses undertaken. Students are able to calculate the fees for a particular course via the Course Fee Schedules.

Commonwealth Supported students may be eligible to defer their fees through a Government loan called HECS-HELP.

**Domestic full fee paying place**
Domestic full fee paying places are funded entirely through the full fees paid by the student. Full fees vary depending on the courses that are taken. Students are able to calculate the fees for a particular course via the Course Fee Schedule.

Domestic full fee paying students may be eligible to defer their fees through a Government loan called FEE-HELP provided they meet the residency and citizenship requirements.

Australian citizens, Permanent Humanitarian Visa holders, Permanent Resident visa holders and New Zealand citizens who will be resident outside Australia for the duration of their program pay full tuition fees and are not eligible for FEE-Help.

**International full fee paying place**
International students pay full fees. Full fees vary depending on the courses that are taken and whether they are studied on-campus, external or online. Students are able to calculate the fees for a particular course via the Course Fee Schedules.

**Program structure**
The Bachelor of Engineering (Honours) is a 32-unit program consisting of Academic Courses and Practice Courses. Students undertake a major of study, including approved courses which students are able to select. Students may choose to substitute four approved courses for a minor of four units in another area of study to their major (except for Mechanical Engineering and Mechatronic Engineering). The available minors and associated courses are listed in the minor studies section.

Academic courses are normally one-unit courses and involve approximately 155 hours of student work per unit.

Practice courses are zero unit courses and each involves approximately 50 hours of student work.
The following table shows the mandatory components of the program:

<table>
<thead>
<tr>
<th>Program Component</th>
<th>Academic Courses</th>
<th>Practice Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Courses</td>
<td>Units</td>
</tr>
<tr>
<td>Core Studies</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Major Study (including approved courses) OR Major Study plus Minor Study</td>
<td>21 OR 17+4</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>32</td>
</tr>
</tbody>
</table>

**Minor Studies**

A minor study is a coherent group of four units of courses that provides students with an additional breadth of study in their program. Students who wish to take a minor study before undertaking any course should ensure any pre-requisite courses are completed or exempted, enrolment requirements must be satisfied for any course selected.

<table>
<thead>
<tr>
<th>Major study</th>
<th>Minor Study available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Engineering</td>
<td>Yes</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>Yes</td>
</tr>
<tr>
<td>Computer Systems Engineering</td>
<td>Yes</td>
</tr>
<tr>
<td>Electrical and Electronic Engineering</td>
<td>Yes</td>
</tr>
<tr>
<td>Environmental Engineering</td>
<td>Yes</td>
</tr>
<tr>
<td>Instrumentation Control and Automation Engineering</td>
<td>Yes</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>No</td>
</tr>
<tr>
<td>Mechatronic Engineering</td>
<td>No</td>
</tr>
<tr>
<td>Power Engineering</td>
<td>Yes</td>
</tr>
</tbody>
</table>

When students select a minor, courses will only count towards that minor if they have not already counted towards another selected major. Not all minors are available on-campus at all campuses. Students undertaking a Minor study may choose courses from those listed in this section of the Handbook as follows:

<table>
<thead>
<tr>
<th>Major: All except Mechanical or Mechatronic</th>
<th>Toowoomba (ONC)</th>
<th>Springfield (ONC)</th>
<th>External (EXT)</th>
<th>Online (ONL)</th>
<th>Enrolment requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor Study – Management. Select the following course:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG4004 Engineering Project and Operations Management</td>
<td>S3</td>
<td></td>
<td>S2, S3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>select 3 other courses from the following list:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGT2001 Risk Mitigation, Work Health and Safety</td>
<td>S1</td>
<td>S1</td>
<td>S1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Course Title</td>
<td>Semester 1</td>
<td>Semester 2</td>
<td>Semester 1</td>
<td>Semester 2</td>
</tr>
<tr>
<td>--------</td>
<td>------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>MGT2007</td>
<td>Leadership</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGT3004</td>
<td>Creativity, Innovation and Entrepreneurship</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>MGT3005</td>
<td>Workforce Design</td>
<td>S1</td>
<td>S1</td>
<td>S1</td>
<td>S1</td>
</tr>
<tr>
<td>MGT3203</td>
<td>Project Management Processes</td>
<td>S2</td>
<td>S2</td>
<td>S2</td>
<td>S2</td>
</tr>
</tbody>
</table>

**Major: Agricultural Engineering**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Toowoomba (ONC)</th>
<th>Springfield (ONC)</th>
<th>External (EXT)</th>
<th>Online (ONL)</th>
<th>Enrolment requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEC2202</td>
<td>Manufacturing Processes</td>
<td>S1</td>
<td>S1</td>
<td>S1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC2406</td>
<td>Introduction to Mechatronics and Automation</td>
<td>S2</td>
<td>S2</td>
<td>S2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC3203</td>
<td>Materials Technology</td>
<td>S1</td>
<td>S1</td>
<td>S1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC3303</td>
<td>Mechanical and Mechatronic System Design</td>
<td>S2</td>
<td>S2</td>
<td>S2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC4406</td>
<td>Robotics and Machine Vision</td>
<td>S2</td>
<td>S2</td>
<td>S2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Minor study: Mechanical Engineering (select 4 courses from the following list):**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Toowoomba (ONC)</th>
<th>Springfield (ONC)</th>
<th>External (EXT)</th>
<th>Online (ONL)</th>
<th>Enrolment requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIN2001</td>
<td>Mining Technology and Mineral Processing</td>
<td></td>
<td></td>
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<tr>
<td>MIN2002</td>
<td>Mine Planning and Design</td>
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<tr>
<td>MIN2003</td>
<td>Mine Operations and Management</td>
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</tr>
</tbody>
</table>

**Major: Civil Engineering**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Toowoomba (ONC)</th>
<th>Springfield (ONC)</th>
<th>External (EXT)</th>
<th>Online (ONL)</th>
<th>Enrolment requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIN2001</td>
<td>Mining Technology and Mineral Processing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIN2002</td>
<td>Mine Planning and Design</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIN2003</td>
<td>Mine Operations and Management</td>
<td></td>
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</tr>
</tbody>
</table>
MINAD approved course taken through Central Queensland University (CQU) via cross-institutional enrolment. ENAR12004 Mine Management and Safety OR ENAR11001 Resource Geology

<table>
<thead>
<tr>
<th>Major: Civil Engineering</th>
<th>Toowoomba (ONC)</th>
<th>Springfield (ONC)</th>
<th>External (EXT)</th>
<th>Online (ONL)</th>
<th>Enrolment requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor study: Transport Engineering (select the following 3 courses):</td>
<td></td>
<td></td>
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<tr>
<td>CIV5704 Road and Street Engineering</td>
<td></td>
<td></td>
<td></td>
<td>S2</td>
<td></td>
</tr>
<tr>
<td>CIV5705 Pavement Design and Analysis</td>
<td></td>
<td></td>
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<td>S1</td>
<td></td>
</tr>
<tr>
<td>URP4001 Movement Network Planning</td>
<td>S2</td>
<td></td>
<td></td>
<td>S2</td>
<td></td>
</tr>
<tr>
<td>Select 1 of the following courses:</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>CIV3603 Construction Methods</td>
<td></td>
<td></td>
<td></td>
<td>S2</td>
<td></td>
</tr>
<tr>
<td>ENV2201 Land Studies</td>
<td>S1</td>
<td>S1</td>
<td></td>
<td>S1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Majors: Agricultural or Environmental Engineering</th>
<th>Toowoomba (ONC)</th>
<th>Springfield (ONC)</th>
<th>External (EXT)</th>
<th>Online (ONL)</th>
<th>Enrolment requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor study: Climatology (select the following 4 courses):</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>CLI1110 Weather and Climate</td>
<td>S1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLI2201 Climate Change and Variability</td>
<td></td>
<td></td>
<td></td>
<td>S2</td>
<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Name</td>
<td>Duration</td>
<td></td>
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</tr>
<tr>
<td>CLI3301</td>
<td>Climate and Environment Risk Assessment</td>
<td>S1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLI3302</td>
<td>Adaptation to Climate Change</td>
<td>S2</td>
<td></td>
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</tr>
</tbody>
</table>

### Majors: Environmental or Power Engineering

- **Toowoomba (ONC)**
- **Springfield (ONC)**
- **External (EXT)**
- **Online (ONL)**
- **Enrolment requirements**

### Minor study: Geographic Information Systems (select 4 courses from the following list):

- **GIS1402 Geographic Information Systems**
  - S1
  - S1
  - S1, S3
- **GIS2405 Spatial Analysis and Modelling**
  - S2
- **GIS3406 Remote Sensing and Image Processing**
  - S2
- **CSC1401 Foundation Programming**
  - S1, S2, S3
  - S1, S2
  - S1, S2, S3
- **GIS3407 GIS Programming and Visualisation**
  - S1

### Footnotes

£ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024.

### Major: All except Mechanical or Mechatronic

- **Toowoomba (ONC)**
- **Springfield (ONC)**
- **External (EXT)**
- **Online (ONL)**
- **Enrolment requirements**

### Minor Study – Data Management:

- **CSC1401 Foundation Programming**
  - S1, S2, S3
  - S1, S2
  - S1, S2, S3
- **CSC3400 Database Systems**
  - S1
  - S1
  - S1, S3
- **CSC3501 Principles of Data Science and Visualisation**
  - S2
  - S2
  - S2
In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024.

Students are able to use ENG3104 Engineering Simulations and Computations to satisfy the Requisite Knowledge requirements of this course.

Footnotes

Required time limits
Students have a maximum of 10 years to complete this program.

Core courses

The courses that comprise the core studies program are shown in the following table:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Semester(s) Offered</th>
<th>Toowoomba</th>
<th>Springfield</th>
<th>External</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic Courses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG1002 Introduction to Engineering and Built</td>
<td>1,2</td>
<td>1,2</td>
<td></td>
<td>1,2</td>
<td></td>
</tr>
<tr>
<td>Environment Applications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG1004 Engineering Problem Solving Principles</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1,2</td>
<td></td>
</tr>
<tr>
<td>ENG1100 Introduction to Engineering Design</td>
<td>1,2</td>
<td>1,2</td>
<td></td>
<td>1,2</td>
<td></td>
</tr>
<tr>
<td>ENG2002 Technology, Sustainability and Society</td>
<td>1,2</td>
<td>1,2</td>
<td></td>
<td>1,2,3</td>
<td></td>
</tr>
<tr>
<td>ENG3003 Engineering Management†</td>
<td>1, 3, 1</td>
<td>1, 3</td>
<td></td>
<td>1,3</td>
<td></td>
</tr>
<tr>
<td>ENG3104 Engineering Simulations and Computations</td>
<td>2</td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ENG4110 Engineering Research Methodology</td>
<td>2</td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ENG4111 Research Project Part 1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ENG4112 Research Project Part 2</td>
<td>1,2</td>
<td>2</td>
<td></td>
<td>1,2</td>
<td></td>
</tr>
<tr>
<td>ENM1600 Engineering Mathematics</td>
<td>1,2</td>
<td>1,2</td>
<td></td>
<td>1,2</td>
<td></td>
</tr>
<tr>
<td>ENM2600 Advanced Engineering Mathematics§</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1, 3</td>
<td></td>
</tr>
<tr>
<td><strong>Practice Courses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG1901 Engineering Practice 1</td>
<td>1,2</td>
<td>1</td>
<td></td>
<td>2,3</td>
<td></td>
</tr>
<tr>
<td>ENG3902 Professional Practice 1</td>
<td></td>
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<tr>
<td>ENG4903 Professional Practice 2</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td>ENG4909 Work Experience - Professional</td>
<td></td>
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</tr>
</tbody>
</table>

Footnotes

† The Semester 3 offering of this course is offered in odd numbered years only.
§ Unavailable online in S3 2023

Major studies

The Bachelor of Engineering (Honours) consists of a core component and a series of major studies. All students must complete the core courses and one of the major studies. The major study provides students with knowledge and skills in a specific discipline. The major study areas in the UniSQ Bachelor of Engineering (Honours) are listed below. The Instrumentation Control and Automation Engineering major is designed for process technologists in industry who wish to upgrade their qualifications. As such, the program will normally be undertaken by external study.
<table>
<thead>
<tr>
<th>Major</th>
<th>On-Campus Toowoomba</th>
<th>On-Campus Springfield</th>
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**Agricultural Engineering major courses**

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**Approved courses (x4)**

**Practice Courses**

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## Computer Systems Engineering major courses

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<td>ELE3305</td>
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**Approved Courses (x6)**

**Practice Courses**

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<td>ELE3914</td>
<td>Electrical and Electronic Practice D</td>
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<td>ELE3915</td>
<td>Electrical and Electronic Practice E</td>
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**Footnotes**

£ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024
§ Unavailable online in S3 2023
– Unavailable in On-Campus mode in S2 2023
‡ Unavailable in External mode in S3 2023

**Electrical and Electronic Engineering major courses**

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<td>ELE3107 Signal Processing</td>
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## ELE3305 Computer Systems and Communications Protocols  
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## ELE4307 Real Time Systems  
## ELE3506 Electronic Measurement  
## ELE3803 Electrical Plant  
## ELE4605 Fields and Waves  
## ELE4606 Communication Systems  
## MEC1201 Engineering Materials  
Approved Courses (x5)  

### Practice Courses  

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Approved courses (x5)
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### Instrumentation Control and Automation Engineering major courses

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### Footnotes
- § Unavailable online in S3 2023
- ~ Unavailable in On-Campus mode in S2 2023
- ‡ Unavailable in External mode in S3 2023
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### Mechatronic Engineering major courses

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**Footnotes**

§ Unavailable online in S3 2023
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### Power Engineering major courses

#### Courses

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Electives/Approved courses

Appropriate approved courses in each major are shown in the tables in the Recommended Enrolment Pattern section. The Program Director may approve a variation in approved course studies where the student can demonstrate that there is a sound academic argument for the change. Arguments based on timetable difficulties, quota problems etc. will not normally be entertained. Note however that students who wish to enrol in a course other than those listed must obtain the written approval of the Program Director prior to enrolling in the course if they want the course to count as credit towards their award.

Students should note that quota restrictions may preclude their enrolment in particular approved courses as students enrolling in these courses as part of their core or major studies will be given enrolment priority.

Practical experience

To be eligible to graduate from the Bachelor of Engineering (Honours), students must obtain an aggregate of at least 60 days of suitable work experience during their program. This experience may be in an engineering office or laboratory where the student would be working principally with professional engineers and engineering associates. It may, however, be preferable for students to spend some time in field or factory activities to gain insight into industrial practice and to see what is involved in converting designs into finished products. Students are required to enrol in ENG4909 Work Experience - Professional in the latter part of their program and keep a record of appropriate experience as specified in the Course Specification. The work experience is to be endorsed by an appropriate person in the organisation providing the experience and submitted to the examiner. The student must meet all costs associated with the acquisition of work experience to satisfy this requirement. The record of work experience must be made available for perusal by the Faculty of Health, Engineering and Sciences upon request. The acceptability or otherwise of employment experience, and the period of that type of experience that may be credited towards the 60 days, will be determined by the Examiner of ENG4909 Work Experience - Professional.

Credit or exemptions for ENG4909 Work Experience - Professional will not normally be considered.
IT requirements
For information technology requirements, please refer to the minimum computing standards.

Residential schools
The attendance requirement of residential schools within this degree is indicated by the following letters: R = Recommended; HR = Highly Recommended; M = Mandatory. To find out more about residential schools, visit the Residential School Schedule to view specific dates for your degree, or visit the Policy and Procedure Library.

Students are required to undertake practical and professional activities relevant to their program through enrolment in a series of Practice courses in the program. Practice courses are zero unit courses that may be undertaken in either on-campus or external mode and the final grades available are Pass (P)/Fail (F) only. They are a compulsory part of the program and do not attract a student contribution charge for Australian residents or a tuition fee for international students. The recommended enrolment schedule for Practice courses is shown in the Recommended Enrolment Pattern for the program in this Handbook.

External students must attend a number of residential schools during their program to obtain experience in practical and professional activities appropriate to the program. The residential schools are included in Practice courses which are conducted in Semester 3 or during the recess periods. The dates for each residential school Practice course are shown in the Residential School Schedule in this Handbook and external students should ensure they are able to attend the residential school prior to enrolling in a Practice course. Personal protective equipment is compulsory in many engineering, construction and spatial science laboratories, students should confirm the requirements before attending residential schools for Practice courses.

Students who enrol in on-campus mode for Practice courses normally undertake a series of weekly activities and/or attend a compulsory residential school.

