800-002 Engineering Systems Design 2

Credit Points:	12.50
Level:	1 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Summer Term, - Taught on campus. Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: Thirty-six hours of lecturesand 36 hours of workshops. Total Time Commitment: Estimated total time of commitment of 120 hours.
Prerequisites:	**800-001** Engineering Design Systems 1
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 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. 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: http://services.unimelb.edu.au/disability
Coordinator:	Prof Jamie Scott Evans
Subject Overview:	Engineering Systems Design 2 builds directly on Engineering Design Systems Design 1 by further developing 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. Together with Engineering Systems Design 1, 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. At the completion of this subject students should be able to: # Explain and give examples of the nature of inter-relationships in systems; # Describe the inter-relationships in modelling a truss from the statics, materials and geometric perspectives; # Describe the inter-relationships in modelling digital electronic circuits from the logical and electronic perspectives; # Explain what engineers mean by the state of a system, to recognize that the state of many important physical systems changes with time, and to give examples of why engineers need to model such dynamic systems; and # Write MATLAB programs of moderate complexity to assist in the design and analysis of engineering systems.
Objectives:	-
Assessment:	Subject journal (10%), 3 team-based projects due in weeks 4,8 and 12 of the semester (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/2009/D09)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2009/F04)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2009/M05)** 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.
Related Course(s):	Bachelor of Engineering
Related Majors/Minors/ Specialisations:	First year engineering systems