ENGR10003 Engineering Systems Design 2

Credit Points:	12.50
Level:	1 (Undergraduate)
Dates & Locations:	This subject is not offered in 2011.
Time Commitment:	Contact Hours: 3 x one hour lectures and 1 x three hour workshop per week Total Time Commitment: 120 hours.
Prerequisites:	A mark of at least 25 in VCE Math Methods or equivalent OR Admission into the Bachelor of Science course or the Bachelor of Biomedicine course.
Corequisites:	None
Recommended Background Knowledge:	**Subject** / **Study Period Commencement:** / **Credit Points:** ENGR10004 Engineering Systems Design 1 / Semester 1, Semester 2 / 12.50
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/
Contact:	Prof Jamie Evans (Semester 2) Email: **jse@unimelb.edu.au (mailto:jse@unimelb.edu.au)** Dr. Gavin Buskes (Summer Term) Email: **buskesgj@unimelb.edu.au (mailto:buskesgj@unimelb.edu.au)**
Subject Overview:	Engineering Systems Design 2 will develop the students' understanding of the engineering method and the importance of engineering in society. Engineering Systems Design 2 focuses on inter-relationships in engineering systems drawing on important examples from lightweight structures and digital electronic circuits. The importance of modelling change through dynamic models is also emphasized. This subject will prepare students for an exciting and rigorous engineering education that will allow them to serve the needs of an increasingly complex society.
Objectives:	At the completion of this subject students should be able to: # Analyse and design simple combinational logic circuits # Describe the inter-relationships in modelling a truss from the statics, materials and geometric perspectives # Apply Newton's second law and analyse simple particle dynamics in one and two dimensions # Write MATLAB programs of moderate complexity to assist in the design and analysis of engineering systems # Explain the concept of top-down design and give examples of design trade-offs
Assessment:	Weekly online assessment (10%),Weekly team-based projects and assignments (30% in total), and 1 written 3-hour end of semester examination (60%). Students must pass the end of semester examination to pass the subject
Prescribed Texts:	Introduction to Engineering: Modelling and Problem Solving, Jay B Brockman Wiley, 2009.

Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: # **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2011/B-ARTS)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2011/B-COM)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2011/B-MUS)** You should visit **learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)** and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	At the completion of this subject students should have developed their; # Problem solving and analytical skills # Capacity to tackle unfamiliar problems # Communication skills through written and oral presentations # Ability to plan work and be efficient in time management # Hands-on skills through practical projects # Sense of intellectual curiosity # Appreciation of different learning styles; and # Ability to work effectively in a team environment
Notes:	Students enrolled in the BSc (new degree only) will receive science credit for the completion of this subject. This subject is available as breadth for Bachelor of Arts, bachelor of Commerce, Bachelor of Environment and bachelor of Music.
Related Course(s):	Bachelor of Biomedicine Bachelor of Science
Related Majors/Minors/ Specialisations:	B-ENG Chemical Engineering stream B-ENG Chemical and Biomolecular Engineering stream B-ENG Civil Engineering stream B-ENG Electrical Engineering stream B-ENG Mechanical Engineering stream B-ENG Software Engineering stream
Related Breadth Track(s):	Mechanical Systems Electrical Systems