ENG3902 Professional Practice 1 and ENG4110 Engineering Research Methodology are to be studied in the student's penultimate year. Upon completion of ENG3902 Professional Practice 1 and ENG4110 Engineering Research Methodology, students must study ENG4111 Research Project Part 1, ENG4112 Research Project Part 2 and ENG4903 Professional Practice 2 in the same academic year.

Agricultural Engineering
- ENG1901 Engineering Practice 1
- CIV2901 Geology and Geomechanics Practice
- ENV2902 Hydraulics Practice
- AGR3903 Soil and Water Engineering Practice 2
- AGR3905 Agricultural Engineering Practice
- ENG3902 Professional Practice 1
- ENG4903 Professional Practice 2

Civil Engineering
- ENG1901 Engineering Practice 1
- CIV2901 Geology and Geomechanics Practice
- ENV2902 Hydraulics Practice
- CIV3906 Civil Materials Practice
- CIV3907 Civil Systems Practice
- CIV4908 Civil Design Practice
- ENG3902 Professional Practice 1
- ENG4903 Professional Practice 2

Computer Systems Engineering
- ENG1901 Engineering Practice 1
- ELE1911 Electrical and Electronic Practice A
- ELE2912 Electrical and Electronic Practice B
- ELE2913 Electrical and Electronic Practice C
- ELE3914 Electrical and Electronic Practice D
- ELE3915 Electrical and Electronic Practice E
- ENG3902 Professional Practice 1
- ENG4903 Professional Practice 2

Electrical and Electronic Engineering
- ENG1901 Engineering Practice 1
- ELE1911 Electrical and Electronic Practice A
- ELE2912 Electrical and Electronic Practice B
- ELE3914 Electrical and Electronic Practice D
- ELE3915 Electrical and Electronic Practice E
- ENG3902 Professional Practice 1
- ENG4903 Professional Practice 2
- CHE1110 Chemistry 1 (Elective)

Environmental Engineering
- ENG1901 Engineering Practice 1
- CIV2901 Geology and Geomechanics Practice
- ENV2902 Hydraulics Practice
- AGR2902 Field Practice
- ENV3904 Environmental Engineering Practice
- AGR3903 Soil and Water Engineering Practice 2
- ENG3902 Professional Practice 1
- ENG4903 Professional Practice 2
- CHE1110 Chemistry 1 (Elective)
- CHE2120 Chemistry 2 (Elective)

Instrumentation Control and Automation Engineering
- ENG1901 Engineering Practice 1
- ELE1911 Electrical and Electronic Practice A
- ELE2912 Electrical and Electronic Practice B
- ELE2913 Electrical and Electronic Practice C
- ELE3914 Electrical and Electronic Practice D
- MEC3905 Mechatronic Practice
- ENG3902 Professional Practice 1
- ENG4903 Professional Practice 2
- CHE1110 Chemistry 1 (Elective)

Mechanical Engineering
- ENG1901 Engineering Practice 1
- MEC2901 Mechanical Practice 1
- MEC2902 Mechanical Practice 2
- MEC3903 Mechanical Practice 3
- MEC3904 Mechanical Practice 4
- ENG3902 Professional Practice 1
- ENG4903 Professional Practice 2

Mechatronic Engineering
- ENG1901 Engineering Practice 1
- ELE1911 Electrical and Electronic Practice A
Consult the Handbook on the Web at https://www.unisq.edu.au/handbook/current for any updates that may occur during the year.
Bachelor of Engineering (Honours) (BENG) - BEng(Hons) (2023)

- MEC2901 Mechanical Practice 1
- MEC2902 Mechanical Practice 2
- MEC3905 Mechatronic Practice
- ENG3902 Professional Practice 1
- ENG4903 Professional Practice 2

Power Engineering
- ENG1901 Engineering Practice 1
- ELE1911 Electrical and Electronic Practice A
- ELE2912 Electrical and Electronic Practice B
- ELE2913 Electrical and Electronic Practice C
- ELE3914 Electrical and Electronic Practice D
- ELE3915 Electrical and Electronic Practice E
- ENG3902 Professional Practice 1
- ENG4903 Professional Practice 2
- CHE1110 Chemistry 1 (Elective)

Related programs
Students may combine the Bachelor of Engineering (Honours) with a program from another area of study. Currently the following combined programs have been accredited by the University and Engineers Australia:
- Bachelor of Engineering (Honours) Bachelor of Business
- Bachelor of Engineering (Honours) Bachelor of Information Technology
- Bachelor of Engineering (Honours) Bachelor of Science.

Exit points
Students who, for whatever reason, are unable to complete the Bachelor of Engineering (Honours) and who satisfy all of the requirements of either the Bachelor of Engineering Technology, the Associate Degree of Engineering or the Diploma of Engineering Studies may be permitted to exit with that award.

Credit
Exemptions/credit will be assessed based on the UniSQ Credit and Exemption Procedure.

Work Experience
Work and industrial experience that has not been formally assessed, does not normally qualify for course credit in the Bachelor of Engineering (Honours) program. Existing work experience may be used to satisfy the practical/work experience requirements when completing the ENG4909 Work Experience - Professional practice course.

Honours
The level of honours awarded will be determined based on the UniSQ procedure. Please refer to the Class of Honours Standard Schedule.

Agricultural Engineering major full-time recommended enrolment pattern
To satisfy the requirements of the program students must complete all of the Academic and Practice courses in the following table that shows the recommended enrolment patterns for on-campus and external students.
for our Toowoomba campus. Students following a non-standard enrolment pattern should click on the course link in the table below to ascertain if a course is offered in another term.

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*Pre-requisite: ENM1600 or (ENM1500 or CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR

*Pre-requisite: CIV1500 or MEPR or MSCN

*Pre-requisite: (ENG1100 or MEC2402) or Students must be enrolled in one of the following Programs: GCEN or GEPR

*Pre-requisite: (ENG1100 or MEC2402) or Students must be enrolled in one of the following Programs: GCEN or GEPR

**CRICOS: QLD 00244B, NSW 02225M | TEQSA: PRV12081**
Major study: Agricultural Engineering (Major Study Code: 16922)

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<td>Pre-requisite: Students must be enrolled in one of the following Programs: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH Undergraduate students must have com</td>
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<td><strong>Academic Courses Year 4</strong></td>
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<td>Pre-requisite: ENG3902 and ENG4110 and Students must be enrolled in one of the followi</td>
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Consult the Handbook on the Web at https://www.unisq.edu.au/handbook/current for any updates that may occur during the year.

Bachelor of Engineering (Honours) (BENG) - BEng(Hons) (2023)
### Major study: Agricultural Engineering (Major Study Code: 16922)

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<td>Pre-requisite: MEC2401 or ELE2103 or Students must be enrolled in one of the following Programs: MENS or GCEN</td>
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<td>Pre-requisite: (ENV3104 and ENV3105) or Students must be enrolled in one of the following Programs: GCEN</td>
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Select a minor study or approved courses from the following or other elective courses as approved by the Program Director.
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<th>Course</th>
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<td>ENV4203 Public Health Engineering</td>
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<td>ENV4204 Environmental Technology</td>
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<td>GIS1402 Geographic Information Systems</td>
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<td>MEC2202 Manufacturing Processes</td>
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<td>MEC2406 Introduction to Mechatronics and Automation</td>
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<td>MEC3203 Materials Technology</td>
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<td>CLI2201 Climate Change and Variability</td>
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<td>MEC3303 Mechanical and Mechatronic System Design</td>
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<td>REN1201 Environmental Studies</td>
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Footnotes

§ Unavailable online in S3 2023
^ The residential school for this course may involve overnight field trips for which each student will be responsible for their own accommodation costs.
† The semester 3 offering of this course is offered in odd numbered years only.
‡ The semester 3 offering of this course is offered in even numbered years only.
@ Students who wish to enrol in ENV4204 Environmental Technology as an Approved course, should consult their Program Director.
£ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024

Agricultural Engineering major part-time recommended enrolment pattern

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<tr>
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<tr>
<td>ENG1002 Introduction to Engineering and Built Environment Applications</td>
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</table>
Major study: Agricultural Engineering (Major Study Code: 16922)

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<td>Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed</td>
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<tr>
<td>ENG1100 Introduction to Engineering Design</td>
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<tr>
<td>CIV1501 Engineering Statics</td>
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<td>Pre-requisite: ENM1600 or (ENM1500 and CIV1500) Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR</td>
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Year 1 Practice Courses

<table>
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<tr>
<th>Course</th>
<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
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<th>Residential school</th>
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<tbody>
<tr>
<td>ENG1901 Engineering Practice 1</td>
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Year 2

<table>
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<tbody>
<tr>
<td>ENG1004 Engineering Problem Solving Principles</td>
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<td>MEC1201 Engineering Materials</td>
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<td>ENG2002 Technology, Sustainability and Society</td>
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<td>SVY1500 Spatial Science for Engineers</td>
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Year 3

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<th>Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MSCN</th>
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<tr>
<td>AGR2302 Agricultural Machinery</td>
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<td>ENM2600 Advanced Engineering Mathematics</td>
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<td>AGR2301 Agricultural Science</td>
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<td>ENG3104 Engineering Simulations and Computations</td>
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<td>Pre-requisite: (ENM2600 or MAT2100 or MAT2500) or Students must be enrolled in one of the following Programs: GDET or METC or GDNS or MENS</td>
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Year 3 Practice Courses

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Year 4

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<th>Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN or GEPR</th>
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<td>MEC2402 Stress Analysis</td>
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<td>Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCONS or GDNS or MENS or GEPR</td>
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<td>Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN or GEPR</td>
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<td>MEC2301 Design of Machine Elements</td>
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<td>Pre-requisite: (MEC2402 and ENG1100) or Students must not be enrolled in one of the following Programs: GCEN or METC or MEPR or MENS or GEPR</td>
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Bachelor of Engineering (Honours) (BENG) - BEng(Hons) (2023)
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<td>AGR3303 Agricultural Materials and Post-Harvest Technologies</td>
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**Major study: Agricultural Engineering (Major Study Code: 16922)**

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<td><strong>ENG4903 Professional Practice 2</strong></td>
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<td>Pre-requisite: ENG3902 and ENG4110 and Students must be enrolled in one of the following Programs: BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH Undergraduate students must have completed 22 units in their program.</td>
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<td><strong>ENG4909 Work Experience - Professional</strong></td>
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<th>Semester</th>
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<td>Pre-requisite: MEC2401 or ELE2103 or Students must be enrolled in one of the following Programs: MENS or GCEN</td>
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<tr>
<td>ENV4107 Water Resources Engineering</td>
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<td>Pre-requisite: ENV1101 or ENV2103 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<tr>
<td>ENV4203 Public Health Engineering</td>
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<td>2</td>
<td>Pre-requisite: ENV2105 or Students must be enrolled in one of the following Programs: PDEV or GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<tr>
<td>ENV4204 Environmental Technology</td>
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<td>Pre-requisite: ENV2105 or Students must be enrolled in one of the following Programs: PDEV or GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<tr>
<td>GIS1402 Geographic Information Systems</td>
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<tr>
<td>MEC2202 Manufacturing Processes</td>
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<td>Pre-requisite: MEC1201 or Students must be enrolled in one of the following Programs: MEPR or GCEN</td>
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<tr>
<td>MEC2406 Introduction to Mechatronics and Automation</td>
<td>2</td>
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<tr>
<td>MEC3203 Materials Technology</td>
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<td>Pre-requisite: MEC1201 or Students must be enrolled in one of the following Programs: GCEN or METC or GCNS or GDNS or MEPR or MENS</td>
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<tr>
<td>CLI2201 Climate Change and Variability</td>
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<tr>
<td>MEC3303 Mechanical and Mechatronic System Design</td>
<td>2</td>
<td>2</td>
<td>Pre-requisite: MEC2301 or Students must be enrolled in one of the following Programs: GCEN or METC or GCNS or GDNS or MEPR or MENS</td>
</tr>
<tr>
<td>REN1201 Environmental Studies</td>
<td>1</td>
<td>1</td>
<td>Enrolment is not permitted in REN1201 if REN8101 has been previously completed.</td>
</tr>
</tbody>
</table>

**Footnotes**

§ Unavailable online in S3 2023

^ The residential school for this course may involve overnight field trips for which each student will be responsible for their own accommodation costs.

† The semester 3 offering of this course is offered in odd numbered years only.

‡ The semester 3 offering of this course is offered in even numbered years only.

@ Students who wish to enrol in ENV4204 Environmental Technology as an Approved course, should consult their Program Director.

£ Civil Engineering major full-time recommended enrolment pattern (Toowoomba and Springfield campus)

To satisfy the requirements of the program students must complete all of the Academic and Practice courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should click on the course link in the table below to ascertain if a course is offered in another term.
Approved courses are included in the list of Academic courses. Students should select these courses from the approved courses listing.

<table>
<thead>
<tr>
<th>Course</th>
<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
<th>Enrolment requirements</th>
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<tbody>
<tr>
<td>ENG1002 Introduction to Engineering and Built Environment Applications</td>
<td>1</td>
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<tr>
<td>ENM1600 Engineering Mathematics</td>
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<td></td>
<td>Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed</td>
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<tr>
<td>ENG1004 Engineering Problem Solving Principles</td>
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<tr>
<td>MEC1201 Engineering Materials</td>
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<tr>
<td>ENG1100 Introduction to Engineering Design</td>
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<td></td>
<td>Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR</td>
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<tr>
<td>CIV1501 Engineering Statics</td>
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<td>M2,31,21 ENG1901 Engineering Practice 1</td>
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<tr>
<td>Academic Courses Year 2</td>
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<tr>
<td>ENM2600 Advanced Engineering Mathematics 6</td>
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<td>Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MSCN</td>
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<tr>
<td>ENV2103 Hydraulics I</td>
<td>2</td>
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<td></td>
<td></td>
<td>1</td>
<td></td>
<td>Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN or GEPR</td>
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<tr>
<td>MEC2402 Stress Analysis</td>
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<td>Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR</td>
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<tr>
<td>CIV2605 Construction Engineering</td>
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<td>Approved Course (Select from minor or approved course list)</td>
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<td>Pre-requisite: (ENM2600 or MAT2100 or MAT2500) or Students must be enrolled in one of the following Programs: GDET or METC or GDNS or MENS</td>
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<tr>
<td>ENG3104 Engineering Simulations and Computations</td>
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<td></td>
<td>Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN or GEPR</td>
</tr>
<tr>
<td>CIV2403 Geology and Geomechanics</td>
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### Major study: Civil Engineering (Major Study Code: 16923)

<table>
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<tr>
<th>Course</th>
<th>Year</th>
<th>Year</th>
<th>Sem</th>
<th>Sem</th>
<th>Year</th>
<th>Year</th>
<th>On-campus (ONC)</th>
<th>External (EXT)</th>
<th>Online (ONL)</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
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</thead>
<tbody>
<tr>
<td>CIV2503 Structural Design I</td>
<td>2</td>
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<td>2</td>
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<td></td>
<td>Pre-requisite: (ENG1100 and MEC2402) or (ENG1100 and CIV1501) for students enrolled in one of the following: BETC Infrastructure Management major or BENS Infrastructure Management Engineering major) or Students must be enrolled in: GCEN or GEPR</td>
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</table>

**Practice Courses Year 2**

<table>
<thead>
<tr>
<th>Course</th>
<th>Year</th>
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<th>Year</th>
<th>M</th>
<th>Pre-requisite or Co-requisite:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIV2901 Geology and Geomechanics Practice</td>
<td>2</td>
<td>2</td>
<td>2,3</td>
<td>M</td>
<td>ENG1901 and CIV2403</td>
</tr>
<tr>
<td>ENV2902 Hydraulics Practice</td>
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<td>1,2,3</td>
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<td>ENV2103 or ENV1101</td>
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**Academic Courses Year 3**

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<th>Course</th>
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<th>Year</th>
<th>Year</th>
<th>Pre-requisite:</th>
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<tr>
<td>ENV3104 Hydraulics II</td>
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<td>ENV1101 or ENV2103 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<tr>
<td>CIV4505 Structural Analysis</td>
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<td>1</td>
<td>1</td>
<td>Pre-requisite: MEC2402 and (MAT1502 or ENM1600 or MAT1102) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<tr>
<td>CIV4506 Concrete Structures</td>
<td>3</td>
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<td>Pre-requisite: CIV2503 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<tr>
<td>ENG3003 Engineering Management†</td>
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<tr>
<td>CIV3403 Geotechnical Engineering</td>
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<td>Pre-requisite: CIV2401 or CIV2403 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<td>ENV3105 Hydrology</td>
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<td>CIV3703 Transport Engineering</td>
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<td>ENG4110 Engineering Research Methodology</td>
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**Practice Courses Year 3**

