

ELEN90053 Electronic System Design

Credit Points:	12.5						
Level:	9 (Graduate/Postgraduate)						
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.						
Time Commitment:	Contact Hours: 2 x one hour lectures and 1 x three hour workshop per week Total Time Commitment: 200 hours						
Prerequisites:	Prerequisite for this subject is: ELEN90056 Electronic Circuit Design (../view/2011/ELEN90056) (prior to 2011, ELEN30007(431-331) Electronic Circuit Design 2)						
Corequisites:	None						
Recommended Background Knowledge:	None						
Non Allowed Subjects:	Anti-requisite for this subject is: <table border="1" data-bbox="389 882 1485 1030"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>ELEN40013 Electronic Circuit Design 3</td> <td>Not offered 2016</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	ELEN40013 Electronic Circuit Design 3	Not offered 2016	12.50
Subject	Study Period Commencement:	Credit Points:					
ELEN40013 Electronic Circuit Design 3	Not offered 2016	12.50					
Core Participation Requirements:	<p><p>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.</p> <p>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</p></p>						
Coordinator:	Dr Ranjith Rajasekharan Unnithan						
Contact:	Dr Ranjith Rajasekharan Unnithan Email: ranjith.rajasekharan@unimelb.edu.au (mailto:ranjith.rajasekharan@unimelb.edu.au)						
Subject Overview:	<p>AIMS</p> <p>This subject will explore the design of various electrical and electronic systems and provide students with a range of common and practical design techniques and circuits in the context of a guided laboratory based project.</p> <p>INDICATIVE CONTENT</p> <p>Subject may cover specific concepts surrounding the design and implementation of:</p> <ul style="list-style-type: none"> # Design process # Design for manufacture and assembly # Advanced PCB design # Oscillators # Phase-locked loops and frequency synthesis # Base-band signalling schemes and clock recovery 						

	<ul style="list-style-type: none"> # Mixers and logarithmic amplification # Automatic gain control # Filters # Synchronous detection # High-speed analog-digital conversion # High-frequency amplification # Low noise amplifiers # Power supply design # Batteries, battery charging systems, and management # Test and measurement # Sensors.
Learning Outcomes:	<p>INTENDED LEARNING OUTCOMES (ILO's)</p> <p>Having completed this subject the student is expected to:</p> <ol style="list-style-type: none"> 1 Apply practical knowledge of a range of standard electrical and electronic subsystems 2 Quantitatively analyse and design the behaviour of standard electrical and electronic subsystems 3 Integrate standard electrical and electronic subsystems 4 Select, design, implement and test a range of standard electrical and electronic subsystems.
Assessment:	<p>One written examination, not exceeding three hours at the end of semester, worth 55% Continuous assessment of submitted project work, not exceeding 40 pages over the semester (approximately 65-70 hours of work per student), worth 45%. Hurdle requirement: Students must pass the end of semester examination to pass the subject. Intended Learning Outcomes (ILO's) 1, 2, 3 and 4 are assessed in the written exam and in the submitted project work.</p>
Prescribed Texts:	TBA
Recommended Texts:	<p>P. Horowitz & W. Hill, <i>The Art of Electronics</i>, Cambridge University Press</p> <p>Additional recommended texts will be outlined throughout the lecture notes.</p>
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:	<p>Upon completion of this subject, students will have developed the following skills:</p> <ul style="list-style-type: none"> # 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 # Openness to new ideas and unconventional critiques of received wisdom # 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
Notes:	<p>Credit may not be obtained for both ELEN40013 (431-481) Electronic Circuit Design 3 and ELEN90053 Electronic System Design</p> <p>LEARNING AND TEACHING METHODS</p> <p>The subject is delivered through lectures and workshop classes that combine both tutorial and hands-on laboratory activities.</p> <p>INDICATIVE KEY LEARNING RESOURCES</p>

	<p>Students are provided with lecture slides, worked problem sets, project specifications, and reference text lists.</p> <p>CAREERS / INDUSTRY LINKS</p> <p>The subject prepares students towards careers in electronic engineering, product design, and instrumentation engineering roles and will provide the relevant exposure to industry standard engineering design tools through laboratory activities.</p> <p>Relevant Societies for Career and Professional Development:</p> <ul style="list-style-type: none"># Engineers Australia# IEEE (including Electron Devices Society, Circuits and Systems Society)
Related Majors/Minors/ Specialisations:	Master of Engineering (Electrical with Business) Master of Engineering (Electrical)