Bachelor of Engineering (Automotive Engineering)(Honours)

Build on core studies in mechanical engineering, with a specialisation in automotive engineering to develop economical and sustainable automotive designs or solve automotive engineering problems.

You’ll study vehicle power systems, sustainable vehicle design and automotive manufacturing and vehicle handling and control, vehicle aerodynamics, and vehicle noise and vibration.

The program incorporates complete car design and has a focus on new technologies (e.g. Google driverless cars, full-electric, hybrid power trains and fuel cells) that benefits society. It takes a global view and is increasingly environmental in outlook.

This program is an outcome of industry and student demand.

Industry connections
In the final year of your studies you’ll undertake a major project that is either industry based or simulates an industrial situation.

In order to graduate from this program you must complete a minimum 12 weeks of engineering industry experience. This allows you to gain first-hand experience in an engineering practice environment under the supervision of a practising professional engineer. The engineering experience can take a range of forms in the nature and timing.

You may choose to undertake a six-month or one-year industry placement position, commencing in the middle or at the end of third year in either Australia or overseas with associated academic credit. You’ll gain valuable industrial experience that may lead to a full-time job upon completion of the program. This optional industry placement may lengthen the time needed to graduate by 6 or 12 months.

Career outlook
Automotive engineers are employed by major car, truck and bus companies, as well as racing teams and parts manufacturers.

Graduates from RMIT are working in F1 teams, Porsche, Ford, General Motors, Toyota, Audi, BMW, Daimler-Chrysler and Bosch.

Professional recognition
This program is fully accredited by Engineers Australia. Graduates of the program are eligible for graduate membership of Engineers Australia. Full membership as a professional engineer may be obtained after an appropriate period of professional practice.

Australia is one of 15 countries that are signatories to the International Engineering Alliance, also known as the Washington Accord, for professional engineers. The qualification of graduates from this degree is recognised in all countries that are signatories to the Accord.

The degree also satisfies the requirements of the Society of Automotive Engineers, Australia, for graduate membership.

International opportunities
Overseas ‘globalisation’ is very much a buzzword in automotive engineering. Car companies are linking up around the world, and mergers and takeovers are common. Many manufacturers produce vehicles for the world market. Engineers are increasingly expected to move around the world, and some manufacturers use Australia as the base for launching models into South-East Asia.

Reflecting this international theme, RMIT has strong links with universities and automotive companies worldwide.

You can elect to take some courses in European universities, and student exchanges and industrial placements have taken place with Germany, Switzerland, France, the UK and the USA.

Pathways
Graduates of the RMIT Associate Degree in Engineering Technology with a major in mechanical engineering who achieve a grade point average (GPA) of at least 2.0 out of 4.0 are guaranteed entry with two years’ credit (equivalent to 192 credit points).

Graduates of the RMIT Advanced Diploma of Engineering (Mechanical) with a GPA of at least 3.0 out of 4.0 may be able to receive up to 1.5 years’ credit (equivalent to 144 credit points) if successful in gaining a place.
Program structure

The program covers the following areas:

**Vehicle power systems:** An introduction to the development, design, specification, and operation of internal combustion engines for mobile applications with a focus on traditional spark-ignited and diesel engines. It also covers alternative power plants and fuels.

**Sustainable vehicle design and sustainable automotive manufacturing:** You’ll tackle and solve advanced engineering problems, particularly in the structural design and manufacturing of vehicles and automotive components. It represents the basis for the analysis and solution of problems related to modern automotive sustainable design and manufacturing and the advanced computer modelling techniques.

**Vehicle handling and control:** This covers performance prediction relatively early in the design process and identifies the conflicts in designing for optimal performance in different models.

**Vehicle aerodynamics:** The emphasis is on solving aerodynamic problems using a balance of computation and experimental techniques. The growing influence of styling on body shape is approached from both an artistic and a scientific viewpoint.

**Vehicle noise and vibration:** You’ll learn about the nature of sound, how to effectively document the human ear’s non-linear response to sound, understand the automotive body structure design’s role for improved noise and vibration, and characterise the relationship between noise and vibration. You’ll also learn to differentiate structure-borne and air-borne sources.

### Year 1

<table>
<thead>
<tr>
<th>Engineering, Society and Sustainability</th>
<th>Engineering Mathematics C</th>
<th>Computer Aided Design</th>
<th>Mechanics and Materials 1</th>
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### Year 2

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<tr>
<th>Maths and Stats for Aero, Mech and Auto</th>
<th>Mechatronics Principles</th>
<th>Mechanics and Materials 2</th>
<th>Engineering Dynamics</th>
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</thead>
<tbody>
<tr>
<td>Mechanical Design 1</td>
<td>University elective</td>
<td>University elective</td>
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### Year 3

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<tr>
<th>Engineering and Enterprise</th>
<th>Solid Mechanics 3</th>
<th>Mechanical Vibrations</th>
<th>Advanced Thermo-Fluid Mechanics</th>
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<tbody>
<tr>
<td>Vehicle Power Systems</td>
<td>Mechanics of Machines</td>
<td>Finite Element Analysis</td>
<td>Management of Vehicle Design and Research</td>
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### Year 4

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<tr>
<th>Professional Research Project 1</th>
<th>Vehicle Handling and Control</th>
<th>Program elective</th>
</tr>
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<tbody>
<tr>
<td>Professional Research Project 2</td>
<td>Program elective</td>
<td>University elective</td>
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#### Entrance requirements

Successful completion of an Australian Year 12 senior secondary certificate of education or equivalent.

#### Prerequisites

Current Year 12 prerequisites units 3 and 4 – a study score of at least 25 in Mathematical Methods (CAS) and a study score of at least 25 in any English (except EAL) or at least 30 in English (EAL).

#### Additional information

Non-Year 12 applicants may submit additional information if they would like it to be considered. For semester 1 intake, this can be completed through the VTAC Personal Statement online. For semester 2 intake, this can be completed through the personal statement in the Apply Direct application.