# 365AM Bachelor of Engineering(Mechanical & Manufacturing) and Bachelor of Laws

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| **Year and Campus:** | 2010 - Parkville |
| **Fees Information:** | Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees |
| **Level:** | Undergraduate |
| **Duration & Credit Points:** | 600 credit points taken over 72 months full time. This course is available as full or part time. |
| **Coordinator:** | A/Prof. Andrew Seng Hock Ooi |
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| **Course Overview:** | The department was first established after the Second World War, although the course in mechanical engineering began in 1907 as a Faculty stream. An industrial engineering degree was added in the late 1950s. In 1988 an extensive review of the curriculum led to the undergraduate courses being restructured into a new, single degree course in mechanical and manufacturing engineering with students having the option to choose specialisations in their last year. A 1995 review of the department by a team from the US and UK ranked its research and teaching at the highest international standards. In 1996, the five-year combined degree in mechatronics commenced. Mechanical and manufacturing engineering applies human and material resources to the design, construction, operation and maintenance of machines (supported increasingly by sophisticated computer technology) to move people, goods and materials; generate energy; produce goods and services; and control pollution and dispose of wastes. It interacts with all other branches of engineering including the medical sciences.<br>The combined degree of Bachelor of Engineering (Mechanical & Manufacturing)/Bachelor of Laws requires a total of 600 points over six years. Students are required to complete 300 points of Engineering subjects and 300 points of Law subjects.<br>First-year students acquire a flexible, broad scientific training in mathematics, computing and physics and an introduction to engineering.<br>Second-year students continue with mathematics and are introduced to engineering design plus basic mechanical engineering sciences (thermodynamics, fluid mechanics, mechanics and machine dynamics), materials and electro-mechanical system modelling.<br>Third year students continue engineering science, engineering design, manufacturing studies and control systems.<br>Fourth year includes a major project and electives in advanced engineering; in manufacturing, bioengineering, applied mechanics, fluids, energy, mechatronics and management. Students planning to enter industry directly after graduating can choose how best to prepare for their careers, bearing in mind that many design and research engineers move into management. Many students participate in industry challenges such as the Formula SAE-A competition, or other build and demonstrate projects that are world competitive.<br>In laboratory, research and design work students have access to specialised facilities for materials testing, wind tunnels, engine test cells and a heavy engineering workshop for the manufacture of testing facilities and experimental equipment. |

Engineering design, which draws on the Faculty's extensive computer facilities and computational mechanics, is now established as an area of study and research in conjunction with computer science.

Graduate research programs are available in aspects of mechanical, mechatronics, manufacturing and bioengineering. The department is internationally regarded in fluid mechanics, advanced automotive engineering technology, machine dynamics, mechatronics and biomedical engineering.

**Objectives:**

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**Course Structure & Available Subjects:**

THE COURSE STRUCTURE BELOW ONLY APPLIES TO RE-ENROLLING STUDENTS WHO COMMENCED THEIR STUDIES PRIOR TO 2008

The recommended or standard course structures are listed below. When setting the timetable every effort will be made to avoid clashes between the times of classes associated with these sets of subjects. Students should be aware however, that if it proves to be impossible to achieve a timetable without clashes in these sets of subjects, the Faculty reserves the right to modify course structures in order to eliminate the conflicts. Students will be advised during the enrolment period of the semester if the recommended courses need to be varied. Where the courses include elective subjects these should be chosen so that timetable clashes are avoided. In particular, students in combined degrees should plan their courses so that the subjects chosen in the other faculty do not clash with those recommended for the engineering component.

**Majors/Minors/ Specialisations**

Note: Students who commenced 3rd year in 2009 and have not completed (or who have failed) the third year subjects required in the Bachelor of Engineering degree please see a course adviser.

**Subject Options:**

**Fourth Year**

Subjects listed below **MUST** be taken in this approved order, regardless of semester availability.

**Semester 1**

| Subject | Study Period Commencement: | Credit Points: |
|---|---|---|
| LAWS30004 Property | Semester 1 | 12.50 |
| MCEN30004 Thermofluids 2 | Semester 1 | 12.50 |
| MCEN30009 Engineering Design & Processes 1 | Semester 1 | 12.50 |

Law Subjects as required (12.5 points)

**Semester 2**

| Subject | Study Period Commencement: | Credit Points: |
|---|---|---|
| MCEN30007 Mechanics 3 | Semester 2 | 12.50 |
| MCEN30001 Engineering Design & Processes 2 | Semester 2 | 12.50 |
| LAWS30004 Property | Semester 1 | 12.50 |

Law subject as required (12.5 points)

**Fifth Year**

Subjects listed below **MUST** be taken in this approved order, regardless of semester availability.

**Semester 1**

| Subject | Study Period Commencement: | Credit Points: |
|---|---|---|
| MCEN30008 Control Systems 1 | Semester 1 | 12.50 |

Law subjects as required (37.5 points)

### Semester 2

| Subject | Study Period Commencement: | Credit Points: |
|---|---|---|
| MCEN30005 Thermofluids 3 | Semester 2 | 12.50 |
| MAST30015 Statistics for Mechanical Engineers | Semester 2 | 12.50 |
| LAWS30008 Remedies | Semester 2 | 12.50 |
| LAWS30009 Legal Ethics | February, Semester 2 | 12.50 |

### Sixth Year

Subjects listed below **MUST** be taken in this approved order, regardless of semester availability.

### Year Long

| Subject | Study Period Commencement: | Credit Points: |
|---|---|---|
| MCEN40020 Major Project and Professional Practice | Year Long | 25 |

### Semester 1

Mechanical Elective Group 1 (12.5 points)

Law subjects as required (25 points)

### Mechanical Electives Group 1

Select one of the following electives:

| Subject | Study Period Commencement: | Credit Points: |
|---|---|---|
| MCEN40009 Mechanics 4 | Semester 1 | 12.50 |
| MCEN40010 Thermofluids 4 | Semester 1 | 12.50 |
| MCEN40018 Control Systems 2 | Semester 1 | 12.50 |

### Semester 2

Law Subjects as required (37.5 points)

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| **Entry Requirements:** | There will be no further entry into this course |
| **Core Participation Requirements:** | For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/ |
| **Graduate Attributes:** | The Bachelor of Engineering is a professional degree. Graduates can obtain professional recognition by joining Engineers Australia who has accredited these programs.The Bachelor of Engineering also delivers on the University graduate attributehttp://www.unimelb.edu.au/about/attributes.html |