<table>
<thead>
<tr>
<th>Course</th>
<th>Year</th>
<th>Year</th>
<th>Year</th>
<th>M</th>
<th>Pre-requisite:</th>
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<tr>
<td>CIV3906 Civil Materials Practice</td>
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<td>MEC1201 and ENG1901 or Students must be enrolled in one of the following programs: ADCN or BCON or BCNH</td>
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<tr>
<td>CIV3907 Civil Systems Practice</td>
<td>3</td>
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<td>Pre-requisite: CIV2503 or Students must be enrolled in one of the following Programs: MENS or MEPR</td>
</tr>
<tr>
<td>Course</td>
<td>Year</td>
<td>Sem</td>
<td>External</td>
<td>Year</td>
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<td>ENG3902 Professional Practice 1</td>
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<td>Academic Courses Year 4</td>
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<td>CIV4508 Structural Design II</td>
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<td>ENG4111 Research Project Part 1</td>
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<td>1</td>
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<tr>
<td>Approved Courses (Select from minor or approved course list)</td>
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<td>ENV4203 Public Health Engineering</td>
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<td>ENG4112 Research Project Part 2</td>
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<td>Approved Course (Select from minor or approved course list)</td>
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<td>Practice Courses Year 4</td>
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<td>CIV4908 Civil Design Practice</td>
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<tr>
<td>ENG4903 Professional Practice 2</td>
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</tr>
<tr>
<td>Course</td>
<td>Year of program and semester in which course is normally studied</td>
<td>Residental school</td>
<td>Enrolment requirements</td>
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<tr>
<td></td>
<td>On-campus (ONC)</td>
<td>External (EXT)</td>
<td>Online (ONL)</td>
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<td>Year</td>
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<td>Year</td>
<td>Sem</td>
<td>Year</td>
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<tr>
<td>ENG3909 Work Experience - Professional</td>
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</table>

Select a minor study or approved courses from the following or other elective courses as approved by the Program Director:

- **AGR3304 Soil Science**
- **CIV3603 Construction Methods**
- **CIV5704 Road and Street Engineering**
- **CIV5705 Pavement Design and Analysis**
- **MEC5100 Computational Fluid Dynamics**
- **ENG4004 Engineering Project and Operations Management**
- **ENV2201 Land Studies**
- **ENV4107 Water Resources Engineering**
- **ENV4204 Environmental Technology**
- **GIS1402 Geographic Information Systems**
- **MEC2401 Dynamics I**
- **SVY1104 Survey Computations A**
- **URP3201 Sustainable Urban Design and Development**
- **URP1001 Introduction to Urban and Regional Planning**

**Footnotes**

§ Unavailable online in S3 2023
† The semester 3 offering of this course is offered in odd numbered years only.
The semester 3 offering of this course is offered in even numbered years only.

@ Students who wish to enrol in ENV4204 Environmental Technology as an Approved course, should consult their Program Director.

£ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024

Civil Engineering major part-time recommended enrolment pattern (Toowoomba and Springfield campus)

<table>
<thead>
<tr>
<th>Course</th>
<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
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</thead>
<tbody>
<tr>
<td>ENG1002 Introduction to Engineering and Built Environment Applications</td>
<td>1,2</td>
<td></td>
<td>1,2</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>On-campus (ONC)</td>
<td>Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed</td>
</tr>
<tr>
<td>ENM1600 Engineering Mathematics</td>
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<td></td>
<td>1,2</td>
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<td>Online (ONL)</td>
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<tr>
<td>ENG1100 Introduction to Engineering Design</td>
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<td>1,2</td>
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<td></td>
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<td>External (EXT)</td>
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<td>CIV1501 Engineering Static</td>
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<td>Residential school</td>
<td>Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR</td>
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</table>

Year 2 Practice Courses

<table>
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<th>Year</th>
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<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
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<tbody>
<tr>
<td>ENG1901 Engineering Practice 1</td>
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Year 3

<table>
<thead>
<tr>
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<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
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<tbody>
<tr>
<td>ENM2600 Advanced Engineering Mathematics</td>
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<td>3</td>
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<td>On-campus (ONC)</td>
<td>Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MSCN</td>
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<tr>
<td>ENV2103 Hydraulics I</td>
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<td>Residential school</td>
<td>Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN or GEPR</td>
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Approved Course (Select from minor or approved course list)

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<th>Course</th>
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<th>Sem</th>
<th>Year</th>
<th>Sem</th>
<th>Year</th>
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<th>Year</th>
<th>Sem</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
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<tbody>
<tr>
<td>ENG3104 Engineering Simulations and Computations</td>
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<td>2</td>
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<td>M</td>
<td>Pre-requisite: (ENM2600 or MAT2100 or MAT2500) or Students must be enrolled in one of the following Programs: GDET or METC or GDNS or MENS</td>
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Year 3 Practice Courses

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<th>Enrolment requirements</th>
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<td>Pre-requisite or Co-requisite: ENV2103 or ENV1101</td>
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<tr>
<td>Course</td>
<td>Year</td>
<td>Semester</td>
<td>On-campus (ONC)</td>
<td>External (EXT)</td>
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<tr>
<td>MEC2402 Stress Analysis</td>
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<td>Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR</td>
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<tr>
<td>CIV2605 Construction Engineering</td>
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<tr>
<td>CIV2403 Geology and Geomechanics</td>
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<td>Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN or GEPR</td>
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<tr>
<td>CIV2503 Structural Design I</td>
<td>2</td>
<td>2</td>
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<td></td>
<td></td>
<td>Pre-requisite: (ENG1100 and MEC2402) or (ENG1100 and CIV1501) for students enrolled in one of the following: BETC Infrastructure Management major or BENS Infrastructure Management Engineering major or Students must be enrolled in: GCEN or GEPR</td>
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</table>

**Year 4 Practice Courses**

| CIV2901 Geology and Geomechanics Practice | 2    | 2,3 | M   | Pre-requisite or Co-requisite: ENG1901 and CIV2403 |

**Year 5**

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<thead>
<tr>
<th>ENV3104 Hydraulics II</th>
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<th></th>
<th>Pre-requisite: ENV1101 or ENV2103 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</th>
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<tbody>
<tr>
<td>CIV4505 Structural Analysis</td>
<td>1</td>
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<td></td>
<td>Pre-requisite: MEC2402 and (MAT1502 or ENM1600 or MAT1102) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR</td>
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<tr>
<td>CIV3403 Geotechnical Engineering</td>
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<td>Pre-requisite: CIV2401 or CIV2403 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<tr>
<td>ENV3105 Hydrology</td>
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</tbody>
</table>

**Year 5 Practice Courses**

| CIV3906 Civil Materials Practice     | 1    | 3        | M   | Pre-requisite: MEC1201 and ENG1901 or Students must be enrolled in one of the following programs: ADCN or BCON or BCNH |

Consult the Handbook on the Web at https://www.unisq.edu.au/handbook/current for any updates that may occur during the year. Bachelor of Engineering (Honours) (BENG) - BEng(Hons) (2023)
<table>
<thead>
<tr>
<th>Year 6</th>
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<tbody>
<tr>
<td><strong>CIV4506 Concrete Structures</strong></td>
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<tr>
<td><strong>ENG3003 Engineering Management†</strong></td>
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<tr>
<td><strong>CIV3703 Transport Engineering</strong></td>
<td></td>
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<tr>
<td>Approved Course (Select from minor or approved course list)</td>
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### Year 6 Practice Courses

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<tr>
<td><strong>CIV3907 Civil Systems Practice</strong></td>
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### Year 7

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<tr>
<td><strong>CIV4508 Structural Design II</strong></td>
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<tr>
<td><strong>ENG4110 Engineering Research Methodology</strong></td>
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<tr>
<td><strong>ENV4203 Public Health Engineering</strong></td>
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### Year 7 Practice Courses

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<tr>
<td><strong>ENG3902 Professional Practice 1</strong></td>
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### Year 8

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<tbody>
<tr>
<td><strong>ENG4111 Research Project Part 1</strong></td>
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<tr>
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</table>
### Major study: Civil Engineering (Major Study Code: 16923)

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<th>Year of program and semester in which course is normally studied</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
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<td>External (EXT)</td>
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<td>ENG4112 Research Project Part 2</td>
<td>1,2</td>
<td>Year</td>
<td>1,2</td>
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</table>

### Approved Course (Select from minor or approved course list)

#### Year 8 Practice Courses

**CIV4908 Civil Design Practice**
- Year 8
- Pre-requisite: ENG4111 and Students must be enrolled in the following Program: M1,2 CIV4908 Civil Design Practice following Program: MEPR or MENS

**ENG4903 Professional Practice 2**
- Year 8
- Pre-requisite: ENG3902 and Students must be enrolled in: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH or MENS. Students cannot enrol in ENG3902 & ENG4903 in the same semester. Co-requisite: ENG4111 or ENG4112 or ENG4811 or ENG4812

**ENG4908 Work Experience - Professional**
- Year 8
- Pre-requisite: ENG3902 and Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or PGCN or GCAE or MEPR

Select a minor study or approved courses from the following or other elective courses as approved by the Program Director

- **AGR3304 Soil Science**
  - Pre-requisite: CIV3506 or CIV4506 or (MEC2402 and MEC3203)
- **CIV4803 Mechanics and Technology of Fibre Composites**
  - Pre-requisite: CIV3506 or CIV4506 or (MEC2402 and MEC3203)
- **CIV5704 Road and Street Engineering**
  - Pre-requisite: CIV3703 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or PGCN or GCAE or MEPR
- **CIV5705 Pavement Design and Analysis**
  - Pre-requisite: CIV3703 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or PGCN or GCAE or MEPR
- **MEC5100 Computational Fluid Dynamics**
  - Pre-requisite: MEC3107 or MEC3102 or MEC4108 or MEC5107 or ENV3104 or ENV5104 or Students must be enrolled in the following Program: MEPR
- **ENG4004 Engineering Project and Operations Management†**
  - Pre-requisite: (ENV3104 and ENV3105) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS
- **ENV2201 Land Studies**
  - Pre-requisite: (ENV3104 and ENV3105) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS
- **ENV4107 Water Resources Engineering**
  - Pre-requisite: (ENV3104 and ENV3105) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS
- **ENV4204 Environmental Technology§**
  - Pre-requisite: ENV2105 or Students must be enrolled in
<table>
<thead>
<tr>
<th>Course</th>
<th>Year of program and semester in which course is normally studied</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
</tr>
</thead>
<tbody>
<tr>
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<td>On-campus (ONC)</td>
<td>External (EXT)</td>
<td>Online (ONL)</td>
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<tr>
<td></td>
<td>Year</td>
<td>Sem</td>
<td>Year</td>
</tr>
<tr>
<td>GIS1402 Geographic Information Systems £</td>
<td>1</td>
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<tr>
<td>MEC2401 Dynamics I</td>
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<td>1</td>
<td>Pre-requisite: ((MAT1502 or MAT1102 or ENM1600) and CIV1501) or Students must be enrolled in one of the following Programs: GCEN or GCNS or METC or MEPR or MENS or GEPR</td>
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<tr>
<td>SVY1104 Survey Computations A</td>
<td>2</td>
<td>2</td>
<td>Pre-requisite: SVY1102 or SVY1500 or Students must be enrolled in one of the following Programs: GCST or GDST or MSPT</td>
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<tr>
<td>URP3201 Sustainable Urban Design and Development</td>
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<tr>
<td>URP1001 Introduction to Urban and Regional Planning</td>
<td>1</td>
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</tbody>
</table>

Footnotes

§   Unavailable online in S3 2023
†   The semester 3 offering of this course is offered in odd numbered years only.
‡   The semester 3 offering of this course is offered in even numbered years only.
@   Students who wish to enrol in ENV4204 Environmental Technology as an Approved course, should consult their Program Director.
£   In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024

Computer Systems Engineering major full-time recommended enrolment pattern

To satisfy the requirements of the program students must complete all of the Academic and Practice courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should click on the course link in the table below to ascertain if a course is offered in another term.

<table>
<thead>
<tr>
<th>Course</th>
<th>Academic Courses Year 1</th>
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<tbody>
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<td>Year of program and semester in which course is normally studied</td>
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<td>On-campus (ONC)</td>
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<td>Year</td>
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<tr>
<td>ENM1600 Engineering Mathematics</td>
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<tr>
<td>ENG1004 Engineering Problem Solving Principles</td>
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<tr>
<td>ELE1301 Computer Engineering</td>
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<tr>
<td>ELE1502 Electronic Circuits</td>
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<tr>
<td>ENG1002 Introduction to Engineering and Built Environment Applications</td>
<td>1</td>
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<tr>
<td>CSC1401 Foundation Programming £</td>
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<tr>
<td>ELE1801 Electrical Technology £</td>
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</table>

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<th>Year</th>
<th>Semester</th>
<th>Residential School</th>
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<td><strong>Major study: Computer Systems Engineering (Major Study Code: 16924)</strong></td>
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<td><strong>Course</strong></td>
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<td><strong>Year</strong></td>
<td><strong>Sem</strong></td>
<td><strong>Residential school</strong></td>
<td><strong>Enrolment requirements</strong></td>
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<td><strong>Practice Courses Year 1</strong></td>
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<tr>
<td>ENG1100 Introduction to Engineering Design</td>
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<td>Lowering Programs: MEPR or GCEN or GEPR</td>
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<td><strong>Academic Courses Year 2</strong></td>
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<tr>
<td>ENM2600 Advanced Engineering Mathematics $^6$</td>
<td>2</td>
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<td>Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MSCN</td>
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<td>ELE2303 Embedded Systems Design</td>
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<td>Pre-requisite: ELE1301</td>
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<tr>
<td>CSC2402 Object-Oriented Programming in C++</td>
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<td>Pre-requisite: CSC1401 or Students must be enrolled in one of the following Programs: GDTI or GCSC or GCEN or METC or MCOT or MCTE or MCOP or MPIT or MCTN</td>
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<tr>
<td>MAT1101 Discrete Mathematics for Computing</td>
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<td>ELE2103 Linear Systems and Control</td>
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<tr>
<td>ENG2002 Technology, Sustainability and Society</td>
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<td>ENG3104 Engineering Simulations and Computations</td>
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<td>Pre-requisite: (ENM2600 or MAT2100 or MAT2500) or Students must be enrolled in one of the following Programs: GDTS or METC or MENS or MENS</td>
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<tr>
<td>ELE2912 Electrical and Electronic Practice B $^#$</td>
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<td>Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDTS or MENS</td>
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<td>ELE2913 Electrical and Electronic Practice C</td>
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<td>Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDTS or MENS</td>
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<td><strong>Academic Courses Year 3</strong></td>
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<td>ELE2601 Telecommunications Principles</td>
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<td>Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDTS or METC or GEP</td>
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<tr>
<td>ELE3105 Computer Controlled Systems</td>
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<td>Pre-requisite: ELE2103 or Students must be enrolled in one of the following Programs: GDTS or GCEN or GDNS</td>
</tr>
</tbody>
</table>

Consult the Handbook on the Web at https://www.unisq.edu.au/handbook/current for any updates that may occur during the year.
Bachelor of Engineering (Honours) (BENH) - BEng(Hons) (2023)

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<th>Year</th>
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<th>Year</th>
<th>Sem</th>
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<th>Enrolment requirements</th>
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<tr>
<td>ELE3305 Computer Systems and Communications Protocols</td>
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<td>or MEPR or MENS or METC or GEPR</td>
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<td>Pre-requisite: ELE1301 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or MEPR</td>
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<td>ELE4307 Real Time Systems</td>
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<td>Pre-requisite: ELE1301 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or MEPR</td>
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<td>Pre-requisite: ELE1301 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or MEPR</td>
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<td>ELE3107 Signal Processing</td>
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<td>Pre-requisite: ELE1301 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or MEPR</td>
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<td>ENG4110 Engineering Research Methodology</td>
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<td>Pre-requisite: ELE1301 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or MEPR</td>
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<td>Pre-requisite: ELE1801 and ELE1301 and ELE1502 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or MEPR</td>
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<td>ELE3914 Electrical and Electronic Practice D</td>
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<td>Pre-requisite: ELE1801 and ELE1301 and ELE1502 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or MEPR</td>
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<td>ELE3915 Electrical and Electronic Practice E</td>
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<td>Pre-requisite: ELE1801 and ELE1301 and ELE1502 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or MEPR</td>
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<td>ENGB902 Professional Practice 1</td>
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<td>Pre-requisite: Students must be enrolled in one of the following Programs: BCN or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENG or MENS</td>
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<tr>
<td><strong>Academic Courses Year 4</strong></td>
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<td>Pre-requisite: ENG3902 and ENG4110 and Students must be enrolled in one of the following Programs: BCN or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENG or MENS Undergraduate students must have completed 22 units in their program.</td>
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<td>Approved Course (Select from minor or approved course list)</td>
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<td>Pre-requisite: CSC1401</td>
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<tr>
<td>CSC2408 Software Development Tools</td>
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<td>Pre-requisite: CSC1401</td>
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<td>ENGB903 Engineering Management[^1]</td>
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Practice Courses Year 4

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© University of Southern Queensland
CRICOS: QLD 00244B, NSW 02225M | TEQSA: PRV12081 This version produced 28 Sep 2023.
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<td>ELE3506 Electronic Measurement</td>
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<td>ELE4607 Advanced Digital Communications</td>
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<td>MEC4406 Robotics and Machine Vision</td>
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Footnotes

£ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024

§ Unavailable online in S3 2023
## Computer Systems Engineering major part-time recommended enrolment pattern

To satisfy the requirements of the program students must complete all of the Academic and Practice courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should click on the course link in the table below to ascertain if a course is offered in another term.

