

ELEN90056 Electronic Circuit Design

| Credit Points: | 12.50 | | | | | | | | | |
|--|---|----------------|----------------------------|----------------|--|------------------|-------|---------------------------------------|------------|-------|
| Level: | 9 (Graduate/Postgraduate) | | | | | | | | | |
| Dates & Locations: | 2011, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus. | | | | | | | | | |
| Time Commitment: | Contact Hours: 3 x one hour lectures and 1 x two hour workshop per week Total Time Commitment: Estimated total time commitment of 120 hours per semester | | | | | | | | | |
| Prerequisites: | Prerequisites for this subjects are: <table border="1" data-bbox="387 573 1485 779"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>ELEN30009 Electrical Network Analysis and Design</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>ELEN30011 Electrical Device Modelling</td> <td>Semester 2</td> <td>12.50</td> </tr> </tbody> </table> | Subject | Study Period Commencement: | Credit Points: | ELEN30009 Electrical Network Analysis and Design | Semester 1 | 12.50 | ELEN30011 Electrical Device Modelling | Semester 2 | 12.50 |
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| ELEN30009 Electrical Network Analysis and Design | Semester 1 | 12.50 | | | | | | | | |
| ELEN30011 Electrical Device Modelling | Semester 2 | 12.50 | | | | | | | | |
| Corequisites: | None | | | | | | | | | |
| Recommended Background Knowledge: | None | | | | | | | | | |
| Non Allowed Subjects: | Anti-requisite for this subject is: <table border="1" data-bbox="387 976 1485 1126"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>ELEN30007 Electronic Circuit Design 2</td> <td>Not offered 2011</td> <td>12.50</td> </tr> </tbody> </table> | Subject | Study Period Commencement: | Credit Points: | ELEN30007 Electronic Circuit Design 2 | Not offered 2011 | 12.50 | | | |
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| ELEN30007 Electronic Circuit Design 2 | Not offered 2011 | 12.50 | | | | | | | | |
| 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: | Dr Tharshan Vaithianathan | | | | | | | | | |
| Contact: | Email: elen-subjectenquiry@unimelb.edu.au (mailto:elen-subjectenquiry@unimelb.edu.au) | | | | | | | | | |
| Subject Overview: | This subject provides an in-depth coverage of transistor (MOSFET and BJT) devices and their use in common circuits. In particular, students will study topics including: transistor operating modes and switching; principles of CMOS circuits; transistor biasing; current-source/emitter-amplifiers; low-frequency response; followers; class B amplifiers; current limiting; current sources and mirrors; differential pairs; feedback in amplifiers and stability; operational amplifiers; operational amplifier circuits; and voltage regulation. This material will be complemented by exposure to circuit simulation software tools and the opportunity to further develop circuit construction/test skills in the laboratory. | | | | | | | | | |
| Objectives: | On completing this subject the student should be able to: <ul style="list-style-type: none"> # Model and quantitatively analyse circuits with transistors and other nonlinear devices; # Design and test amplifier circuits; # Construct and test electronic circuits in the laboratory; # Use software tools to simulate the behaviour of electronic circuits. | | | | | | | | | |

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| Assessment: | One written examination, not exceeding three hours at the end of semester, worth 70%; Continuous assessment of submitted project work, not exceeding 20 pages over the semester, worth 20%;andA one-hour mid-semester test, worth 10%. |
| Prescribed Texts: | TBA |
| Recommended 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: | <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 |
| Notes: | Credit may not be obtained for both ELEN30007(431-331) Electronic Circuit Design 2 and ELEN90056 Electronic Circuit Design |
| Related Majors/Minors/ Specialisations: | B-ENG Electrical Engineering stream Master of Engineering (Electrical) |