

## Master of Engineering (Mechatronics)

<b>Year and Campus:</b>	2010
<b>Coordinator:</b>	Dr Chris Manzie
<b>Contact:</b>	<p>Melbourne School of Engineering Office            Building 173, Grattan Street            The University of Melbourne            VIC 3010 Australia</p> <p><b>General telephone enquiries:</b>            + 61 3 8344 6703            + 61 3 8344 6507</p> <p><b>Facsimiles:</b>            + 61 3 9349 2182            + 61 3 8344 7707</p> <p><b>Email:</b>  <a href="mailto:eng-info@unimelb.edu.au">eng-info@unimelb.edu.au</a> (<a href="mailto:eng-info@unimelb.edu.au">mailto:eng-info@unimelb.edu.au</a>)</p>
<b>Overview:</b>	<p>The professional Master of Engineering (Mechatronics) is a three-year full time program (300 credit points) also offered part time. Students will be able to enter the Master of Engineering (Mechatronics) via a number of pathways:</p> <ul style="list-style-type: none"> <li># Based on prior study of (suitable) Mathematics and (suitable) Science subjects at the first-year university level, plus a completed undergraduate degree, to complete 300 credit points of Master of Engineering study.</li> <li># Based on the prior completion of a "Mechanical Systems", "Electrical Systems" or "Software Systems" major in the New Generation/Melbourne Model Bachelor of Science to enter with 100 points of designated credit, to then complete 200 credit points of Master of Engineering study.</li> <li># Based on an undergraduate Bachelor of Engineering or equivalent, with up to 150 points of designated credit to be awarded based on individual evaluation, to complete (never less than) 150 credit points of Master of Engineering study.</li> </ul>
<b>Objectives:</b>	<p>This course has as its objectives that graduates should:</p> <ul style="list-style-type: none"> <li># Have a sound fundamental understanding of the scientific principles underlying technology;</li> <li># Have acquired the educational and professional standards of the professional institutions and boards with which the School's courses are accredited;</li> <li># Possess a broad knowledge base of their chosen discipline, and of other disciplines so as to facilitate effective communication with those other professionals with whom engineers routinely communicate;</li> <li># Understand the basic principles underlying the management of physical, human and financial resources;</li> <li># Have acquired the mathematical and computational skills necessary for the solution of theoretical and practical problems for further professional development and for meeting future changes in technology;</li> <li># Possess analytical, problem-solving and, where relevant, design skills, including those appropriate for sustainable development;</li> <li># Have verbal and written communication skills that enable them to make a meaningful contribution to the changes facing our society;</li> <li># Have developed professional ethics and responsibility towards the profession and the community;</li> <li># Have an appreciation of the interpersonal and management skills required by engineers in undertaking professional activities; and</li> <li># Understand the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development.</li> </ul>
<b>Structure &amp; Available Subjects:</b>	<p>The Master of Engineering (Mechatronics) consists of 300 points of study, typically across six semesters. This includes:</p> <ul style="list-style-type: none"> <li># 100 points of foundation study tailored to individual students who enter from non-Engineering backgrounds; and</li> <li># 200 points of mainly engineering discipline specific study at the level of depth required to practice as a professional engineer upon graduation, including a 25-point capstone project completed in the final year of study.</li> </ul> <p>From 2011, students entering with appropriate engineering background may be granted up to 150 point of credit. For example, students entering from the University of Melbourne new</p>