<table>
<thead>
<tr>
<th>Major study: Computer Systems Engineering (Major Study Code: 16924)</th>
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<tbody>
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<td>Course</td>
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<tr>
<td><strong>Year 1</strong></td>
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<tr>
<td>ENM1600 Engineering Mathematics</td>
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<tr>
<td>ENG1004 Engineering Problem Solving Principles</td>
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<td>ELE1301 Computer Engineering</td>
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<td>ELE1502 Electronic Circuits</td>
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<tr>
<td><strong>Year 1 Practice Courses</strong></td>
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<tr>
<td>ENG1901 Engineering Practice 1</td>
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<td><strong>Year 2</strong></td>
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<tr>
<td>ENG1002 Introduction to Engineering and Built Environment Applications</td>
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<tr>
<td>CSC1401 Foundation Programming</td>
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<tr>
<td>ELE1801 Electrical Technology</td>
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<tr>
<td>ENG1100 Introduction to Engineering Design</td>
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<td><strong>Year 2 Practice Courses</strong></td>
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<tr>
<td>ELE1911 Electrical and Electronic Practice A</td>
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<td><strong>Year 3</strong></td>
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<tr>
<td>ENM2600 Advanced Engineering Mathematics</td>
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<tr>
<td>ELE2303 Embedded Systems Design</td>
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<tr>
<td>ELE2103 Linear Systems and Control</td>
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<tr>
<td>ENG2002 Technology, Sustainability and Society</td>
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<td><strong>Year 3 Practice Courses</strong></td>
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<td>ELE2912 Electrical and Electronic Practice B</td>
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## Major study: Computer Systems Engineering (Major Study Code: 16924)

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<td><strong>Year 4</strong></td>
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<tr>
<td>CSC2402 Object-Oriented Programming in C++</td>
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<td>MAT1101 Discrete Mathematics for Computing</td>
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<td>ENG3104 Engineering Simulations and Computations</td>
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<td>Pre-requisite: (ENM2600 or MAT2100 or MAT2500) or Students must be enrolled in one of</td>
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<td>ELE2913 Electrical and Electronic Practice C</td>
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<td>the following Programs: GCEN or METC or GEPR</td>
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<td><strong>Year 5</strong></td>
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<td>ELE2601 Telecommunications Principles</td>
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<td>ELE3105 Computer Controlled Systems</td>
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<td>Pre-requisite: ELE2103 or Students must be enrolled in one of the following Programs:</td>
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<td>ELE4307 Real Time Systems</td>
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<td>ELE3914 Electrical and Electronic Practice D</td>
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<td>ELE3305 Computer Systems and Communications Protocols</td>
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#### Year 6 Practice Courses

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#### Year 7 Practice Courses

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#### Year 8

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<td>ENG3003 Engineering Management†</td>
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Approved Course (Select from minor or approved course list)

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#### Year 8 Practice Courses

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[Bachelor of Engineering (Honours) (BENH) - BEng(Hons) (2023)](https://www.unisq.edu.au/handbook/current)
Major study: Computer Systems Engineering (Major Study Code: 16924)

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<th>Course</th>
<th>Year of program and semester in which course is normally studied</th>
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<td>Year</td>
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<td>Year</td>
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<td>BEBC or BEHB or BEHI or BEHS or BENG or BENH or MENS. Students cannot enrol in ENG3902 &amp; ENG4903 in the same semester. Co-requisite: ENG4111 or ENG4112 or ENG8411 or ENG8412</td>
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<tr>
<td>ENG4909 Work Experience - Professional</td>
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Select a minor study or approved courses from the following or other elective courses as approved by the Program Director

**CSC3400 Database Systems**
- Year: 1
- Semester: 1, 3
- Pre-requisite: CSC1401 or CIS1000
- Enrolment is not permitted in CSC3400 if CIS2002 has been previously completed.

**CSC3403 Comparative Programming Languages**
- Year: 1
- Semester: 1
- Pre-requisite: CSC2408; and Pre-requisite or Co-requisite: CSC2402; Students must be enrolled in one of the following Programs: GDTI or GCSC or GCEN or METC or MCOT or MCTE or MCOP or MPIT
- Enrolment is not permitted in CSC3403 if CIS3001 has been previously completed.

**CSC1310 Networking 1: Internetworking**
- Year: 1, 2
- Semester: 1, 2
- Pre-requisite: CSC1050

**CSC3412 System and Security Administration**
- Year: 1
- Semester: 1
- Pre-requisite: CSC2408

**CSC3413 Network Design and Analysis**
- Year: 2
- Semester: 2
- Pre-requisite: CSC3412

**CSC3420 Mobile Internet Technology**
- Year: 1
- Semester: 1
- Pre-requisite: CSC3407 or Students must be enrolled in one of the following Programs: GDTI or GCSC or GCEN or METC or MCOT or MCTE or MCOP or MPIT

**CSC3427 Switching, Wireless and WAN Technologies**
- Year: 2
- Semester: 2
- Pre-requisite: CSC3407 or CSC1310 or Students must be enrolled in one of the following Programs: GDTI or GCSC or GCEN or METC or MCOT or MCTE or MCOP or MPIT

**ELE2504 Electronic Design and Analysis**
- Year: 2
- Semester: 2
- Pre-requisite: ELE1502 or Students must be enrolled in one of the following Programs: MEPR or GDNS or MENS or GCNS or GCEN or GEPR
- Students cannot enrol in ELE2503 and ELE2504 in the same semester

**ELE3506 Electronic Measurement**
- Year: 2
- Semester: 2
- Pre-requisite: (ELE1502 and (ELE2101 or ELE2103) and (ELE2503 or ELE2504)) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or MENS
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<tr>
<th>Course</th>
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<td>Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<td>ELE4606 Communication Systems</td>
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<td>Pre-requisite: (ELE2504 and ELE2601) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or MENS or GCNS or GDNS</td>
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<td>Pre-requisite: ELE2103 or MEC2401 or Students must be enrolled in one of the following Programs: MENS or GCEN</td>
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<td>Pre-requisite: ELE2103 or MEC2401 or Students must be enrolled in one of the following Programs: MENS or GCEN</td>
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Footnotes:

£ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024
§ Unavailable online in S3 2023
~ Unavailable in On-Campus mode in S2 2023
† The semester 3 offering of this course is offered in odd numbered years only.
‡ The semester 3 offering of this course is offered in even numbered years only.

**Electrical and Electronic Engineering major full-time recommended enrolment pattern (Toowoomba and Springfield campus)**

To satisfy the requirements of the program students must complete all of the Academic and Practice courses in the following table that shows the recommended enrolment patterns for on-campus and external students.
for our Toowoomba campus. Students following a non-standard enrolment pattern should click on the course link in the table below to ascertain if a course is offered in another term.

<table>
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<tr>
<th>Course</th>
<th>Year</th>
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<th>Enrolment requirements</th>
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<td>ENG3104 Engineering Simulations and Computations</td>
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### Academic Courses Year 4

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<td>ELE4606 Communication Systems</td>
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<td>Pre-requisite: ([ELE2504 and ELE2601] or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or MENS or GCNS or GDNS</td>
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<td>ENG4112 Research Project Part 2</td>
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<td>Pre-requisite: ENG4111 and Students must be enrolled in one of the following Programs: BCN or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH</td>
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### Practice Courses Year 4

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<td>ENG4903 Professional Practice 2</td>
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<td>Pre-requisite: ENG3902 and Students must be enrolled in: BCN or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH. Students cannot enrol in ENG3902 &amp; ENG4903 in the same semester. Co-requisite: ENG4111 or ENG4112 or ENG8411 or ENG8412</td>
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<td>ENG4909 Work Experience - Professional</td>
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Select a minor study or approved courses from the following or other elective courses as approved by the Program Director

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<tr>
<td>ELE2704 Electricity Supply Systems</td>
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<td>Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: MEPR or GCEN or METC or GEPR</td>
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<td>ELE4804 Power Systems Protection</td>
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<td>ELE3805 Power Electronics Principles and Applications</td>
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<td>Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<td>ELE4807 Power Systems Analysis</td>
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<td>ELE4109 Measurement Science and Instrument Engineering</td>
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<td>ELE4607 Advanced Digital Communications</td>
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<td>ELE5001 Industrial Communications Protocols</td>
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<td>Pre-requisite: ELE2601 or Students must be enrolled in the following Program: GCN S, GDNS, MENS or MEPR</td>
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<tr>
<td>CSC1401 Foundation Programming*</td>
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<td>CSC2402 Object-Oriented Programming in C++</td>
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<tr>
<td>CIV1501 Engineering Statics</td>
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<td>MEC2106 Introduction to Thermofluids</td>
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<td>MEC2401 Dynamics I</td>
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<td>Pre-requisite: (MAT1502 or MAT1102 or ENM1600) and CIV1501) or Students must be enrolled in one of the following Programs: GCEN or GCNS or METC or MEPR or MENS or GEPR</td>
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### Major study: Electrical and Electronic Engineering (Major Study Code: 16925)

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<td>MEC2501 Process Control Systems</td>
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<td>(MEC1501 and ELE2101 as</td>
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<td>MEC3204 Production Engineering</td>
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<td>MEC4406 Robotics and Machine Vision</td>
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<td>ENG4004 Engineering Project and</td>
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<tr>
<td>Operations Management‡</td>
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<td>CHE1110 Chemistry †</td>
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**Footnotes**
- § Unavailable online in S3 2023
- § Unavailable in On-Campus mode in S2 2023
- # Unavailable in External mode in S3 2023
- † The semester 3 offering of this course is offered in odd numbered years only.
- * Offered in odd years only e.g. 2021, 2023 etc
- £ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024
- ‡ The semester 3 offering of this course is offered in even numbered years only.
- ^=CHE1110 Chemistry 1 has a highly recommended residential school requirement in External mode.

### Electrical and Electronic Engineering major part-time recommended enrolment pattern (Toowoomba and Springfield campus)

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<tr>
<th>Year</th>
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<tr>
<td>1</td>
<td>ENM1600 Engineering Mathematics</td>
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<td>Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed</td>
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<td>ENG1004 Engineering Problem Solving Principles</td>
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<td>ENG1002 Introduction to Engineering and Built Environment Applications</td>
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### Major study: Electrical and Electronic Engineering (Major Study Code: 16925)

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#### Year 1 Practice Courses

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#### Year 2

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<td>ELE1301 Computer Engineering</td>
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<td>ELE1502 Electronic Circuits</td>
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<td>ELE1801 Electrical Technology§</td>
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<td>Pre-requisite: ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR</td>
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<td>ENG1100 Introduction to Engineering Design</td>
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#### Year 2 Practice Courses

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<tr>
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#### Year 3

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<td>Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MSCN</td>
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<td>ELE2303 Embedded Systems Design</td>
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<td>ELE2103 Linear Systems and Control</td>
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<td>ELE4307 Real Time Systems</td>
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<td>Pre-requisite: ELE1301 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or MEPR</td>
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#### Year 3 Practice Courses

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<td>ELE2912 Electrical and Electronic Practice B§#</td>
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<td>Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDNS or MENS</td>
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#### Year 4

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<td>ENG2002 Technology, Sustainability and Society</td>
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<td>Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or METC or GEPR</td>
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<td>ELE2601 Telecommunications Principles</td>
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<td>Pre-requisite: (ENM2600 or MAT2100 or MAT2500) or Students must be enrolled in one of the following Programs: GDET or METC or GDNS or MENS</td>
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<td>Pre-requisite: ELE1502 or Students must be enrolled in one of the following Programs: MEPR or GDNS or MENS</td>
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Bachelor of Engineering (Honours) (BENGH) - BEng(Hons) (2023)
### Major study: Electrical and Electronic Engineering (Major Study Code: 16925)

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<tr>
<td>ELE2913 Electrical and Electronic Practice C</td>
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<td>Year 4 Practice Courses</td>
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<td>ELE3803 Electrical Plant</td>
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<tr>
<td>ELE3305 Computer Systems and Communications Protocols</td>
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<tr>
<td>ELE3506 Electronic Measurement</td>
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<td>Pre-requisite: (ELE1502 and ELE2101 or ELE2103) and (ELE2503 or ELE2504) or Students must be enrolled in one of the following Program(s): GCEN or METC or MEPR or MENS</td>
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### Year 5 Practice Courses

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<tr>
<td>ELE3914 Electrical and Electronic Practice D</td>
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<td>Pre-requisite: (ELE1801 and ELE1301 and ELE1502) or Students must be enrolled in one of the following Program(s): MENS or MEPR</td>
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### Year 6

<table>
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<td>ELE3105 Computer Controlled Systems</td>
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<td>ELE3107 Signal Processing</td>
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### Year 6 Practice Courses

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<td>ELE3915 Electrical and Electronic Practice E</td>
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Major study: Electrical and Electronic Engineering (Major Study Code: 16925)

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<tr>
<td>ELE4605 Fields and Waves</td>
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<td>Pre-requisite: {(MAT1502 or ENM1600) and ELE2103 and ELE2601} or Students must be enrolled in one of the following Programs: MEPR or MENS or GCNS or GDNS</td>
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<td>ENG4110 Engineering Research Methodology</td>
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<td>Pre-requisite: (ELE2504 and ELE2601) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or MENS or GCNS or GDNS</td>
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<td>ELE4606 Communication Systems</td>
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<td>ENG3902 Professional Practice 1</td>
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<td>Pre-requisite: Students must be enrolled in one of the following Programs: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH or MENS</td>
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<td>ENG3003 Engineering Management†</td>
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<td>Pre-requisite: ENG3902 and ENG4110 and Students must be enrolled in one of the following Programs: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH Undergraduate students must have completed 22 units in their program.</td>
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<td>ENG4112 Research Project Part 2</td>
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<td>Pre-requisite: ENG4111 and Students must be enrolled in one of the following Programs: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH</td>
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<td><strong>Year 8 Practice Courses</strong></td>
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<tr>
<td>ENG4903 Professional Practice 2</td>
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<td>Pre-requisite: ENG3902 and Students must be enrolled in: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH or MENS. Students cannot enrol in ENG3902 &amp; ENG4903 in the same semester. Co-requi</td>
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## Major study: Electrical and Electronic Engineering (Major Study Code: 16925)

<table>
<thead>
<tr>
<th>Course</th>
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<th>Semester</th>
<th>Year</th>
<th>Semester</th>
<th>Enrolment requirements</th>
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<tr>
<td>ELE2704 Electricity Supply Systems</td>
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<td>Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: MEPR or GCEN or METC or GEPR</td>
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<td>ELE4804 Power Systems Protection</td>
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<td>Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<td>ELE3805 Power Electronics Principles and Applications</td>
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<td>Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<tr>
<td>ELE4807 Power Systems Analysis</td>
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<td>ELE4109 Measurement Science and Instrument Engineering</td>
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<td>ELE4607 Advanced Digital Communications</td>
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<td>Pre-requisite: ELE1301 or Students must be enrolled in one of the following Programs: GCEN or METC or GCNS or GDNS or MENS or MEPR</td>
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<td>ELE5001 Industrial Communications Protocols</td>
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<td>Pre-requisite: ELE2601 or Students must be enrolled in the following Program: GCNS, GDNS, MENS or MEPR</td>
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<tr>
<td>CSC1401 Foundation Programming</td>
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<tr>
<td>CSC2402 Object-Oriented Programming in C++</td>
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<td>Pre-requisite: CSC1401 or Students must be enrolled in one of the following Programs: GDTI or GCSC or GCEN or METC or MCOT or MCTE or MCP or MPT or MCTN</td>
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<tr>
<td>CIV1501 Engineering Statics</td>
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<td>2, 3</td>
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<td></td>
<td>Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR</td>
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<tr>
<td>MEC2106 Introduction to Thermofluids</td>
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<td>Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in one of the following Programs: BENH or BE BC or BEHS or GCEN or MENS or GEPR</td>
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<tr>
<td>MEC2401 Dynamics I</td>
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<td>Pre-requisite: ((MAT1502 or MAT1102 or ENM1600) and CIV1501) or Students must</td>
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</table>

Select a minor study or approved courses from the following or other elective courses as approved by the Program Director.
Major study: Electrical and Electronic Engineering (Major Study Code: 16925)

<table>
<thead>
<tr>
<th>Course</th>
<th>Year</th>
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<th>Year</th>
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<th>Sem</th>
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<td>MEC2402 Stress Analysis</td>
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<td>Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or GCNS or METC or MEPR or MENS or GEPR</td>
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<tr>
<td>MEC2501 Process Control Systems</td>
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<td>Pre-requisite: ELE2103 or (MEC1501 and ELE2101 as Co-requisite or Pre-requisite) or Students must be enrolled in the following Program: GEPR</td>
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<tr>
<td>MEC3204 Production Engineering</td>
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<td>Pre-requisite: MEC2106 or Students must be enrolled in one of the following Programs: MENS or GCEN</td>
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<tr>
<td>MEC4104 Renewable Energy Technology</td>
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<td>Pre-requisite: (MEC2101 and MEC3102) or MEC2106 or Students must be enrolled in one of the following Programs: GCEN or GCNS or METC or MENS or MEPR</td>
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<tr>
<td>MEC4406 Robotics and Machine Vision</td>
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<td>Pre-requisite: MEC2401 or ELE2103 or Students must be enrolled in one of the following Programs: MENS or GCEN</td>
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<tr>
<td>ENG4004 Engineering Project and Operations Management†</td>
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<tr>
<td>CHE1110 Chemistry †</td>
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<td>HR</td>
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</table>

Footnotes
§  Unavailable online in S3 2023
*  Unavailable in On-Campus mode in S2 2023
†  The semester 3 offering of this course is offered in odd numbered years only.
*  Offered in odd years only e.g. 2021, 2023 etc
£  In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024
‡  The semester 3 offering of this course is offered in even numbered years only.
^  CHE1110 Chemistry 1 has a highly recommended residential school requirement in External mode.

