### Mechanical Systems
Bachelor of Science

#### 2015 SAMPLE COURSE PLAN

<table>
<thead>
<tr>
<th>Leading subjects</th>
<th>Recommended subjects</th>
<th>Science electives</th>
<th>Major subjects</th>
<th>Breadth subjects</th>
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**First Year**

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<tr>
<th>Semester 1</th>
<th>ENGR10004 Engineering Systems Design 1</th>
<th>MAST10005 Calculus 1</th>
<th>Physics is recommended</th>
<th>Breadth</th>
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<tbody>
<tr>
<td>Semester 2</td>
<td>ENGR10003 Engineering Systems Design 2</td>
<td>MAST10006 Calculus 2</td>
<td>Physics is recommended</td>
<td>Breadth</td>
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**Second Year**

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<tr>
<th>Semester 1</th>
<th>ENGR20004 Engineering Mechanics</th>
<th>MAST10007 Linear Algebra</th>
<th>COMP20005 Engineering Computation *</th>
<th>Breadth</th>
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<tbody>
<tr>
<td>Semester 2</td>
<td>MAST20029 Engineering Mathematics</td>
<td>ELEN20005 Foundations of Electrical Networks *</td>
<td>Science Elective</td>
<td>Breadth</td>
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**Third Year**

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<tr>
<th>Semester 1</th>
<th>MCEN30016 Mechanical Dynamics</th>
<th>MCEN30017 Mechanics &amp; Materials</th>
<th>Science Elective</th>
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<tr>
<td>Semester 2</td>
<td>MCEN30014 Mechanical Design</td>
<td>MCEN30018 Thermodynamics and Fluid Mechanics</td>
<td>Science Elective</td>
<td>Breadth</td>
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*recommended for students intending to follow the Master of Mechanical Engineering

http://www.eng.unimelb.edu.au/study/undergraduate/mechanical.html

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Mechanical Systems involves understanding the design, construction, operation and maintenance of machines, that is, practically anything with moving parts. Mechanical engineers develop and design new products (photocopiers, air conditioners) and the machines to make them (robots, machine tools). They also design, plan and manage the systems, people and technical facilities needed to produce goods and services (power stations, manufacturing systems).

Mechanical engineers are concerned with the generation and harnessing of energy (gas turbines, wave power), transport in all its forms (automobiles, spacecraft) and protecting the environment (solar heating, wind turbines).

This discipline interacts with all other branches of engineering, and is increasingly involved with other fields of study such as medicine and biology. Your studies will integrate fundamental science in mechanics with engineering principles, and you will learn to solve practical problems involving mechanical systems.

This major leads to a **Master of Engineering (Mechanical)** or a **Master of Engineering (Mechatronics)**, and professional registration as an engineer.

**What careers can this major lead to?**

Mechanical engineering graduates are noted for their broad problem-solving abilities, and are employed in leadership positions throughout the world. You can find employment in many industries, with work varying by industry and function. Mechanical engineering is one of the broadest engineering disciplines, allowing you a huge choice of career paths. You could specialise in:
• energy systems
• applied mechanics
• automotive design
• manufacturing
• materials
• plant engineering and maintenance
• pressure vessels and piping
• heating, refrigeration air-conditioning systems.

**What graduate courses does Mechanical Systems lead to?**
Graduates who major in Mechanical Systems will be eligible to continue on to the Master of Engineering (Mechanical) or a Master of Engineering (Mechatronic). You will also be well-placed to apply for:

- Professionally-focused graduate degrees in the sciences and technology, including biotechnology, environmental systems, informatics, management science, and nanotechnology
- Graduate degrees preparing for a wide range of professions including engineering, law, medicine and other health sciences, and teaching
- Masters and Honours pathways to research higher-degrees in the sciences and technology within the Melbourne Graduate School of Science, Melbourne School of Engineering, Melbourne School of Land and Environment, and the Faculty of Medicine, Dentistry and Health Sciences