# Mechanical Engineering

## Stage one: 48 credit points
- Course advice is required for enrolment in stage one – enrolment plan depends on the need for foundation units
- Level 2 electives may be undertaken following successful completion of 24 credit points
- Students undertake a common first year and nominate their chosen specialisation through the ‘branch selection’ process

### Core Units (30 credit points) – all students complete:
- ENG1060 Computing for engineers
- ENG1091 Mathematics for engineering
- ENG1001 Engineering design: lighter, faster, stronger
- ENG1002 Engineering design: cleaner, safer, smarter
- ENG1003 Engineering mobile apps

### Foundation units (0, 6 or 12 credit points)
- Students who have not completed VCE units 3&4 of Chemistry, Physics and/or Specialist Mathematics must complete one or two units from:
  - ENG1070 Foundation Chemistry
  - ENG1090 Foundation Mathematics
  - PHS1080 Foundation physics

### Elective units (6, 12 or 18 credit points)
- CHM1011 Chemistry I (Clayton) or CHM1051 Chemistry I advanced (Malaysia)
- ENE1621 Environmental engineering
- ENG1051 Materials for energy and sustainability
- ENG1071 Chemistry for engineering
- ENG1081 Physics for engineering
- MNE1010 Introduction to mining

### Stage two (48 credit points)

#### Sem 1
- MEC2401 Dynamics 1
- MEC2402 Engineering design I
  - Co-requisites:
    - MEC2403 or MAE2401 or TRC2201

#### Sem 2
- ENG2091 Advanced engineering maths A
- Prerequisites: ENG1091
- MEC2404 Fluid mechanics 1
- MEC2407 Electromechanics
- MEC2403 Mechanics of Materials
- MEC2405 Thermodynamics
- MEC2456 Engineering computational analysis
- Prerequisites: ENG1060

### Stage three (48 credit points)

#### Sem 1
- MEC3451 Fluid mechanics II
  - Prerequisites:
    - Must have passed (ENG2091 and MEC2404) OR have passed (MEC2430 or MEC2404) AND passed 2 units in (MAT2901, MAT2902, MTH2010, MTH2021, MTH2032)

- MEC3453 Dynamics II
  - Prerequisites:
    - MEC2401, ENG2091 or MTH2021 or MTH2032

- MEC3454 Thermodynamics and heat transfer
  - Prerequisites:
    - MEC2404 and MEC2405 or MTH2021 or MTH2032

- MEC3455 Solid mechanics
  - Prerequisites:
    - MEC2402 and MEC2403

- MEC3457 Systems and control
  - Prerequisites:
    - (ENG2091 and MEC2407 and MEC2401) or (MEC2401 and MTH2021 or MEC2401 and MTH2032)

- MEC3458 Experimental project
  - Prerequisites:
    - Must have passed 96 credit points from engineering or science

- MEC3459 Materials selection for engineering design
  - Prerequisites:
    - None
### Stage four

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<thead>
<tr>
<th>Sem 1</th>
<th>Course</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td></td>
<td>MEC4401 Final year project</td>
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<tr>
<td></td>
<td>MEC4404 Professional practice</td>
<td>Prerequisites</td>
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<td>Engineering elective – choose from elective list below</td>
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<td>Engineering elective – choose from elective list below</td>
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<tr>
<td>Sem 2</td>
<td>MEC4407 engineering design III</td>
<td>6-point inter-faculty (commerce) elective</td>
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<td>MEC4402</td>
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<td>Engineering elective – choose from elective list below</td>
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#### Mechanical Engineering elective units:

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<thead>
<tr>
<th>Course</th>
<th>Inter-faculty (commerce) electives</th>
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<tbody>
<tr>
<td>MEC4417 Refrigeration and air-conditioning**</td>
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<tr>
<td>MEC4418 Control systems</td>
<td>BFC2000 Financial institutions and markets</td>
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<tr>
<td>MEC4425 Micro/nano solid and fluid mechanics</td>
<td>BFC2140 Corporate finance</td>
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<tr>
<td>MEC4426 Computer-aided design</td>
<td>BTC1110 Business law</td>
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<td>MEC4428 Advanced dynamics</td>
<td>ECC100 Principles of macroeconomics</td>
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<td>MEC4444 Industrial noise and its control</td>
<td>ECC2800 Prosperity, poverty and sustainability in a globalised world</td>
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<td>MEC4446 Composite structures</td>
<td>MGC1010 Managing people and organisations</td>
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<td>MEC4447 computers in fluids and energy</td>
<td>MGC1020 Organisations: Contexts and strategies</td>
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<td>MEC4456 Robotics</td>
<td>MGX2230 Organisational behaviours</td>
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<td>MEC4459 Wind engineering</td>
<td>MGX3100 Management ethics and corporate governance</td>
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<tr>
<td>TRC4800 Robotics</td>
<td>MGX3991 Leadership principles and practices</td>
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<td>MEC4801 Non-destructive testing and inspection**</td>
<td>MKC1200 Principles of marketing</td>
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<tr>
<td>MEC4802 Sustainable engineering and design with nanomaterials**</td>
<td>BTW1042 Malaysian business law**</td>
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<td>MEC4803 Internal combustion engines**</td>
<td>ECW1102 Introductory macroeconomics**</td>
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<td>MEC4402 Final year project II</td>
<td>MGW1010 Introduction to management**</td>
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<tr>
<td>**Malaysia only</td>
<td>MGW2230 Organisational behaviour**</td>
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<td>MKW1120 Marketing theory and practice**</td>
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#### Notes:

- **Credit points**: Unless specified, all units are worth 6 credit points
- **Bachelor of Engineering**: 32 units x 6cp = **Total of 192 credit points**
- **Unit requisites**: All pre-requisite and co-requisite requirements must be undertaken in order to be able to enrol into a specific unit
- **Duration of degree**: 4 years full-time, 8 years part-time
- **Time limit**: 8 years. Students have eight years in which to complete this award from the time they commence first year. Periods of intermission are counted as part of the eight years.
- **Course advice**: [www.eng.monash.edu.au/current-students/course-advice.html](http://www.eng.monash.edu.au/current-students/course-advice.html)
- **Monash University handbook**: Students should follow the course structure for the year the course was commenced [http://monash.edu/pubs/2015handbooks/courses/index-byfaculty-eng.html](http://monash.edu/pubs/2015handbooks/courses/index-byfaculty-eng.html)

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Faculty of Engineering, Monash University
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