Environmental Engineering major full-time recommended enrolment pattern

To satisfy the requirements of the program students must complete all of the Academic and Practice courses in the following table that shows the recommended enrolment patterns for on-campus and external students.
for our Toowoomba campus. Students following a non-standard enrolment pattern should click on the course link in the table below to ascertain if a course is offered in another term.

<table>
<thead>
<tr>
<th>Course</th>
<th>Year of program and semester in which course is normally studied</th>
<th>Residual school</th>
<th>Enrolment requirements</th>
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<td>Year</td>
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<td>Year</td>
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**Academic Courses Year 1**

- **ENG1002 Introduction to Engineering and Built Environment Applications**
  - Year: 1
  - Semester: 2
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1
  - Enrolment requirements: Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed.

- **ENM1600 Engineering Mathematics**
  - Year: 1
  - Semester: 2
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1

- **ENG1004 Engineering Problem Solving Principles**
  - Year: 1
  - Semester: 2
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1

- **MEC1201 Engineering Materials**
  - Year: 1
  - Semester: 2
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1

- **CIV1501 Engineering Statics**
  - Year: 1
  - Semester: 2
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1
  - Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR.

- **ENG1100 Introduction to Engineering Design**
  - Year: 1
  - Semester: 2
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1

- **ENG2002 Technology, Sustainability and Society**
  - Year: 1
  - Semester: 2
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1

- **SVY1500 Spatial Science for Engineers**
  - Year: 1
  - Semester: 2
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1

**Practice Courses Year 1**

- **ENG1901 Engineering Practice 1**
  - Year: 1
  - Semester: 2
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1
  - Pre-requisite: M

**Academic Courses Year 2**

- **ENV2201 Land Studies**
  - Year: 2
  - Semester: 1
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1

- **ENM2600 Advanced Engineering Mathematics§**
  - Year: 2
  - Semester: 1
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1
  - Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MSCN.

- **ENV2103 Hydraulics I**
  - Year: 2
  - Semester: 1
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1
  - Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN or GEPR.

- **ENV2105 Applied Chemistry and Microbiology**
  - Year: 2
  - Semester: 1
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1
  - Approved Course (Select from minor or approved course list)

- **ENG3104 Engineering Simulations and Computations**
  - Year: 2
  - Semester: 1
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1
  - Pre-requisite: (ENM2600 or MAT2100 or MAT2500) or Students must be enrolled in one of the following Programs: GDET or METC or GDNS or MENS.

- **CIV2403 Geology and Geomechanics**
  - Year: 2
  - Semester: 1
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1
  - Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: MENS or GCEN or GEPR.

  Approved Course (Select from minor or approved course list)

**Practice Courses Year 2**

- **CIV2901 Geology and Geomechanics Practice**
  - Year: 2
  - Semester: 1
  - On-campus (ONC): 1
  - External (EXT): 1
  - Online (ONL): 1
  - Pre-requisite: M or Co-requisite: ENG1901 and CIV2403

Consult the Handbook on the Web at https://www.unisq.edu.au/handbook/current for any updates that may occur during the year.

Bachelor of Engineering (Honours) (BENH) - BEng(Hons) (2023)
<table>
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<td><strong>Enrolment requirements</strong></td>
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<td><strong>Course</strong></td>
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<td><strong>Year</strong></td>
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<tr>
<td>ENV2902 Hydraulics Practice</td>
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<td>AGR2902 Field Practice</td>
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<td>AGR3304 Soil Science</td>
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<td>ENV3104 Hydraulics II</td>
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<td>ENG3003 Engineering Management†</td>
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<td>ENV3105 Hydrology</td>
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<td>ENV4203 Public Health Engineering</td>
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<td>ENG4110 Engineering Research Methodology</td>
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<td>Practice Courses Year 3</td>
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<td>Academic Courses Year 4</td>
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### Major study: Environmental Engineering (Major Study Code: 16926)

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<td>Approved Course (Select from minor or approved course list)</td>
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<tr>
<td>ENV4106 Irrigation Science</td>
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<td>ENV4107 Water Resources Engineering</td>
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<td>ENG4112 Research Project Part 2</td>
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### Practice Courses Year 4

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<td>On-campus (ONC) Year</td>
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<td>ENG4903 Professional Practice 2</td>
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<tr>
<td>ENG4909 Work Experience - Professional</td>
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Select a minor study or approved courses from the following or other elective courses as approved by the Program Director

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<th>Course</th>
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<th>Residential school</th>
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<tr>
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<td>External (EXT) Year</td>
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<td>SVY3202 Photogrammetry and Remote Sensing</td>
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<td>URP1001 Introduction to Urban and Regional Planning</td>
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Footnotes

§    Unavailable online in S3 2023

^    The residential school for this course may involve overnight field trips for which each student will be responsible for their own accommodation costs.

†    The semester 3 offering of this course is offered in odd numbered years only.

‡    The semester 3 offering of this course is offered in even numbered years only.

£    In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024

**   Course is offered in the interim trimester layer, please consult for interim trimester dates.
Environmental Engineering major part-time recommended enrolment pattern

Major study: Environmental Engineering (Major Study Code: 16926)

<table>
<thead>
<tr>
<th>Course</th>
<th>Year</th>
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<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
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<tr>
<td>ENG1002 Introduction to Engineering and Built Environment Applications</td>
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**Year 1 Practice Courses**

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**Year 2**

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<td>ENG1100 Introduction to Engineering Design</td>
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<td>Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR</td>
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<td>ENG1004 Engineering Problem Solving Principles</td>
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<td>Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN or GEPR</td>
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<td>ENG2002 Technology, Sustainability and Society</td>
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**Year 3**

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<td>ENM2600 Advanced Engineering Mathematics</td>
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<td>Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MSCN</td>
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<td>Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN or GEPR</td>
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<td>CIV2403 Geology and Geomechanics</td>
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<td>Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN or GEPR</td>
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**Year 3 Practice Courses**

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<td>ENV2902 Hydraulics Practice</td>
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<td>Pre-requisite or Co-requisite: ENV2103 or ENV1101</td>
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**Year 4**

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<td>ENV2201 Land Studies</td>
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<td>ENG3104 Engineering Simulations and Computations</td>
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<td>Pre-requisite: (ENM2600 or MAT2100 or MAT2500) or Students must be enrolled in one of the following Program</td>
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## Major study: Environmental Engineering (Major Study Code: 16926)

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### Year 4 Practice Courses

- **CIV2901 Geology and Geomechanics Practice**
  - Year: 2
  - Sem: 2,3
  - Location: M
  - Pre-requisite or Co-requisite: ENG1901 and CIV2403

### Year 5

- **ENV3104 Hydraulics II**
  - Year: 1
  - Sem: 1
  - Pre-requisite: ENV1101 or ENV2103 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS

- **AGR3304 Soil Science**
  - Year: 1
  - Sem: 1

- **ENV3103 Environmental Pollution**
  - Year: 2
  - Sem: 2
  - Pre-requisite: ENV2105 and ENV2103 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS

- **ENV3105 Hydrology**
  - Year: 2
  - Sem: 2

### Year 5 Practice Courses

- **AGR2902 Field Practice**
  - Year: 3
  - Location: M

### Year 6

- **ENV4203 Public Health Engineering**
  - Year: 2
  - Sem: 2
  - Pre-requisite: ENV1101 or ENV2103 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS

- **ENG3003 Engineering Management†**
  - Year: 1,3
  - Sem: 1,3
  - Pre-requisite: AGR3304 or Students must be enrolled in one of the following Programs: GCEN or GCSC or GDSI or METC or MEPR or GCNS or GDNS or MENS or MSCN.

- **ENV4106 Irrigation Science**
  - Year: 2
  - Sem: 2

#### Approved Course (Select from minor or approved course list)

### Year 6 Practice Courses

- **ENV3904 Environmental Engineering Practice**
  - Year: 3
  - Location: M
  - Pre-requisite: ENV4203 or Students must be enrolled in one of the following Programs: GDNS or MENS or MEPR or GEPR

### Year 7

- **ENV4204 Environmental Technology**
  - Year: 1
  - Sem: 1
  - Pre-requisite: ENV2105 or Students must be enrolled in one of the following Programs:
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<th>Year</th>
<th>Sem</th>
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<th>Sem</th>
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<td>Pre-requisite: ENV4203 and ENV2105 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<td>ENV4205 Water and Wastewater Treatment</td>
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<td>Pre-requisite: ENV3104 and ENV3105 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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**Year 7 Practice Courses**

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<td>Pre-requisite: Students must be enrolled in one of the following Programs: BCN Hor BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH or MENS</td>
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<td>Pre-requisite: Students must be enrolled in one of the following Programs: BCN Hor BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH Undergraduate students must have completed 22 units in their program.</td>
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**Year 8**

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<td>Pre-requisite: ENG3902 and ENG4110 and Students must be enrolled in one of the following Programs: BCN Hor BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH Undergraduate students must have completed 22 units in their program.</td>
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Approved Course (Select from minor or approved course list)

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<th>Course</th>
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**Year 8 Practice Courses**

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<td>Pre-requisite: ENG3902 and Students must be enrolled in: BCN Hor BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH Undergraduate students must have completed 22 units in their program.</td>
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CRICOS: QLD 00244B, NSW 02225M | TEQSA: PRV12081
© University of Southern Queensland This version produced 28 Sep 2023.
### Major study: Environmental Engineering (Major Study Code: 16926)

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<td>Enrolment is not permitted in ECO1002 if ECO1000 has been previously completed</td>
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<td>ENG4004 Engineering Project and Operations Management‡</td>
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</tr>
</tbody>
</table>

**Footnotes**

§ Unavailable online in S3 2023

^ The residential school for this course may involve overnight field trips for which each student will be responsible for their own accommodation costs.

† The semester 3 offering of this course is offered in odd numbered years only.

~ CHE1110 and CHE2120 have a highly recommended residential school component in external mode.

‡ The semester 3 offering of this course is offered in even numbered years only.
In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024.

Course is offered in the interim trimester layer, please consult for interim trimester dates.

**Instrumentation Control and Automation Engineering major full-time recommended enrolment pattern**

To satisfy the requirements of the program students must complete all of the Academic and Practice courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should click on the course link in the table below to ascertain if a course is offered in another term.

<table>
<thead>
<tr>
<th>Course</th>
<th>Year of program and semester in which course is normally studied</th>
<th>Enrolment requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>On-campus (ONC)</strong></td>
<td><strong>External (EXT)</strong></td>
<td><strong>Online (ONL)</strong></td>
</tr>
<tr>
<td><strong>Year</strong></td>
<td><strong>Sem</strong></td>
<td><strong>Year</strong></td>
</tr>
<tr>
<td><strong>Academic Courses Year 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENM1600 Engineering Mathematics</td>
<td>1,2</td>
<td>1,2</td>
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<tr>
<td>ENG1004 Engineering Problem Solving Principles</td>
<td>1</td>
<td>1,2</td>
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<tr>
<td>ELE1301 Computer Engineering</td>
<td>1</td>
<td>1</td>
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<tr>
<td>ELE1502 Electronic Circuits</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>ENG1002 Introduction to Engineering and Built Environment Applications</td>
<td>1,2</td>
<td>1,2</td>
</tr>
<tr>
<td>ENG1100 Introduction to Engineering Design</td>
<td>1,2</td>
<td>1,2</td>
</tr>
<tr>
<td>MEC1201 Engineering Materials</td>
<td>1,2</td>
<td>1,2,3</td>
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<tr>
<td>ELE1801 Electrical Technology</td>
<td>2</td>
<td>2,3</td>
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<tr>
<td><strong>Practice Courses Year 1</strong></td>
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<td></td>
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<tr>
<td>ENG1901 Engineering Practice 1</td>
<td>1,2</td>
<td>2,3</td>
</tr>
<tr>
<td>ELE1911 Electrical and Electronic Practice A</td>
<td>2</td>
<td>3</td>
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<td><strong>Academic Courses Year 2</strong></td>
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<tr>
<td>ENM2600 Advanced Engineering Mathematics</td>
<td>1</td>
<td>1,</td>
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<tr>
<td>ELE2303 Embedded Systems Design</td>
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<td>1</td>
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<tr>
<td>ENG2002 Technology, Sustainability and Society</td>
<td>1,2</td>
<td>1,2,3</td>
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<tr>
<td>Approved Course (Select from minor or approved course list)</td>
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</tr>
<tr>
<td>ENG3104 Engineering Simulations and Computations</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>ELE2103 Linear Systems and Control</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>ELE2504 Electronic Design and Analysis</td>
<td>2</td>
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</table>

Consult the Handbook on the Web at https://www.unisq.edu.au/handbook/current for any updates that may occur during the year.

