

## ELEN90073 Advanced Topics in Control

<b>Credit Points:</b>	12.5
<b>Level:</b>	9 (Graduate/Postgraduate)
<b>Dates &amp; Locations:</b>	This subject is not offered in 2015.
<b>Time Commitment:</b>	Contact Hours: 36 hours of lecture Total Time Commitment: 200 hours
<b>Prerequisites:</b>	Enrolment in a research higher degree (Masters or PhD) in Engineering
<b>Corequisites:</b>	None
<b>Recommended Background Knowledge:</b>	None
<b>Non Allowed Subjects:</b>	None
<b>Core Participation Requirements:</b>	<p>&lt;p&gt;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.&lt;/p&gt;         &lt;p&gt;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: &lt;a href="http://services.unimelb.edu.au/disability"&gt;http://services.unimelb.edu.au/disability&lt;/a&gt;&lt;/p&gt;</p>
<b>Contact:</b>	Associate Professor Marcus Brazil <a href="mailto:brazil@unimelb.edu.au">brazil@unimelb.edu.au</a> (mailto:brazil@unimelb.edu.au)
<b>Subject Overview:</b>	<p><b>AIMS</b></p> <p>Control is about optimising properties of a system by making use of feedback. This subject is intended to give students a rigorous introduction to the theory and techniques in several advanced areas of control with applications to electrical, electronic and systems engineering.</p> <p><b>INDICATIVE CONTENT</b></p> <p>The course content will include a selection of topics from:</p> <ul style="list-style-type: none"> <li>1 Advanced linear control</li> <li>2 Advanced non-linear control, including:             <ul style="list-style-type: none"> <li># Robust control</li> <li># Adaptive control</li> <li># Stochastic control</li> </ul> </li> </ul>
<b>Learning Outcomes:</b>	<p><b>Intended Learning Outcomes (ILO)</b></p> <p>Having completed this subject it is expected that the student be able to:</p> <ul style="list-style-type: none"> <li>1 Understanding of the basic theory underlying a number of areas of control</li> <li>2 Apply advanced results in linear and non-linear control theory to solve a range of relevant problems</li> </ul>
<b>Assessment:</b>	Continuous assessment of homework assignments, not exceeding 30 pages in total over the semester requiring (approximately 50-60 hours of work per student), worth 40%. Final examination, not exceeding three hours at the end of semester, worth 60%. Hurdle requirement: Students must pass the written exam to pass the subject. Intended Learning Outcome (ILO) 1 and 2 are assessed in the final exam and through submitted homework assignments.
<b>Prescribed Texts:</b>	None
<b>Breadth Options:</b>	This subject is not available as a breadth subject.

<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	<ul style="list-style-type: none"> <li># Ability to apply knowledge of basic science and engineering fundamentals</li> <li># In-depth technical competence in at least one engineering discipline</li> <li># Ability to undertake problem identification, formulation and solution</li> <li># Ability to utilise a systems approach to design and operational performance</li> <li># Expectation of the need to undertake lifelong learning, capacity to do so</li> <li># Capacity for independent critical thought, rational inquiry and self-directed learning</li> <li># Intellectual curiosity and creativity, including understanding of the philosophical and methodological bases of research activity</li> <li># Openness to new ideas and unconventional critiques of received wisdom</li> <li># Profound respect for truth and intellectual integrity, and for the ethics of scholarship</li> </ul>
<b>Related Course(s):</b>	Master of Philosophy - Engineering Ph.D.- Engineering