	<p>generation Bachelor of Science with an 'Engineering Systems' major will be granted 100 points of credit for the foundation year. Credit will also be granted to students who have completed a specified breadth sequence in the new generation Bachelor of Commerce or appropriate electives as part of any major in the new generation Bachelor of Science. Students entering from another institution may also be awarded credit in this way.</p> <p>As the Master of Engineering commences in 2010 only the first year of the structure and available subjects are shown. For further information about structures and subjects see: <a href="http://www.eng.unimelb.edu.au/Postgrad/MEng/me_mechatronics.html">http://www.eng.unimelb.edu.au/Postgrad/MEng/me_mechatronics.html</a> (<a href="http://www.eng.unimelb.edu.au/Postgrad/MEng/me_mechatronics.html">http://www.eng.unimelb.edu.au/Postgrad/MEng/me_mechatronics.html</a>)</p>																																													
Subject Options:	<p>Core and elective requirements in the Master of Engineering (Mechatronics)</p> <p>Students must complete 100 credit points (eight subjects) of core subjects in the first year of the Master of Engineering (Mechatronics).</p> <p><b>First year core subjects in the Master of Engineering (Mechatronics) for students commencing January (Semester 1) 2010</b></p> <p>Students who commence the Master of Engineering (Mechatronics) in January (Summer and Semester 1) 2010, must select the following core subjects in the first year of the Master of Engineering (Mechatronics) including 436-291 as a Summer subject</p> <table><tr><th>Subject</th><th>Study Period Commencement:</th><th>Credit Points:</th></tr><tr><td>ENGR20004 Engineering Mechanics</td><td>January, Semester 1, Semester 2</td><td>12.50</td></tr><tr><td>ENGR90021 Engineering Communication</td><td>Semester 1, Semester 2</td><td>12.50</td></tr><tr><td>MCEN30017 Mechanics &amp; Materials</td><td>Semester 1</td><td>12.50</td></tr><tr><td>COMP20005 Engineering Computation</td><td>Semester 1, Semester 2</td><td>12.50</td></tr><tr><td>MCEN30016 Mechanical Dynamics</td><td>Semester 1</td><td>12.50</td></tr><tr><td>MCEN40024 Solid Mechanics</td><td>Semester 2</td><td>12.50</td></tr><tr><td>MCEN90008 Fluid Dynamics</td><td>Semester 2</td><td>12.50</td></tr><tr><td>MAST20029 Engineering Mathematics</td><td>Summer Term, Semester 1, Semester 2</td><td>12.50</td></tr><tr><td>ELEN20005 Foundations of Electrical Networks</td><td>January, Semester 2</td><td>12.50</td></tr></table> <p><b>First year core subjects in the Master of Engineering (Mechatronics) for students commencing March (Semester 2) 2010</b></p> <p>Students who commence the Master of Engineering (Mechatronics) in July (Semester 2) 2010, must select the following core subjects in the first year of the Master of Engineering (Mechatronics)</p> <table><tr><th>Subject</th><th>Study Period Commencement:</th><th>Credit Points:</th></tr><tr><td>ENGR90021 Engineering Communication</td><td>Semester 1, Semester 2</td><td>12.50</td></tr><tr><td>COMP20005 Engineering Computation</td><td>Semester 1, Semester 2</td><td>12.50</td></tr><tr><td>ENGR20004 Engineering Mechanics</td><td>January, Semester 1, Semester 2</td><td>12.50</td></tr><tr><td>ELEN20005 Foundations of Electrical Networks</td><td>January, Semester 2</td><td>12.50</td></tr></table>	Subject	Study Period Commencement:	Credit Points:	ENGR20004 Engineering Mechanics	January, Semester 1, Semester 2	12.50	ENGR90021 Engineering Communication	Semester 1, Semester 2	12.50	MCEN30017 Mechanics & Materials	Semester 1	12.50	COMP20005 Engineering Computation	Semester 1, Semester 2	12.50	MCEN30016 Mechanical Dynamics	Semester 1	12.50	MCEN40024 Solid Mechanics	Semester 2	12.50	MCEN90008 Fluid Dynamics	Semester 2	12.50	MAST20029 Engineering Mathematics	Summer Term, Semester 1, Semester 2	12.50	ELEN20005 Foundations of Electrical Networks	January, Semester 2	12.50	Subject	Study Period Commencement:	Credit Points:	ENGR90021 Engineering Communication	Semester 1, Semester 2	12.50	COMP20005 Engineering Computation	Semester 1, Semester 2	12.50	ENGR20004 Engineering Mechanics	January, Semester 1, Semester 2	12.50	ELEN20005 Foundations of Electrical Networks	January, Semester 2	12.50
Subject	Study Period Commencement:	Credit Points:																																												
ENGR20004 Engineering Mechanics	January, Semester 1, Semester 2	12.50																																												
ENGR90021 Engineering Communication	Semester 1, Semester 2	12.50																																												
MCEN30017 Mechanics & Materials	Semester 1	12.50																																												
COMP20005 Engineering Computation	Semester 1, Semester 2	12.50																																												
MCEN30016 Mechanical Dynamics	Semester 1	12.50																																												
MCEN40024 Solid Mechanics	Semester 2	12.50																																												
MCEN90008 Fluid Dynamics	Semester 2	12.50																																												
MAST20029 Engineering Mathematics	Summer Term, Semester 1, Semester 2	12.50																																												
ELEN20005 Foundations of Electrical Networks	January, Semester 2	12.50																																												
Subject	Study Period Commencement:	Credit Points:																																												
ENGR90021 Engineering Communication	Semester 1, Semester 2	12.50																																												
COMP20005 Engineering Computation	Semester 1, Semester 2	12.50																																												
ENGR20004 Engineering Mechanics	January, Semester 1, Semester 2	12.50																																												
ELEN20005 Foundations of Electrical Networks	January, Semester 2	12.50																																												
Links to further information:	<a href="http://www.eng.unimelb.edu.au/Postgrad/MEng/me_mechatronics.html">http://www.eng.unimelb.edu.au/Postgrad/MEng/me_mechatronics.html</a>																																													
Related Course(s):	Master of Engineering																																													