MCEN30016 Mechanical Dynamics

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: 36 hours of lectures, up to 12 hours of tutorials and 6 hours of laboratory sessions. Total Time Commitment: 120 hours
Prerequisites:	Postgraduate - # Admission into an engineering coursework Masters degree Undergraduate - # **436-291 Engineering Mechanics (/view/2009/436-291)** # **620-293 Engineering Mathematics (/view/2009/620-293)** (or **620-326 (/view/2009/620-326)** will need to be taken as a corequisite)
Corequisites:	If **620-293 Engineering Mathematics (/view/2010/620-293)** has not been completed, **620-326 (/view/2010/620-326)** will need to be taken as a corequisite
Recommended Background Knowledge:	**640-131 Physics 1 (/view/2010/640-131)** **640-132 Physics 2 (/view/2010/640-132)**
Non Allowed Subjects:	436-353 Mechanics 2
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
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Subject Overview:	This subject is concerned with the three-dimensional dynamics of rigid bodies, and with the modelling of a variety of mechanical devices as linear time-invariant systems, and the calculation of their responses in the time and frequency domains.
Objectives:	At the conclusion of this subject students should be able to: # Derive mathematical models of mechanical systems # Perform basic analysis on mathematical models of mechanical systems using tools in time and frequency domains # Predict the response of simple mechanical engineering systems.

Assessment:	Four assignments totalling no more than 5000 words (equally weighted 30% total). Two of the above assignments will be based on laboratory practical exercises.One 3 hour end of semester written examination (70%).
Prescribed Texts:	TBA
Recommended Texts:	N/A
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:	On completion of this subject, students should have developed the following skills - # Ability to apply knowledge of science and engineering fundamentals # Ability to undertake problem identification, formulation, and solution # Ability to utilise a systems approach to complex problems and to design and operational performance # Ability to undertake problem identification, formulation, and solution
Related Course(s):	Bachelor of Engineering Bachelor of Science
Related Majors/Minors/ Specialisations:	Master of Engineering (Mechanical) Master of Engineering (Mechatronics) Mechanical Systems