

431-210 Electrical Circuits 2

Credit Points:	12.500
Level:	Undergraduate
Dates & Locations:	2008, 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:	431-103 Electrical Circuits 1, 620-143 Applied Mathematics or equivalent
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
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>
Subject Overview:	<p>Students completing this subject will develop skills for performing circuit analysis on passive linear electrical networks, as well as gain an understanding of basic electrical technologies such as the three-phase supply, transformer and induction motor.</p> <p>Topics covered; AC single phase circuit analysis (phasor representation, capacitance and inductance, impedance and admittance); power in AC circuits (instantaneous and average, real and reactive, power factor); two port circuits (two port parameters and circuit analysis); response of RLC circuits; magnetic circuits (magnetic flux, magnetic materials, hysteresis, saturation, eddy currents); mutual inductance; transformer circuits (impedance transformations, equivalent circuits, power analysis); the induction motor (construction and principle, poles and synchronous speed, slip, torque, efficiency, speed); frequency selective circuits (filter types and terminologies, frequency response of simple RC filters).</p>
Assessment:	One 3-hour end of semester examination, practice classes, tests, assignments 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
Recommended Texts:	Information Not Available
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:	<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

	<ul style="list-style-type: none"> # understanding of the principles of sustainable design and development # understanding of professional and ethical responsibilities and commitment to them # expectation of the need to undertake lifelong learning, capacity to do so # capacity for independent critical thought, rational inquiry and self-directed learning # intellectual curiosity and creativity, including understanding of the philosophical and methodological bases of research activity
Related Course(s):	<p> Bachelor of Engineering (Computer Engineering) Bachelor of Engineering (Electrical Engineering) Bachelor of Engineering (EngineeringManagement) Computer Bachelor of Engineering (EngineeringManagement) Electrical Bachelor of Engineering (Mechatronics) and Bachelor of Computer Science </p>