MCEN30008 Control Systems 1

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: Thirty-six hours of lectures, 12 hours of tutorials and practical work Total Time Commitment: Estimated 120 hours
Prerequisites:	# **436-204 S (/view/2010/436-204)** ystems Modelling or # **431-221 (/view/2010/431-221)** Fundamentals of Signals and Systems.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability
Coordinator:	Dr Denny Oetomo
Contact:	Melbourne School of Engineering Office Building 173, Grattan Street The University of Melbourne VIC 3010 Australia General telephone enquiries + 61 3 8344 6703 + 61 3 8344 6507 Facsimiles + 61 3 9349 2182 + 61 3 8344 7707 Email **eng-info@unimelb.edu.au (eng-info@unimelb.edu.au)**
Subject Overview:	Upon completion students should be familiar with the concepts and terminology of classical linear control design including lead, lag and lag-lead controllers and PID control; know how to draw and analyse Nyquist plots and the root locus; be familiar with the basics of digital controlling including quantisation, ADC, DAC, Z-transforms and design by emulation; understand the principles of filtering and amplification; including filter design, signal conditioning, sensor characteristics and non-linear effects; be able to perform and analyse Fast Fourier Transforms and Discrete Fourier Transforms; and understand how to program PLCs.
Objectives:	To introduce the classical linear control concepts, as well as design and analysis of tools for linear time invariant systems.
Assessment:	Assessment for this subject includes:One 3-hour end-of-semester examination (70%); Two assignments each up to 15 pages (20%) and One laboratory report of up to 15 pages (10%), to be submitted throughout the semester.

Prescribed Texts:	None
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	# Ability to apply knowledge of basic science and engineering fundamentals # Ability to communicate effectively, not only with engineers but also with the community at large # In-depth technical competence in at least one engineering discipline # Ability to undertake problem identification, formulation and solution # Ability to utilise a systems approach to design and operational performance # Capacity for independent critical thought, rational inquiry and self-directed learning # Intellectual curiosity and creativity, including understanding of the philosophical and methodological bases of research activity # Openness to new ideas and unconventional critiques of received wisdom
Related Course(s):	Bachelor of Engineering (Biomedical) Biomechanics Bachelor of Engineering (EngineeringManagement)Mechanical&Manufacturing Bachelor of Engineering (Mechanical &Manufacturing) and Bachelor of Arts Bachelor of Engineering (Mechanical &Manufacturing)& Bachelor of Science Bachelor of Engineering (Mechanical &Manufacturing)/Bachelor of Commerce Bachelor of Engineering (Mechanical and Manufacturing Engineering) Bachelor of Engineering (Mechatronics) and Bachelor of Computer Science Bachelor of Engineering(Mechanical & Manufacturing) and Bachelor of Laws