Bachelor of Engineering (Honours) (BENH) - BEng(Hons) (2023)
### Major study: Instrumentation Control and Automation Engineering (Major Study Code: 17741)

<table>
<thead>
<tr>
<th>Course</th>
<th>Year</th>
<th>Semester</th>
<th>On-campus (ONC)</th>
<th>External (EXT)</th>
<th>Online (ONL)</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
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<tbody>
<tr>
<td>MEC2106 Introduction to Thermofluids</td>
<td>2</td>
<td>2</td>
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<td></td>
<td></td>
<td></td>
<td>Students cannot be enrolled in ELE2503 and ELE2504 in the same semester</td>
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### Practice Courses Year 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Year</th>
<th>Semester</th>
<th>On-campus (ONC)</th>
<th>External (EXT)</th>
<th>Online (ONL)</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
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</thead>
<tbody>
<tr>
<td>ELE2912 Electrical and Electronic Practice B[^1]</td>
<td>1</td>
<td>3</td>
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<td>Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDNS or MENS</td>
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<tr>
<td>ELE2913 Electrical and Electronic Practice C</td>
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<td>Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDNS or MENS</td>
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</table>

### Academic Courses Year 3

<table>
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<tr>
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<th>Semester</th>
<th>On-campus (ONC)</th>
<th>External (EXT)</th>
<th>Online (ONL)</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEC3107 Thermofluids</td>
<td>1</td>
<td>1</td>
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<td></td>
<td></td>
<td>Pre-requisite: (MEC2106 and ENM1600) or Students must be enrolled in one of the following Programs: GCNS or GDNS Enrolment is not permitted in MEC3107 if MEC2101 or MEC3102 have been previously completed</td>
</tr>
<tr>
<td>ENG3003 Engineering Management[^2]</td>
<td>1</td>
<td>1,3</td>
<td></td>
<td></td>
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<td></td>
<td>Pre-requisite: ELE2103 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or MEPR or MENS or METC or GEPR</td>
</tr>
<tr>
<td>ELE3105 Computer Controlled Systems</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pre-requisite: ELE2103 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or MEPR</td>
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<tr>
<td>ELE4109 Measurement Science and Instrument Engineering[^3]</td>
<td>1</td>
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<td></td>
<td></td>
<td></td>
<td>Pre-requisite: ELE1301 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or MEPR</td>
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<tr>
<td>ELE4307 Real Time Systems</td>
<td>2</td>
<td>2</td>
<td></td>
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<td></td>
<td></td>
<td>Pre-requisite: ELE2103 or (MEC1501 and ELE2101 as Co-requisite or Pre-requisite) or Students must be enrolled in the following Program: GEPR</td>
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<tr>
<td>MEC2501 Process Control Systems</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pre-requisite: ELE2103 or (ELE1502 and ELE2101 as Co-requisite or Pre-requisite) or Students must be enrolled in</td>
</tr>
<tr>
<td>ELE3506 Electronic Measurement</td>
<td>2</td>
<td>2</td>
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<td></td>
<td></td>
<td></td>
<td>Pre-requisite: (ELE1502 and ELE2101 or ELE2103) and (ELE2503 or ELE2504)) or Students must be enrolled in</td>
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### Practice Courses Year 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Year</th>
<th>Sem</th>
<th>External (EXT)</th>
<th>Online (ONL)</th>
<th>Year</th>
<th>Sem</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
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</thead>
<tbody>
<tr>
<td><strong>ENG4110 Engineering Research Methodology</strong></td>
<td>2</td>
<td>2</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>one of the following Programs: GCEN or METC or MEPR or MENS</td>
</tr>
<tr>
<td><strong>ELE3914 Electrical and Electronic Practice D</strong></td>
<td>1</td>
<td>3</td>
<td></td>
<td>M</td>
<td>3</td>
<td></td>
<td></td>
<td>Pre-requisite: (ELE1801 and ELE1301 and ELE1502) or Students must be enrolled in one of the following Programs: GCEN or METC or GCNS or MEPR</td>
</tr>
<tr>
<td><strong>MEC3905 Mechatronic Practice</strong></td>
<td>2</td>
<td></td>
<td></td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td>Pre-requisite: Students must be enrolled in one of the following Programs: BCNHor BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENG or MENS</td>
</tr>
<tr>
<td><strong>ENG3902 Professional Practice 1</strong></td>
<td>2</td>
<td></td>
<td></td>
<td>M</td>
<td></td>
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<td></td>
<td>Pre-requisite: Students must be enrolled in one of the following Programs: BCNHor BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENG or MENS</td>
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### Academic Courses Year 4

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td><strong>MEC4108 Advanced Thermofluids</strong></td>
<td>1</td>
<td>1</td>
<td></td>
<td>Pre-requisite: (MEC3107 &amp; ENM2600 &amp; ENG3104) or Students must be enrolled in one of the following Programs: GCEN or METC or GCNS or MEPR</td>
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<tr>
<td>Approved Course (Select from minor or approved course list)</td>
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<tr>
<td><strong>ELE4506 Industrial Process Automation</strong></td>
<td></td>
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<td></td>
<td>Pre-requisite: (ELE2101 or ELE2103) and ELE3105 and MEC2501 or Students must be enrolled in the following program: GCNS or GCNS or MENS or MEPR</td>
</tr>
<tr>
<td><strong>ENG4111 Research Project Part 1</strong></td>
<td>1</td>
<td>1</td>
<td></td>
<td>Pre-requisite: ENG3902 and ENG4110 and Students must be enrolled in one of the following Programs: BCNHor BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENG or MENS Undergraduate students must have completed 22 units in their program.</td>
</tr>
<tr>
<td><strong>MEC4006 Robotics and Machine Vision</strong></td>
<td>2</td>
<td>2</td>
<td></td>
<td>Pre-requisite: MEC2401 or ELE2103 or Students must be enrolled in one of the following Programs: GCEN</td>
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<tr>
<td>Approved Course (Select from minor or approved course list)</td>
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<tr>
<td>Approved Course (Select from minor or approved course list)</td>
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### Major study: Instrumentation Control and Automation Engineering (Major Study Code: 17741)

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<tr>
<th>Course</th>
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<th>Residential school</th>
<th>Enrolment requirements</th>
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<tr>
<td>ENG4112 Research Project Part 2</td>
<td>1,2</td>
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<td>1,2</td>
<td></td>
<td>Pre-requisite: ENG4111 and Students must be enrolled in one of the following Programs: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BEHG or BENH</td>
</tr>
</tbody>
</table>

### Practice Courses Year 4

**ENG4903 Professional Practice 2**

Pre-requisite: ENG3902 and Students must be enrolled in: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BEHG or BENH or MENS. Students cannot enrol in ENG3902 & ENG4903 in the same semester. Co-requisite: ENG4111 or ENG4112 or ENG8411 or ENG8412

**ENG4909 Work Experience - Professional**

Pre-requisite: ENG3902 and Students must be enrolled in: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BEHG or MENS.

Select a minor study or approved courses from the following or other elective courses as approved by the Program Director.

**Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or METC or GEPR**

**ELE2601 Telecommunications Principles**

Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or METC or GEPR

**ELE2704 Electricity Supply Systems**

Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: MEPR or GCEN or METC or GEPR

**ELE3107 Signal Processing**

Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR

**ELE3305 Computer Systems and Communications Protocols**

Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR

**ELE3803 Electrical Plant**

Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR

**ELE4804 Power Systems Protection**

Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR

**ELE3805 Power Electronics Principles and Applications**

Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR

**ELE4606 Communication Systems**

Pre-requisite: (ELE2504 and ELE2601) or Students must be enrolled in one of the following Programs: GCEN or
## Major study: Instrumentation Control and Automation Engineering (Major Study Code: 17741)

<table>
<thead>
<tr>
<th>Course</th>
<th>Year of program and semester in which course is normally studied</th>
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<th>Enrolment requirements</th>
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<tbody>
<tr>
<td></td>
<td>On-campus (ONC) Year</td>
<td>External (EXT) Year</td>
<td>Online (ONL) Year</td>
</tr>
<tr>
<td>ELE4607 Advanced Digital Communications</td>
<td>1</td>
<td>1</td>
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<tr>
<td>ELE5001 Industrial Communications Protocols</td>
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<td></td>
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<tr>
<td>CSC1401 Foundation Programming</td>
<td>1,2</td>
<td>1,2,3</td>
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<tr>
<td>CSC2402 Object-Oriented Programming in C++</td>
<td>1</td>
<td>1</td>
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<tr>
<td>ENG4004 Engineering Project and Operations Management</td>
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<td>2,3</td>
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<tr>
<td>CIV1501 Engineering Statics</td>
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<tr>
<td>MEC2202 Manufacturing Processes</td>
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<td>MEC2401 Dynamics I</td>
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<tr>
<td>MEC2402 Stress Analysis</td>
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<td>MEC3204 Production Engineering</td>
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<td>MEC4104 Renewable Energy Technology</td>
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<tr>
<td>MEC5100 Computational Fluid Dynamics</td>
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<tr>
<td>MEC5105 Combustion²</td>
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<tr>
<td>CHE1110 Chemistry ¹</td>
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</table>

**Footnotes**

- § Unavailable online in S3 2023
- ~ Unavailable in On-Campus mode in S2 2023
- ‡ Unavailable in External mode in S3 2023
- † The semester 3 offering of this course is offered in odd numbered years only.
- ‡ The semester 3 offering of this course is offered in even numbered years only.
- ^ CHE1110 Chemistry 1 has a highly recommended residential school requirement in External mode.

### Instrumentation Control and Automation Engineering major part-time recommended enrolment pattern

To satisfy the requirements of the program students must complete all of the Academic and Practice courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should click on the course link in the table below to ascertain if a course is offered in another term.

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<td></td>
<td>On-campus (ONC) Year</td>
<td>External (EXT) Year</td>
<td>Online (ONL) Year</td>
</tr>
<tr>
<td></td>
<td>Sem</td>
<td>Sem</td>
<td>Sem</td>
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</table>

#### Academic Courses Year 1

- **EN1000 Engineering Practice 1**: 1, 2, 1, 2, 3, M
- **ENM1600 Engineering Mathematics**: 1, 1, 2, 1, 2, 1
- **ENG1100 Introduction to Engineering Design**: 1, 1, 2, 2
- **ENG1004 Engineering Problem Solving Principles**: 1, 1, 1, 2

#### Practice Courses Year 1

- **EN1901 Engineering Practice 1**: 1, 2, 1, 2, 3, M

#### Academic Courses Year 2

- **ELE1301 Computer Engineering**: 2, 1, 1, 2
- **ELE1502 Electronic Circuits**: 2, 2, 1, 1
- **MEC1201 Engineering Materials**: 2, 1, 2, 1, 2, 3
- **ELE1801 Electrical Technology**: 2, 2, 2, 2, 3, M

Pre-requisite: ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR


Bachelor of Engineering (Honours) (BENH) - BEng(Hons) (2023)

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CRICOS: QLD 00244B, NSW 02225M | TEQSA: PRV12081
<table>
<thead>
<tr>
<th>Major study: Instrumentation Control and Automation Engineering (Major Study Code: 17741)</th>
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<tbody>
<tr>
<td>Course</td>
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<tr>
<td>Practice Courses Year 2</td>
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<td>ELE1911 Electrical and Electronic Practice A</td>
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<td>Academic Courses Year 3</td>
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<tr>
<td>ENM2600 Advanced Engineering Mathematics</td>
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<td>Practice Courses Year 3</td>
</tr>
<tr>
<td>ELE2912 Electrical and Electronic Practice B</td>
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<tr>
<td>Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDNS or MENS</td>
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<tr>
<td>Academic Courses Year 4</td>
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<tr>
<td>ENG2002 Technology, Sustainability and Society</td>
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<td>Approved Course (Select from minor or approved course list)</td>
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<tr>
<td>ELE2504 Electronic Design and Analysis</td>
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<tr>
<td>MEC2106 Introduction to Thermofluids</td>
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<tr>
<td>Practice Courses Year 4</td>
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<tr>
<td>ELE2913 Electrical and Electronic Practice C</td>
</tr>
<tr>
<td>Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDNS or MENS</td>
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<tr>
<td>Academic Courses Year 5</td>
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<tr>
<td>MEC3107 Thermofluids</td>
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</tbody>
</table>

Consult the Handbook on the Web at https://www.unisq.edu.au/handbook/current for any updates that may occur during the year. Bachelor of Engineering (Honours) (BENG BEng(Hons) (2023)
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<thead>
<tr>
<th>Course</th>
<th>Year</th>
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<tbody>
<tr>
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<td><strong>ONC</strong></td>
<td><strong>EXT</strong></td>
<td><strong>ONL</strong></td>
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</tr>
<tr>
<td>ENG3003 Engineering Management†</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>1,3</td>
<td></td>
<td>GDNS Enrolment is not permitted in MEC3107 if MEC2101 or MEC3102 have been previously completed</td>
<td></td>
</tr>
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<td>ELE4307 Real Time Systems</td>
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<td>Pre-requisite: ELE1301 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS or MEPR</td>
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<td><strong>Practice Courses Year 5</strong></td>
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<td>ELE3914 Electrical and Electronic Practice D</td>
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<td>3</td>
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<td>Pre-requisite: (ELE1801 and ELE1301 and ELE1502) or Students must be enrolled in one of the following Programs: MENS or MEPR</td>
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<tr>
<td><strong>Academic Courses Year 6</strong></td>
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<td>ELE3105 Computer Controlled Systems</td>
<td>6</td>
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<td>Pre-requisite: ELE2103 or Students must be enrolled in one of the following Programs: GCNS or GCEN or GDNS or MEPR or MENS or METC or GEPR</td>
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<tr>
<td>ELE4109 Measurement Science and Instrument Engineering†</td>
<td>6</td>
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<td>Pre-requisite: ELE2103 or (MEC1501 and ELE2101 as Co-requisite or Pre-requisite) or Students must be enrolled in the following Program: GEPR</td>
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<tr>
<td>MEC2501 Process Control Systems</td>
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<td>ELE3506 Electronic Measurement</td>
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<td>Pre-requisite: (MEC3107 &amp; ENM2600 &amp; ENG3104) or Students must be enrolled in one of the following Programs: MENS or MEPR or GCNS or GDNS or GEPR Students cannot enrol in MEC4108 if they have successfully com</td>
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<td><strong>Practice Courses Year 6</strong></td>
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<td>MEC3905 Mechatronic Practice</td>
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<td><strong>Academic Courses Year 7</strong></td>
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<td>MEC4108 Advanced Thermofluids</td>
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This version produced 28 Sep 2023.

CRICOS: QLD 00244B, NSW 02225M | TEQSA: PRV12081
© University of Southern Queensland
**Major study: Instrumentation Control and Automation Engineering (Major Study Code: 17741)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Year of program and semester in which course is normally studied</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
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<td>ENG4110 Engineering Research Methodology</td>
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<td>MEC4406 Robotics and Machine Vision</td>
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**Pre-requisite:** MEC2401 or ELE2103 or Students must be enrolled in one of the following Programs: MENS or GCEN

**Practice Courses Year 7**

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<td>ENG3902 Professional Practice 1</td>
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**Pre-requisite:** Students must be enrolled in one of the following Programs: BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENG or MENS

**Academic Courses Year 8**

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<th>Course</th>
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<td>ELE4506 Industrial Process Automation</td>
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<td>ENG4111 Research Project Part 1</td>
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**Pre-requisite:** (ELE2101 or ELE2103) and ELE3105 and MEC2501 or Students must be enrolled in the following program: GCNS or GDNS or MENS or MEPR

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**Pre-requisite:** ENG4111 and Students must be enrolled in one of the following Programs: BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENG or MENS Undergraduate students must have completed 22 units in their program.

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**Practice Courses Year 8**

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<td>ENG4903 Professional Practice 2</td>
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**Pre-requisite:** ENG3902 and Students must be enrolled in: BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENG or MENS. Students cannot enrol in ENG3902 & ENG4903 in the same semester. Co-requisite: ENG4111 or ENG4112 or ENG8411 or ENG8412

| ENG4909 Work Experience - Professional | 8 | 1,2,3 |                        |                        |


Bachelor of Engineering (Honours) (BENH) - BEng(Hons) (2023)
<table>
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<tr>
<th>Course</th>
<th>Year</th>
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<th>Semester</th>
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<td>ELE2601 Telecommunications Principles</td>
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<td>Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or METC or GEPR</td>
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<td>ELE2704 Electricity Supply Systems</td>
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<td>Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: MEPR or GCEN or METC or GEPR</td>
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<td>ELE3107 Signal Processing</td>
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<td>ELE3305 Computer Systems and Communications Protocols</td>
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<td>ELE3803 Electrical Plant</td>
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<td>Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR</td>
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<td>ELE4804 Power Systems Protection</td>
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<td>Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<td>ELE3805 Power Electronics Principles and Applications</td>
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<td>Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<td>ELE4606 Communication Systems</td>
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<td>Pre-requisite: (ELE2504 and ELE2601) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS</td>
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<td>ELE4607 Advanced Digital Communications</td>
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<td>Pre-requisite: ELE1301 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<tr>
<td>ELE5001 Industrial Communications Protocols</td>
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<td>Pre-requisite: ELE2601 or Students must be enrolled in the following Program: GCNS, GDNS, MENS or MEPR</td>
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<td>CSC1401 Foundation Programming</td>
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<td>CSC2402 Object-Oriented Programming in C++</td>
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<td>Pre-requisite: CSC1401 or Students must be enrolled in one of the following Programs: GDIT or GCSC or GCEN or METC or MCOT or MCTE or MCOP or MPIT or MCTN</td>
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<td><strong>ENG4004 Engineering Project and Operations Management</strong>‡</td>
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<td>Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR</td>
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<tr>
<td><strong>CIV1501 Engineering Statics</strong></td>
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<td>Pre-requisite: MEC1201 or Students must be enrolled in one of the following Programs: MEPR or GCEN</td>
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<td><strong>MEC2202 Manufacturing Processes</strong></td>
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<td>Pre-requisite: (MAT1502 or MAT1102 or ENM1600) and CIV1501 or Students must be enrolled in one of the following Programs: GCEN or GCNS or METC or MEPR or MENS or GEPR</td>
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<td><strong>MEC2401 Dynamics I</strong></td>
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<td>Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR</td>
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<td><strong>MEC2402 Stress Analysis</strong></td>
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<td>Pre-requisite: MEC2101 or Students must be enrolled in one of the following Programs: GCEN or GCNS or GDNS or METC or MEPR or MENS or GEPR</td>
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<td><strong>MEC3204 Production Engineering</strong></td>
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<td>Pre-requisite: (MEC2101 and MEC3102) or MEC2106 or Students must be enrolled in one of the following Programs: GCEN or GCNS or GDNS or METC or MENS or MEPR</td>
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<td><strong>MEC4104 Renewable Energy Technology</strong></td>
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<td>Pre-requisite: MEC3107 or MEC3102 or MEC4108 or MEC5107 or ENV3104 or ENV5104 or Students must be enrolled in the following Program: MEPR</td>
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<td><strong>MEC5100 Computational Fluid Dynamics</strong></td>
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<td>Pre-requisite: MEC3107 or MEC3102 or MEC4108 or MEC5107 or Students must be enrolled in the following Program: MEPR</td>
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<td><strong>MEC5105 Combustion</strong></td>
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<td>Pre-requisite: MEC3107 or MEC3102 or MEC4108 or MEC5107 or Students must be enrolled in the following Program: MEPR</td>
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</tbody>
</table>

**Footnotes**

‡ Unavailable online in S3 2023

~ Unavailable in On-Campus mode in S2 2023

† Unavailable in External mode in S3 2023

‡ The semester 3 offering of this course is offered in odd numbered years only.

