The University of Southern Queensland

Course Specification

Description: Electrical and Electronic Practice A

<table>
<thead>
<tr>
<th>Subject</th>
<th>Cat-Nbr</th>
<th>Class</th>
<th>Term</th>
<th>Mode</th>
<th>Units</th>
<th>Campus</th>
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<td>18706</td>
<td>3, 2002</td>
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Academic Group: FOENS
Academic Org: FOES04
HECS Band: 2
ASCED Code: 031300

STAFFING
Examiner: Jim Ball
Moderator: John Leis

SYNOPSIS
The purpose of this practice course is to provide experimental support for the first level of all day or first and second level of all external programs in Electrical and Electronic Engineering, Computer Systems Engineering, Software Engineering and Instrumentation and Control Engineering. This course provides equipment familiarisation and safety information, together with experimental work in analog and digital electronics, waveform generation, combinational and sequential logic, DC circuits and machines, rectification, series resonance, power factor correction, transformers, AC motors and generators. The principle objectives are to allow the student to develop practical skills, and knowledge of devices, equipment and techniques, to reinforce the learning of theory and develop observation and interpretation skills, and to stimulate interest and develop self confidence.

OBJECTIVES
On successful completion of this unit students will be able to:

- Describe the operation and application of common electrical and electronic devices and test equipment.
- Test simple electronic analog and digital circuits.
- Use microprocessors in simple applications.
- Safely measure the performance of DC and AC motors, generators and transformers.
- Demonstrate observation, interpretation and communication skills.

TOPICS

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
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<tbody>
<tr>
<td>1. Equipment familiarisation</td>
<td>4.00</td>
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2. Amplifier characteristics 4.00
3. Logic Characteristics 4.00
4. Waveform generation 4.00
5. Combinational logic 4.00
6. Sequential logic 8.00
7. Microprocessors 16.00
8. Rectification 8.00
9. DC circuits, motors and generators 4.00
10. Power factor and resonance 8.00
11. AC machines 16.00
12. Technical reporting 20.00

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.


STUDENT WORKLOAD REQUIREMENTS

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Study</td>
<td>10</td>
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<tr>
<td>Residential Schools</td>
<td>40</td>
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ASSESSMENT DETAILS

<table>
<thead>
<tr>
<th>Description</th>
<th>Marks Out of</th>
<th>Wtg(%)</th>
<th>Required</th>
<th>Due Date</th>
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<tr>
<td>REPORTS AND ATTENDANCE RECORD</td>
<td>1.00</td>
<td>100.00</td>
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OTHER REQUIREMENTS

1. To be awarded a passing grade in this course students must complete at least 80% of the practical and other activities in the course.

2. The only final grades awarded in this course are Pass (P) or Fail (F) grades.
Day students will complete this laboratory work in conjunction with the courses listed above as co-requisites. In the case of external students this laboratory work will be performed during a one week residential school after completion of the first year of their external program.

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.

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.

Students must retain a copy of each item submitted for assessment. This must be produced within five days if required by the Examiner.

If students submit assignments after the due date without prior approval then a penalty of up to 20% of the assignment total marks will apply for each working day late.

The Faculty of Engineering and Surveying will NOT accept submission of hand written or typed assignments by facsimile, email or computer diskette. Students in remote locations who do not have regular access to postal services may be given special consideration.

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 Course Leader's convenience.

A minimum standard of communication skills must be demonstrated in order for a passing grade to be achieved.

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.

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