Course Specification

Description: Electronic Design and Analysis

<table>
<thead>
<tr>
<th>Subject</th>
<th>Cat-Nbr</th>
<th>Class</th>
<th>Term</th>
<th>Mode</th>
<th>Units</th>
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<tr>
<td>ELE</td>
<td>2504</td>
<td>10563</td>
<td>1, 2002</td>
<td>EXT</td>
<td>1.00</td>
<td>TW MBA</td>
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Academic Group: FOENS
Academic Org: FOES04
HECS Band: 2
ASCED Code: 031303

STAFFING
Examiner: Mark Norman
Moderator: David Parsons

PRE-REQUISITES
Pre-requisite: ELE 1502 and ELE 2103 Co-requisite: ELE 2601

SYNOPSIS
Familiarity with electronic devices and circuits is fundamental to electrical engineering. The material covered here will further develop both in breadth and depth that which was covered in the preceding courses, with a significant emphasis on developing design skills. Topics to be covered will include: semiconductor devices (discrete and integrated), logic families, multistage amplifiers, operational amplifiers, active filters, negative and positive feedback, oscillators, power supplies and selected circuits used in communication systems.

OBJECTIVES
After successfully completing this course, a student will be able to:
- describe the principle of operation and typical application of common semiconductor devices such as diodes, transistors, linear and digital integrated circuits;
- understand the principle of operation and design of a wide range of electronic circuits such as amplifiers, power supplies, filters etc;
- accurately interpret complex circuit diagrams and standard drawings related to other engineering fields; and
- practically develop and test electronic circuit designs.
TOPICS

Description Weighting (%)  
1. Semiconductors 10.00  
2. Logic circuits 10.00  
3. Amplifiers 20.00  
4. Operational amplifiers 20.00  
5. Power supplies 15.00  
6. Feedback 15.00  
7. Communications systems 5.00  
8. Miscellaneous 5.00  

TEXT and MATERIALS required to be PURCHASED or ACCESSED:

Books can be ordered by fax or telephone. For costs and further details use the 'Book Search' facility at http://bookshop.usq.edu.au by entering the author or title of the text.

Hand tools: 1 small long nose pliers (smooth jaw), 1 wire cutter/strippers, 1 small screw driver (3mm flat blade).

Circuit Prototyping Breadboard.

Programmable scientific calculator.


REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

Integrated Circuit Manufacturers Databooks.

STUDENT WORKLOAD REQUIREMENTS

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
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<tbody>
<tr>
<td>Assessment</td>
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<td>Directed Study</td>
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<td>Examinations</td>
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<td>Private Study</td>
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<td>Project Work</td>
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<td>Report Writing</td>
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ASSESSMENT DETAILS

<table>
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<tr>
<th>Description</th>
<th>Marks Out of</th>
<th>Wtg(%)</th>
<th>Required</th>
<th>Due Date</th>
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<td>3 HOUR OPEN EXAMINATION 500.00</td>
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NOTES:
1. Further details about the due dates are detailed in the assessment section of the Course Specifications.
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10. Further details about the due dates are detailed in the assessment section of the Course Specifications.

OTHER REQUIREMENTS

1. In order to successfully complete the course, students must normally obtain, in aggregate, 50 percent of the total marks allocated. In addition, students must normally achieve at least 50 percent of the marks allocated in each of the examination, the assignments, the CMA.
2. The due date for an assignment is the date by which a student must submit the assignment to the USQ. The onus is on the student to provide proof of the submit date, if requested by the Examiner.
3. Students must retain a copy of each item submitted for assessment. This must be produced within five days if required by the Examiner.
4. In accordance with University's Assignment Extension Policy (Regulation 5.6.1), the examiner of a course may grant an extension of the due date of an assignment in extenuating circumstances.
5. If students submit assignments after the due date without prior approval then a penalty of up to 20% of the total marks for the assignment will apply for each working day late.
6. In the event that a due date for an assignment falls on a local public holiday in their area, such as a Show holiday, the due date for the assignment will be the next day. Students are to note on the assignment cover the date of the public holiday for the Examiner's convenience.
7. The Faculty of Engineering and Surveying will NOT accept submission of hand written or typed assignments by facsimile, e-mail or computer diskette. Students in remote locations who do not have regular access to postal services may be given special consideration.
8. An open examination indicates that the candidate may have access to any material during the examination except the following: electronic communication devices, bulky materials, devices requiring mains power and material likely to disturb other students.
9. A minimum standard of communication skills must be demonstrated in order for a passing grade to be achieved.
10. The Faculty of Engineering and Surveying does not offer supplementary examinations.
11. Students who have undertaken all of the required assessments in a course but who have failed to meet some of the specified objectives of a course within the normally
prescribed time may be awarded the temporary grade: IM (Incomplete - Make up). An IM grade will only be awarded when, in the opinion of the examiner, a student will be able to achieve the remaining objectives of the course after a period of non directed personal study.

Students who, for medical, family/personal, or employment-related reasons, are unable to complete an assignment or to sit for an examination at the scheduled time may apply to defer an assessment in a course. Such a request must be accompanied by appropriate supporting documentation. One of the following temporary grades may be awarded IDS (Incomplete - Deferred Examination; IDM (Incomplete Deferred Make-up; IDSM (Incomplete Deferred Examination and Make-up).