> Offered Odd Years Only

£ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024

^ CHE1110 Chemistry 1 has a highly recommended residential school requirement in External mode.
Mechanical Engineering major full-time recommended enrolment pattern (Toowoomba and Springfield campus)

To satisfy the requirements of the program students must complete all of the Academic and Practice courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should click on the link in the table below to ascertain if a course is offered in another term.

<table>
<thead>
<tr>
<th>Course</th>
<th>Year</th>
<th>Semester</th>
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<tr>
<td>ENG1002 Introduction to Engineering and Built Environment Applications</td>
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<td>Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed</td>
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<td>ENM1600 Engineering Mathematics</td>
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<td>Pre-requisite: ENM1600 or (ENM1500 and CIV1500) Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR</td>
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<td>Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MSCN</td>
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<td>Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR</td>
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<td>MEC2401 Dynamics I</td>
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<td>Pre-requisite: (MAT1502 or MAT1102 or ENM1600) and CIV1501 or Students must be enrolled in one of the following Programs: GCEN or GCNS or METC or MEPR or MENS or GEPR</td>
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### Practice Courses

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### Academic Courses

#### Pre-requisite:
- (ENM2600 or MAT2100 or MAT2500) or Students must be enrolled in one of the following Programs: GDET or METC or GDNS or MENS

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<td>ENG3104 Engineering Simulations and Computations</td>
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#### Pre-requisite:
- (MEC2106 and ENM1600) or Students must be enrolled in one of the following Programs: GCNS or GDNSEnrolment is not permitted in MEC3107 if MEC2101 or MEC3102 have been previously completed

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### Year 3

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### Major study: Mechanical Engineering (Major Study Code: 16928)

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<td>ENG4110 Engineering Research Methodology</td>
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<td>MEC4403 Advanced Dynamics</td>
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<td>ENG3003 Engineering Management†</td>
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<td><strong>MEC4104 Renewable Energy Technology</strong></td>
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<td><strong>MEC3102 or MEC2106</strong> or Students must be enrolled in one of the following Programs: GDNS or MENS or MEPR</td>
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<td>Select approved courses from the following or other elective courses as approved by the Program Coordinator</td>
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<td><strong>MEC3107 or MEC3102 or MEC4108 or MEC5107 or ENV3104 or ENV5104</strong> or Students must be enrolled in the following Program: MEPR</td>
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<td><strong>MEC5105 Combustion</strong></td>
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<td><strong>MEC3107 or MEC3102 or MEC4108 or MEC5107</strong> or Students must be enrolled in the following Program: MEPR</td>
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<td><strong>CIV2503 Structural Design I</strong></td>
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<td><strong>ENG1100 and MEC2402</strong> or <strong>ENG1100 and CIV1501</strong> for students enrolled in one of the following: BETC Infrastructure Management major or BENS Infrastructure Management Engineering major** or Students must be enrolled in: GCEN or GEPR</td>
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Bachelor of Engineering (Honours) (BENH) - BEng(Hons) (2023)
## Major study: Mechanical Engineering (Major Study Code: 16928)

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<tr>
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<td>Year</td>
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<td>Year</td>
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<tr>
<td>CIV4803 Mechanics and Technology of Fibre Composites</td>
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<td>ELE1502 Electronic Circuits</td>
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<td>ELE2103 Linear Systems and Control</td>
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<td>ELE3105 Computer Controlled Systems</td>
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### Footnotes

‡ Unavailable online in S3 2023
† The semester 3 offering of this course is offered in odd numbered years only.
> Offered Odd Years Only. Students who intend to take this course in Year 3 should enrol in MEC3204 Production Engineering in Year 4.
@ Students who wish to enrol in ENV4204 Environmental Technology as an Approved course, should consult their Program Director.
‡ The semester 3 offering of this course is offered in even numbered years only.

## Mechanical Engineering major part-time recommended enrolment pattern (Toowoomba and Springfield campus)

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<thead>
<tr>
<th>Course</th>
<th>Year of program and semester in which course is normally studied</th>
<th>Residential school</th>
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<tr>
<td>ENG1002 Introduction to Engineering and Built Environment Applications</td>
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<td>ENM1600 Engineering Mathematics</td>
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### Practice Courses

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### Year 2

**Academic Courses**

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Major study: Mechanical Engineering (Major Study Code: 16928)

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### Year 3

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<td>MEC2106 Introduction to Thermofluids</td>
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<td>MEC2301 Design of Machine Elements</td>
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#### Academic Courses

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<th>Enrolment requirements</th>
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<td>MEC3203 Materials Technology</td>
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<td>Pre-requisite: MEC1201 or Students must be enrolled in one of the following Programs: GCEN or METC or GCNS or GDNS or MEPR or MENS</td>
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<td>MEC2202 Manufacturing Processes</td>
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<tr>
<td>MEC3204 Production Engineering</td>
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<tr>
<td>MEC3303 Mechanical and Mechatronic System Design</td>
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<td>Pre-requisite: MEC2301 or Students must be enrolled in one of the following Programs: GCEN or METC or GCNS or GDNS or MEPR or MENS</td>
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#### Practice Courses

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<td>MEC3903 Mechanical Practice 3</td>
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### Year 6

#### Academic Courses

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<tr>
<td>MEC3107 Thermofluids</td>
<td>1</td>
<td>1</td>
<td>Pre-requisite: (MEC2106 and ENM1600) or Students must be enrolled in one of the following Programs: GCNS or GDNS Enrolment is not permitted in MEC3107 if MEC2101 or MEC3102 have been previously completed</td>
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<td>MEC4302 Computational Mechanics in Design</td>
<td>1</td>
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<td>Pre-requisite: (MEC2304 and MEC2401 and MEC2402) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<tr>
<td>MEC4403 Advanced Dynamics</td>
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<td>Pre-requisite: (MEC2401 and (MAT2500 or ENM2600)) or Students must be enrolled in one of the following Programs: MENS or MEPR or GCNS or GDNS or GEPR</td>
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#### Approved Course (Select from approved course list)

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<td>MEC4108 Advanced Thermofluids</td>
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<td>ENG3003 Engineering Management†</td>
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<td>MEC4104 Renewable Energy Technology</td>
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<td>ENG4110 Engineering Research Methodology</td>
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### Practice Courses

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<td>ENG4903 Professional Practice 2</td>
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<td>Pre-requisite: ENG3902 and Students must be enrolled in: BCNH or BCON or BEBB or BEBC or BEBH or BEHI or BEHS or BENG or BENH or MENS. Students cannot enrol in ENG3902 &amp; ENG4903 in the same semester. Co-requisite: ENG4111 or ENG4112 or ENG8411 or ENG8412.</td>
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Select approved courses from the following or other elective courses as approved by the Program Coordinator

<table>
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<tr>
<th>Course</th>
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<tr>
<td>MEC4406 Robotics and Machine Vision</td>
<td>2</td>
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<td>MEC2401 or ELE2103</td>
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<tr>
<td>MEC5100 Computational Fluid Dynamics</td>
<td>1</td>
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<td>MEC3107 or MEC3102 or MEC4108 or MEC5107 or ENV3104 or ENV5104</td>
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<tr>
<td>MEC5105 Combustion</td>
<td>2</td>
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<td>MEC3107 or MEC3102 or MEC4108 or MEC5107 or Students must be enrolled in the following Program: MEPR</td>
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<tr>
<td>CIV2503 Structural Design I</td>
<td>2</td>
<td>2</td>
<td>(ENG1100 and MEC2402) or (ENG1100 and CIV1501 for students enrolled in one of the following: BETC Infrastructure Management major or BENS Infrastructure Management Engineering major) or Students must be enrolled in: GCEN or GEPR</td>
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<tr>
<td>CIV4803 Mechanics and Technology of Fibre Composites</td>
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<td>CIV3506 or CIV4506 or (MEC2402 and MEC3203)</td>
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<tr>
<td>ELE1502 Electronic Circuits</td>
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<tr>
<td>ELE2103 Linear Systems and Control</td>
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<tr>
<td>ELE2303 Embedded Systems Design</td>
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<td>Pre-requisite: ELE1301</td>
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<tr>
<td>ELE3105 Computer Controlled Systems</td>
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<td>Pre-requisite: ELE2103 or Students must be enrolled in one of the following Program: GCNS or GCEN or GDNS or MEPR or MENS or METC or GEPR</td>
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Approved Courses (Select from approved course list) 2, 1, 2, 3
Major study: Mechanical Engineering (Major Study Code: 16928)

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<th>Course</th>
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<tr>
<td>ENV4204 Environmental Technology</td>
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<td>ENG4004 Engineering Project and Operations Management</td>
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Footnotes
§ Unavailable online in S3 2023
† The semester 3 offering of this course is offered in odd numbered years only.
‡ Offered Odd Years Only.
@ Students who wish to enrol in ENV4204 Environmental Technology as an Approved course, should consult their Program Director.
‡ The semester 3 offering of this course is offered in even numbered years only.

Mechatronic Engineering major full-time recommended enrolment pattern (Toowoomba and Springfield campus)

To satisfy the requirements of the program students must complete all of the Academic and Practice courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should click on the course link in the table below to ascertain if a course is offered in another term.

Major study: Mechatronic Engineering (Major Study Code: 16929)

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>ENM1600 Engineering Mathematics</td>
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<tr>
<td>ENG1004 Engineering Problem Solving Principles</td>
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<td>ENG1100 Introduction to Engineering Design</td>
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<td>ELE1301 Computer Engineering</td>
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<td>ENG1901 Engineering Practice 1</td>
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<tr>
<td>ENG1002 Introduction to Engineering and Built Environment Applications</td>
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<td>MEC2406 Introduction to Mechatronics and Automation</td>
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<td>CIV1501 Engineering Statics</td>
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<td>MEC2304 Solid Modelling</td>
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# Major study: Mechatronic Engineering (Major Study Code: 16929)

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<td>ENM2600 Advanced Engineering Mathematics§</td>
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<td>Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MGEN</td>
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<td>MEC2402 Stress Analysis</td>
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<td>Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR</td>
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<tr>
<td>MEC2401 Dynamics I</td>
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<td>Pre-requisite: (MAT1502 or MAT102 or ENM1600) and CIV1501 or Students must be enrolled in one of the following Programs: GCEN or GCNS or METC or MEPR or MENS or GEPR</td>
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<td>Pre-requisite: ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR</td>
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<td>ENG3104 Engineering Simulations and Computations</td>
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<td>Pre-requisite: (ENM2600 or MAT2100 or MAT2500) or Students must be enrolled in one of the following Programs: GDET or METC or GDNS or MENS</td>
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<td>MEC2301 Design of Machine Elements</td>
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<td>Pre-requisite: (MEC2402 and ENG1100) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR</td>
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<td>ELE1911 Electrical and Electronic Practice A §</td>
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<td>ENG2002 Technology, Sustainability and Society</td>
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### Major study: Mechatronic Engineering (Major Study Code: 16929)

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<td>Pre-requisite: (MEC2304 and MEC2401 and MEC2402) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<td>Pre-requisite: MEC2301 or Students must be enrolled in one of the following Programs: GCEN or METC or GCNS or GDNS or MEPR or MENS</td>
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<td>ELE2504 Electronic Design and Analysis</td>
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<td>Pre-requisite: ELE1502 or Students must be enrolled in one of the following Programs: MENS or GCNS or GCEN or GEPR or Students cannot be enrolled in ELE2503 and ELE2504 in the same semester</td>
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<td>ENG4110 Engineering Research Methodology</td>
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#### Practice Courses

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<td>MEC3905 Mechatronic Practice</td>
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<td>Pre-requisite: Students must be enrolled in one of the following Programs: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENG or MENS</td>
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<td>ENG3902 Professional Practice 1</td>
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</table>

#### Year 4

#### Academic Courses

<table>
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<th>Course</th>
<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
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<tbody>
<tr>
<td>MEC2202 Manufacturing Processes</td>
<td>4</td>
<td>1</td>
<td>1</td>
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<td>Pre-requisite: MEC1201 or Students must be enrolled in one of the following Programs: MEPR or GCEN</td>
</tr>
<tr>
<td>ELE3105 Computer Controlled Systems</td>
<td>4</td>
<td>1</td>
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<td>Pre-requisite: ELE2103 or Students must be enrolled in one of the following Programs: GCNS or GCEN or GDNS or MEPR or MENS or METC or GEPR</td>
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<tr>
<td>ENG3003 Engineering Management†</td>
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<td>Pre-requisite: ENG3902 and Students must be enrolled in one of the following Programs: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or</td>
</tr>
<tr>
<td>ENG4111 Research Project Part 1</td>
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</table>
Practice Courses

**ENG4903 Professional Practice 2**
- Year: 4
- Semester: 1, 2
- Requirements: Pre-requisite: ENG3902 and Students must be enrolled in: BCNH or BCON or BEBB or BEBC or BEBH or BEHI or BEHS or BENH or MENS. Students cannot enrol in ENG3902 & ENG4903 in the same semester. Co-requisite: ENG4111 or ENG4112 or ENG8411 or ENG8412.

