ELEN90066 Embedded System Design

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2012, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 24 hours of lectures and 36 hours of workshops Total Time Commitment: 120 hours
Prerequisites:	Prerequisite for this subject is:

Subject	Study Period Commencement:	Credit Points:
ELEN30010 Digital System Design	Semester 1	12.50

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:	Assoc Prof David Grayden
Contact:	Email:**elen-subjectenquiry@unimelb.edu.au (mailto:elen-subjectenquiry@unimelb.edu.au)**
Subject Overview:	This subject provides a practical introduction to the design of microprocessor-based electronic systems. The lectures and project work will expose students to the various stages in an engineering project (design, implementation, testing and documentation) and a range of embedded system concepts including: # Digital computer architecture, example microprocessor architectures, pipelining and caching, system-level programming in assembly language and C for a specific microprocessor ; # Bus standards and protocols, bus interfacing, interrupt servicing; # Operating systems concepts, multi-tasking, resource management and real-time issues; and # Interfacing to the analog world via analog-to-digital and digital-to-analog converters. This material will be complemented by exposure to standard software tools, including compilers and debuggers, and microprocessor development boards in the laboratory. The subject will include a level of industry engagement, to provide broader examples of engineering projects, through guest lectures.
Objectives:	On completing this subject the student should be able to: # Design and test the hardware components (microprocessor, bus and peripheral interfacing) of an embedded system # Develop and test the low-level software components of an embedded system

	# Conduct a small embedded system design project
Assessment:	One written examination, not exceeding three hours at the end of semester, worth 60%(must pass written exam to pass subject); Continuous assessment of submitted project work, not exceeding 40 pages over the semester, worth 40%.
Prescribed Texts:	TBA
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 # 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 # Ability to function effectively as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member # Ability to communicate effectively, with the engineering team and with the community at large
Related Majors/Minors/ Specialisations:	B-ENG Electrical Engineering stream Master of Engineering (Electrical) Master of Engineering (Mechatronics)