

431-331 Electronic Circuit Design 2

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 1, - Taught on campus.
Time Commitment:	Contact Hours: Twenty-four hours of lectures. 12 hours of tutorials and 12 hours of laboratory work Total Time Commitment: Not available
Prerequisites:	431-221 Fundamentals of Signals and Systems, 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:	<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>
Coordinator:	Assoc Prof Graeme John Pendock
Subject Overview:	<p>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.</p> <p>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).</p>
Objectives:	<p>On completing this subject the student should be able to:</p> <ol style="list-style-type: none"> 1. Apply fundamental modelling techniques in the analysis and design of common electronic circuits; 2. Construct and test simple electronic circuits in the laboratory; 3. 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

Related Course(s):	Bachelor of Engineering (Computer Engineering)/Bachelor of Science Bachelor of Engineering (Electrical Engineering) Bachelor of Engineering (Mechatronics) and Bachelor of Computer Science
---------------------------	---