**ENG4909 Work Experience - Professional**
- Year: 1, 2, 3

Academic Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Year</th>
<th>Semester</th>
<th>Pre-requisite</th>
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<tbody>
<tr>
<td>ELE3506 Electronic Measurement</td>
<td>4</td>
<td>2</td>
<td>(ELE1502 and (ELE2101 or ELE2103) and (ELE2503 or ELE2504)) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or MENS</td>
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<tr>
<td>MEC4406 Robotics and Machine Vision</td>
<td>4</td>
<td>2</td>
<td>Pre-requisite: MEC2401 or ELE2103 or Students must be enrolled in one of the following Programs: MENS or GCEN</td>
</tr>
<tr>
<td>ENG4112 Research Project Part 2</td>
<td>4</td>
<td>2</td>
<td>Pre-requisite: ENG4111 and Students must be enrolled in one of the following Programs: BCNH or BCON or BEBB or BEBC or BEBH or BEHS or BENH or MENS</td>
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</table>

Select one (1) approved course from the following or other elective course as approved by the Program Director:

<table>
<thead>
<tr>
<th>Course</th>
<th>Year</th>
<th>Semester</th>
</tr>
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<tbody>
<tr>
<td>ENG4004 Engineering Project and Operations Management†</td>
<td>3</td>
<td>2, 3</td>
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<tr>
<td>ELE3305 Computer Systems and Communications Protocols</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>MEC2106 Introduction to Thermofluids</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>MEC3203 Materials Technology</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

‡ Consult the Handbook on the Web at https://www.unisq.edu.au/handbook/current for any updates that may occur during the year.
### Mechatronic Engineering major part-time recommended enrolment pattern  
**(Toowoomba and Springfield campus)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Year of program and semester in which course is normally studied</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
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<tbody>
<tr>
<td></td>
<td>On-campus (ONC)</td>
<td>External (EXT)</td>
<td>Online (ONL)</td>
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<td></td>
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<tr>
<td>MEC2204 Production Engineering</td>
<td>2</td>
<td>2</td>
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<tr>
<td>MEC4104 Renewable Energy Technology</td>
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<td>2</td>
</tr>
</tbody>
</table>

Footnotes
§ Unavailable online in S3 2023  
~ Unavailable in On-Campus mode in S2 2023  
# Unavailable in External mode in S3 2023  
† The Semester 3 offering of this course is offered in odd numbered years only.  
‡ The semester 3 offering of this course is offered in even numbered years only.
<table>
<thead>
<tr>
<th>Course</th>
<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
<th>Year</th>
<th>Sem</th>
<th>Residential school</th>
<th>Enrolment requirements</th>
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<tr>
<td>ENM2600 Advanced Engineering Mathematics $^6$</td>
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<td>Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MSCN</td>
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<td>ELE1801 Electrical Technology $^6$</td>
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<td></td>
<td>Pre-requisite: ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR</td>
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<tr>
<td>ENG3104 Engineering Simulations and Computations</td>
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<td></td>
<td></td>
<td>Pre-requisite: (ENM2600 or MAT2100 or MAT2500) or Students must be enrolled in one of the following Programs: GDET or METC or GDNS or MENS</td>
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</table>

### Year 4

#### Academic Courses

- **MEC2402 Stress Analysis**
  - Year: 1
  - Sem: 1
  - Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR

- **MEC2401 Dynamics I**
  - Year: 1
  - Sem: 1
  - Pre-requisite: ((MAT1502 or MAT1102) or ENM1600 and CIV1501) or Students must be enrolled in one of the following Programs: GCEN or GCNS or METC or MEPR or MENS or GEPR

- **MEC2301 Design of Machine Elements**
  - Year: 2
  - Sem: 2
  - Pre-requisite: (MEC2402 and ENG1100) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR

#### Practice Courses

- **MEC2901 Mechanical Practice 1**
  - Year: 1
  - Sem: 3
  - M

- **MEC2902 Mechanical Practice 2**
  - Year: 1
  - Sem: 1
  - M

- **ELE1911 Electrical and Electronic Practice A $^-$**
  - Year: 2
  - Sem: 3
  - M

### Year 5

#### Academic Courses

- **ELE1502 Electronic Circuits**
  - Year: 1
  - Sem: 1

- **ENG2002 Technology, Sustainability and Society**
  - Year: 1,2
  - Sem: 1,2,3

- **MEC4403 Advanced Dynamics**
  - Year: 2
  - Sem: 2
  - Pre-requisite: (MEC2401 and (MAT2500 or ENM2600)) or Students must be enrolled in one of the following Programs: MENS or MEPR or GCNS or GDNS or GEPR
<table>
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<th>Course</th>
<th>Year of program and semester in which course is normally studied</th>
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<th>Enrolment requirements</th>
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</thead>
<tbody>
<tr>
<td>MEC3303 Mechanical and Mechatronic System Design</td>
<td>2 Year 2 Semester 2 Year 2</td>
<td></td>
<td>Pre-requisite: MEC2301 or Students must be enrolled in one of the following Programs: GCEN or METC or GCNS or GDNS or MEPR or MENS</td>
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</table>

**Year 6**

<table>
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</thead>
<tbody>
<tr>
<td>MEC4302 Computational Mechanics in Design</td>
<td>1 Year 1 Semester 1 Year 1</td>
<td></td>
<td>Pre-requisite: (MEC2304 and MEC2401 and MEC2402) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
</tr>
<tr>
<td>ELE2303 Embedded Systems Design</td>
<td>1 Year 1 Semester 1 Year 1</td>
<td></td>
<td>Pre-requisite: ELE1301</td>
</tr>
<tr>
<td>ELE2504 Electronic Design and Analysis</td>
<td>2 Year 2 Semester 2 Year 2</td>
<td></td>
<td>Pre-requisite: ELE1502 or Students must be enrolled in one of the following Programs: MEPR or GDNS or MENS or GCNS or GDNS or ELE2504 in the same semester</td>
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</tbody>
</table>

Approved Course (Select from approved course list)

**Practice Courses**

| MEC3905 Mechatronic Practice               | 2 Year 2 Semester | M | |

**Year 7**

**Academic Courses**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MEC2202 Manufacturing Processes</td>
<td>1 Year 1 Semester 1 Year 1</td>
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<td>Pre-requisite: MEC1201 or Students must be enrolled in one of the following Programs: MEPR or GCEN</td>
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<tr>
<td>ELE3105 Computer Controlled Systems</td>
<td>1 Year 1 Semester 1 Year 1</td>
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<td>Pre-requisite: ELE2103 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MEPR or MENS or METC or GEPR</td>
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<tr>
<td>ELE3506 Electronic Measurement</td>
<td>2 Year 2 Semester 2 Year 2</td>
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<td>Pre-requisite: (ELE1502 and (ELE2101 or ELE2103) and (ELE2503 or ELE2504)) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or MENS</td>
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<tr>
<td>ENG4110 Engineering Research Methodology</td>
<td>2 Year 2 Semester 2 Year 2</td>
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**Practice Courses**

| ENG3902 Professional Practice 1            | 2 Year 2 Semester | M | Pre-requisite: Students must be enrolled in one of the following Programs: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH or MENS |
Major study: Mechatronic Engineering (Major Study Code: 16929)

<table>
<thead>
<tr>
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<td>Year</td>
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<tr>
<td>Year 8</td>
<td></td>
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</tbody>
</table>

**Academic Courses**

ENG3003 Engineering Management†

ENG4111 Research Project Part 1

Pre-requisite: ENG3902 and ENG4110 and Students must be enrolled in one of the following Programs: BCIH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH Undergraduate students must have completed 22 units in their program.

**Practice Courses**

ENG4909 Work Experience - Professional

**Academic Courses**

MEC4406 Robotics and Machine Vision

ENG4112 Research Project Part 2

Pre-requisite: ENG4111 and Students must be enrolled in one of the following Programs: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH

**Practice Courses**

ENG4903 Professional Practice 2

Pre-requisite: ENG3902 and Students must be enrolled in: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH and Students cannot enrol in ENG3902 & ENG4903 in the same semester. Co-requisite: ENG4111 or ENG4112 or ENG4811 or ENG48412

Select one (1) approved course from the following or other elective course as approved by the Program Coordinator

ENG4004 Engineering Project and Operations Management†

ELE3305 Computer Systems and Communications Protocols

MEC2106 Introduction to Thermofluids

Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in one of the following Programs: BENH or BE BC or BEHS or GCEN or MENS or GEPR
### Major study: Mechatronic Engineering (Major Study Code: 16929)

<table>
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<tr>
<td></td>
<td>Year</td>
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<td>Year</td>
</tr>
<tr>
<td>MEC3203 Materials Technology</td>
<td>1</td>
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<td>1</td>
</tr>
<tr>
<td>MEC3204 Production Engineering</td>
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<td>2</td>
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<tr>
<td>MEC4104 Renewable Energy Technology</td>
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<td>2</td>
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</tr>
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</table>

#### Footnotes

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- # Unavailable in External mode in S3 2023
- † The Semester 3 offering of this course is offered in odd numbered years only.
- ‡ The semester 3 offering of this course is offered in even numbered years only.

### Power Engineering major full-time recommended enrolment pattern

To satisfy the requirements of the program students must complete all of the Academic and Practice courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus.

#### Major study: Power Engineering (Major Study Code:16930)

<table>
<thead>
<tr>
<th>Course</th>
<th>Year of program and semester in which course is normally studied</th>
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<tr>
<td>ENM1600 Engineering Mathematics</td>
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<tr>
<td>ENG1004 Engineering Problem Solving Principles</td>
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<tr>
<td>ELE1301 Computer Engineering</td>
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<td>ELE1502 Electronic Circuits</td>
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<td>ENG1002 Introduction to Engineering and Built Environment Applications</td>
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<td>ENG1100 Introduction to Engineering Design</td>
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<td>ELE1801 Electrical Technology§</td>
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<tr>
<td>MEC1201 Engineering Materials</td>
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#### Practice Courses Year 1

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<td></td>
<td>Year</td>
<td>Sem</td>
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<td>ENG1901 Engineering Practice 1</td>
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<td>ELE1911 Electrical and Electronic Practice §</td>
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### Major study: Power Engineering (Major Study Code: 16930)

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<tr>
<td>Academic Courses Year 2</td>
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<tr>
<td>ENM2600 Advanced Engineering Mathematics</td>
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<td>Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MESC</td>
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<td>ELE2303 Embedded Systems Design</td>
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<td>Pre-requisite: ELE1301</td>
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<tr>
<td>ENG2002 Technology, Sustainability and Society</td>
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<tr>
<td>Approved Course (Select from minor or approved course list)</td>
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<td>ELE2504 Electronic Design and Analysis</td>
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<td>Pre-requisite: ELE1502 or Students must be enrolled in one of the following Programs: MEPR or GDNS or MENS or GCNS or GCEN or GEPR  Students cannot be enrolled in ELE2503 and ELE2504 in the same semester</td>
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<tr>
<td>ELE2103 Linear Systems and Control</td>
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<tr>
<td>ENG3104 Engineering Simulations and Computations</td>
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<td>2</td>
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<td>Pre-requisite: (ENM2600 or MAT2100 or MAT2500) or Students must be enrolled in one of the following Programs: GDET or METC or GDNS or MENS</td>
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<tr>
<td>MEC2106 Introduction to Thermofluids</td>
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<td>2</td>
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<td>Pre-requisite: CIV1500 or Students must be enrolled in one of the following Programs: BENG or BE BC or BEHS or GCEN or MENS or GEPR</td>
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<tr>
<td>Practice Courses Year 2</td>
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<tr>
<td>ELE2912 Electrical and Electronic Practice B</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>M</td>
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<td>Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDNS or MENS</td>
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<td>ELE2913 Electrical and Electronic Practice C</td>
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<td>ELE3803 Electrical Plant</td>
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<td>Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR</td>
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<tr>
<td>ELE3105 Computer Controlled Systems</td>
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<td>Pre-requisite: ELE2103 or Students must be enrolled in one of the following Programs: GCNS or GCEN or GDNS</td>
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## Major study: Power Engineering (Major Study Code:16930)

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<td>Online (ONL)</td>
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### Practice Courses Year 3

- **ENG3003 Engineering Management**
  
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- **ELE3305 Computer Systems and Communications Protocols**
  
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- **ELE3805 Power Electronics Principles and Applications**
  
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### Academic Courses Year 4

- **ENG4110 Engineering Research Methodology**
  
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### Practice Courses Year 3

- **ELE3914 Electrical and Electronic Practice D**
  
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- **ELE3915 Electrical and Electronic Practice E**
  
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- **ENG2901 Professional Practice 1**
  
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### Academic Courses Year 4

- **ELE4807 Power Systems Analysis**
  
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- **ELE4804 Power Systems Protection**
  
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- **ENG4111 Research Project Part 1**
  
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- **Approved Course (Select from minor or approved course list)**
  
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- **ELE2704 Electricity Supply Systems**
  
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Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: BCN or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH or MENS
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**Practice Courses Year 4**

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Select a minor study or approved courses from the following or other elective courses as approved by the Program Director

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<td>Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or METC or GEPR</td>
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<td>ELE3107 Signal Processing</td>
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<td>ELE4307 Real Time Systems</td>
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<td>GIS1402 Geographic Information Systems</td>
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<td>MEC2501 Process Control Systems</td>
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<td>MEC4403 Advanced Dynamics</td>
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<td>CHE1110 Chemistry 1</td>
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Footnotes

§ Unavailable online in S3 2023
- Unavailable in On-Campus mode in S2 2023
# Unavailable in External mode in S3 2023
† The Semester 3 offering of this course is offered in odd numbered years only.
£ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024
‡ The Semester 3 offering of this course is offered in even numbered years only.
^ CHE1110 Chemistry 1 has a highly recommended residential school requirement in External mode.
## Power Engineering major part-time recommended enrolment pattern

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<td>ELE2913 Electrical and Electronic Practice C</td>
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<td>Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDNS or MENS</td>
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### Year 5

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<th>Sem</th>
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<th>Enrolment requirements</th>
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<td>ELE3803 Electrical Plant</td>
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<td>Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR</td>
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<td>ELE3105 Computer Controlled Systems</td>
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<td>ELE3805 Power Electronics Principles and Applications</td>
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### Year 5 Practice Courses

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<th>Sem</th>
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<tr>
<td>ELE3914 Electrical and Electronic Practice D</td>
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<td>Pre-requisite: (ELE1801 and ELE1301 and ELE1502) or Students must be enrolled in one of the following Programs: MENS or MEPR</td>
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### Year 6

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<th>Sem</th>
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<tr>
<td>ENG3003 Engineering Management†</td>
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<td>ELE3305 Computer Systems and Communications Protocols</td>
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### Major study: Power Engineering (Major Study Code: 16930)

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<td>ELE2704 Electricity Supply Systems</td>
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<td>Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: MEPR or GCEN or METC or GEPR</td>
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<td><strong>Year 7</strong></td>
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<tr>
<td>ELE4807 Power Systems Analysis</td>
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<td>Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<td>ELE4804 Power Systems Protection</td>
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<td>ENG4110 Engineering Research Methodology</td>
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<td>Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS</td>
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<td>MEC4104 Renewable Energy Technology</td>
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<td><strong>Year 7 Practice Courses</strong></td>
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<tr>
<td>ENG3902 Professional Practice 1</td>
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<td>M</td>
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<td>Pre-requisite: Students must be enrolled in one of the following Programs: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH or MENS</td>
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<td><strong>Year 8</strong></td>
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<tr>
<td>ENG4111 Research Project Part 1</td>
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<td>Pre-requisite: ENG3902 and Students must be enrolled in one of the following Programs: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH Undergraduate students must have completed 22 units in their program.</td>
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<td>ENG4112 Research Project Part 2</td>
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<td>Pre-requisite: ENG4111 and Students must be enrolled in one of the following Programs: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH Undergraduate students must have completed 22 units in their program.</td>
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### Major study: Power Engineering (Major Study Code: 16930)

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<tr>
<th>Course</th>
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#### Year 8 Practice Courses

**ENG4903 Professional Practice 2**

- Pre-requisite: ENG3902 and Students must be enrolled in: BCNH or BCON or BEBB or BEBC or BEHB or BEHI or BEHS or BENG or BENH or MENS. Students cannot enrol in ENG3902 & ENG4903 in the same semester. Co-requisite: ENG4111 or ENG4112 or ENG4115 or ENG4116

**ENG4909 Work Experience - Professional**

- Students must be enrolled in one of the following Programs: GCEN or METC or MEPR

Select a minor study or approved courses from the following or other elective courses as approved by the Program Director

- **ELE2601 Telecommunications Principles**
  - Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR

- **ELE3107 Signal Processing**
  - Pre-requisite: ELE1301 or Students must be enrolled in one of the following Programs: GCEN or GCNS or GDNS or MENS or MEPR

- **ELE4307 Real Time Systems**
  - Pre-requisite: ELE4111 or ELE4112 or ENG4115 or ENG4116

- **ELE4506 Industrial Process Automation**
  - Pre-requisite: (ELE2101 or ELE2103) and ELE3105 and ELE2601 or Students must be enrolled in one of the following Programs: GCEN or GCNS or GDNS or MENS or MEPR

- **ELE4605 Fields and Waves**
  - Pre-requisite: ((MAT1502 or ENM1600) and ELE2103 and ELE2601) or Students must be enrolled in one of the following Programs: MEPR or MENS or GCNS or GDNS

- **ELE5001 Industrial Communications Protocols**
  - Pre-requisite: ELE2601 or Students must be enrolled in the following Program: GCN S, GDNS, MENS or MEPR

- **CIV2403 Geology and Geomechanics**
  - Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN or GEPR

- **CIV2605 Construction Engineering**
  - Pre-requisite: CIV1500 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN or GEPR

- **GIS1401 Geographic Data Presentation**
  - Pre-requisite: GIS1402 Geographic Information Systems

- **GIS1402 Geographic Information Systems**
  - Pre-requisite: GIS1402 Geographic Information Systems


Bachelor of Engineering (Honours) (BENG) - BEng(Hons) (2023)
<table>
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<th>Course</th>
<th>Year of program and semester in which course is normally studied</th>
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<td>MEC4403 Advanced Dynamics</td>
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<tr>
<td>CHE1110 Chemistry 1</td>
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</table>

Footnotes:

§  Unavailable online in S3 2023
-  Unavailable in On-Campus mode in S2 2023
#  Unavailable in External mode in S3 2023
†  The Semester 3 offering of this course is offered in odd numbered years only.
£  In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024.
‡  The Semester 3 offering of this course is offered in even numbered years only.
^  CHE1110 Chemistry 1 has a highly recommended residential school requirement in External mode.