

ELEN30007 Electronic Circuit Design 2

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: Thirty six of lectures, 12 hours of tutorials and 12 hours of laboratory work Total Time Commitment: 120 hours
Prerequisites:	431-222 Electronic Circuit Design1, and 431-202 Engineering Analysis B or equivalent.
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 Ba-Ngu Vo
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Subject Overview:	This course will build on 431-222 and provide students with an understanding of the operation and design of a broader range of electronic circuits. Topics include: current mirrors (BJT and MOSFET); biasing transistors with current mirrors; transistor internal capacitances and high frequency models; common-emitter/source amplifiers at high frequencies; common-base amplifier; cascode amplifier; BJT and MOSFET differential pair (large and small signal characteristics, frequency response); feedback and stability (Miller effect, design of feedback amplifiers, compensation); output stages (class B and AB); analog multipliers; comparators and timers (Schmitt trigger, astable, monostable, integrated timers) analog filters (types and principles, frequency transformations, Sallen and Key designs).
Objectives:	On completing this subject the student should be able to: <ul style="list-style-type: none"> # Apply fundamental modelling techniques in the analysis and design of common electronic circuits; # Construct and test simple electronic circuits in the laboratory; # Use software tools to simulate the behaviour of electronic circuits.

Assessment:	One 3-hour end of semester examination, practice classes, tests assignments, laboratory reports and project reports, not exceeding 20 pages. Students will be notified of the weighting of assessment components at the beginning of the semester.
Prescribed Texts:	None
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>On completion of this subject students should have developed the following generic 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 • Ability to communicate effectively, with the engineering team and with the community at large
Related Course(s):	<p>Bachelor of Engineering (Computer Engineering) Bachelor of Engineering (Computer Engineering)/Bachelor of Science Bachelor of Engineering (Electrical Engineering) Bachelor of Engineering (Electrical) and Bachelor of Arts Bachelor of Engineering (Electrical) and Bachelor of Commerce Bachelor of Engineering (Electrical) and Bachelor of Laws Bachelor of Engineering (Electrical) and Bachelor of Science Bachelor of Engineering (Engineering Management) Computer Bachelor of Engineering (Engineering Management) Electrical Bachelor of Engineering (IT) Computer Engineering Bachelor of Engineering (IT) Electrical Engineering Bachelor of Engineering (Mechatronics) and Bachelor of Computer Science Postgraduate Certificate in Engineering</p>