

955-AM Bachelor of Engineering (Mechanical & Manufacturing)/ Bachelor of Commerce

Year and Campus:	2009
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Level:	Undergraduate
Duration & Credit Points:	
Contact:	<p>Engineering Student Centre Ground Floor, Old Engineering Building The University of Melbourne Victoria 3010 AUSTRALIA Tel: +61 3 8344 6703 Fax: +61 3 9349 2182 Email http://eng-unimelb.custhelp.com (Engineering%20Student%20Centre%20%20Ground%20Floor,%20Old%20Engineering%20Building%20The%20University%20of%20Melbourne%20Victoria%203010%20AUSTRALIA%20%20Tel:%20+61%203%208344%206703%20Fax:%20+61%203%209349%202182%20%20Email%20http://eng-unimelb.custhelp.com)</p>
Course Overview:	<p>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.</p> <p>The combined degree of Bachelor of Engineering (Mechanical & Manufacturing)/Bachelor of Commerce requires a total of 500 points over five years. Students are required to complete 300 points of Engineering subjects and 200 points of Commerce subjects.</p> <p>A total of 200 commerce points must be completed. These include the five compulsory subjects 316-101 Introductory Macroeconomics, 316-102 Introductory Microeconomics, 316-130 Quantitative Methods 1, 325-201 Organisational Behaviour (students who commenced Bachelor of Commerce double degree in 2005 are not required to complete this subject) and at least one of 316-206 Quantitative Methods or 316-205 Introductory Econometrics or 325-210 Managerial Decision Analysis or 325-212 Market Research; at least 50 points at 100-level; and at least 50 points at 300-level (these must be completed at The University of Melbourne).</p> <p>First-year students acquire a broad scientific training in mathematics and computing and an introduction to engineering and to economics.</p> <p>Second-year students continue with mathematics and are introduced to engineering design plus basic mechanical engineering sciences (thermodynamics, fluid mechanics, mechanics and machine dynamics) and materials, plus quantitative economics.</p> <p>Third year students continue mechanics and machine dynamics and electro-mechanical system modelling. They also begin their commerce specialisation.</p> <p>Fourth year involves studies in thermodynamics, fluids, design, manufacturing and control, as well as electives in commerce.</p> <p>Fifth 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.</p> <p>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.</p>

	<p>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.</p> <p>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.</p>																																				
Objectives:	-																																				
Course Structure & Available Subjects:	<p>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.</p>																																				
Subject Options:	<p>THERE WILL BE NO FIRST YEAR ENTRY INTO THIS COURSE FROM 2008.</p> <p>Third Year</p> <p>Subjects listed below MUST be taken in this approved order, regardless of semester availability.</p> <p>Semester 1</p> <table border="1" data-bbox="389 958 1485 1167"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>325-201 Organisational Behaviour</td> <td>Semester 1, Semester 2</td> <td>12.500</td> </tr> <tr> <td>436-353 Mechanics 2</td> <td>Semester 1</td> <td>12.500</td> </tr> </tbody> </table> <p>Commerce Subject(s) as required (25 points)</p> <p>Semester 2</p> <table border="1" data-bbox="389 1223 1485 1431"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>436-354 Mechanics 3</td> <td>Semester 2</td> <td>12.500</td> </tr> <tr> <td>436-204 Systems Modelling</td> <td>Semester 2</td> <td>12.500</td> </tr> </tbody> </table> <p>Commerce Subject(s) as required (25 points)</p> <p>Fourth Year</p> <p>Subjects listed below MUST be taken in this approved order, regardless of semester availability.</p> <p>Semester 1</p> <table border="1" data-bbox="389 1581 1485 1843"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>436-351 Thermofluids 2</td> <td>Semester 1</td> <td>12.500</td> </tr> <tr> <td>436-382 Control Systems 1</td> <td>Semester 1</td> <td>12.500</td> </tr> <tr> <td>436-384 Engineering Design & Processes 1</td> <td>Semester 1</td> <td>12.500</td> </tr> </tbody> </table> <p>Commerce Subject(s) as required (12.5 points)</p> <p>Semester 2</p> <table border="1" data-bbox="389 1899 1485 2038"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>436-352 Thermofluids 3</td> <td>Semester 2</td> <td>12.500</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	325-201 Organisational Behaviour	Semester 1, Semester 2	12.500	436-353 Mechanics 2	Semester 1	12.500	Subject	Study Period Commencement:	Credit Points:	436-354 Mechanics 3	Semester 2	12.500	436-204 Systems Modelling	Semester 2	12.500	Subject	Study Period Commencement:	Credit Points:	436-351 Thermofluids 2	Semester 1	12.500	436-382 Control Systems 1	Semester 1	12.500	436-384 Engineering Design & Processes 1	Semester 1	12.500	Subject	Study Period Commencement:	Credit Points:	436-352 Thermofluids 3	Semester 2	12.500
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436-311 Engineering Design & Processes 2	Semester 2	12.500
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Commerce Subject(s) as required (25 points)

Fifth Year

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

Year Long

Subject	Study Period Commencement:	Credit Points:
436-492 Major Project and Professional Practice	Year Long	25.000

Semester 1

Mechanical Elective Group 1 (12.5 points)

Commerce subject(s) as required (25 points)

Semester 2

Mechanical Elective Group 2 (12.5 points)

Commerce subject(s) as required (25 points)

Mechanical Electives Group 1

Select two of the following electives:

Subject	Study Period Commencement:	Credit Points:
436-432 Thermofluids 4	Semester 1	12.500
436-470 Control Systems 2	Semester 1	12.500
436-431 Mechanics 4	Semester 1	12.500

Mechanical Electives Group 2

Select one of the following electives:

Subject	Study Period Commencement:	Credit Points:
436-415 Quality Engineering	Semester 2	12.500
436-414 Optimisation	Semester 2	12.500
436-436 Advanced Computational Mechanics	Semester 2	12.500
436-460 Advanced Engineering Materials	Semester 2	12.500
436-465 Advanced Fluid Mechanics	Semester 2	12.500
436-421 Power Generation Systems	Not offered 2009	12.500
436-443 Production Engineering	Not offered 2009	12.50
436-419 Computational Biomechanics	Semester 2	12.500
436-459 Advanced Control and Automation	Semester 2	12.500
436-386 Biomaterials	Semester 1	12.500
436-387 Cellular & Tissue Biomechanics	Semester 2	12.500
436-388 Introduction to Biomechanics	Semester 1	12.500

Core Participation Requirements:

<p>For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.</p> <p>It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and

reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: <http://services.unimelb.edu.au/disability>