Description: Electrical and Electronic Practice C

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<tr>
<th>Subject</th>
<th>Cat-Nbr</th>
<th>Class</th>
<th>Term</th>
<th>Mode</th>
<th>Units</th>
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Academic Group: FOENS
Academic Org: FOES04
HECS Band: 2
ASCED Code: 031300

STAFFING
Examiner: Mark Norman
Moderator: Jim Ball

PRE-REQUISITES
Co-requisite: ELE 2601 and ELE 2504 or ELE 2503 and ELE 2702

SYNOPSIS
The purpose of this practice course is to provide experimental support for the 2nd level of day programs, and the 4th level of all external programs in Electrical & Electronic Engineering. This practice course provides equipment familiarisation and safety information, experience with prototyping together with experimental work in Rotating Machines, Transformers and Power Systems, Electronic Circuit Testing, Component and Circuit Characteristics, Waveform Analysis and Transmission Lines. The principle objectives are to allow the student to develop practical skills; a knowledge of devices, equipment and techniques; reinforce the learning of theory; develop observation and interpretation skills; stimulate interest and develop self confidence.

OBJECTIVES
On completion of this course, students should be able to:

- measure the transmission characteristics of cables and waveguides, and compare the results with theoretical predictions;
- analyse the frequency spectra of communication signal waveforms and compare the results with theoretical predictions;
- interpret and apply manufacturers’ data for electronic devices;
- select and use appropriate test equipment and procedures from a wide range of possibilities;
- measure the characteristics and/or performance of a wide range of electrical and electronic circuits and devices;
- analyse and interpret test results and measurements on electric and electronic circuits, in terms of theoretical models, and by comparison with the results of simulations;
- predict the performance of electric and electronic circuits from device characteristics;
- design electronic circuits to perform simple functions.

**TOPICS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
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<tbody>
<tr>
<td>1. Equipment familiarisation and safety information</td>
<td>8.00</td>
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<tr>
<td>2. Rotating machines</td>
<td>10.00</td>
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<td>3. Transformers</td>
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<td>4. Power Systems</td>
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<td>5. Electronic circuit testing</td>
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<td>6. Component and circuit characteristics</td>
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<td>7. Electronic Amplifiers</td>
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<td>8. Waveform analysis</td>
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<td>9. Transmission lines</td>
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**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.

*ELE2601 Telecommunication Principles, ELE2503 Electronic Systems or ELE2504 Electronic Design and Analysis, and ELE2702 Electrical Measurement and Analysis (Bachelor of Engineering students excepted), External Study Packages, USQ Publication,*


**STUDENT WORKLOAD REQUIREMENTS**

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
</tr>
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<tbody>
<tr>
<td>Laboratory or Practical Classes</td>
<td>40</td>
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<tr>
<td>Report Writing</td>
<td>10</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>VARIOUS LAB REPORTS</td>
<td>1.00</td>
<td>100.00</td>
<td>Y</td>
<td>18 Oct 2002</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.
3. This course will require attendance at a residential school.
4. This is a COMMUNICATION BENCHMARK course and a major component of the assessment of this course will be associated with the demonstration of communication skills.
5. A minimum standard of communication skills must be demonstrated in order for a passing grade to be achieved.
6. 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.
7. Students must retain a copy of each item submitted for assessment. This must be produced within five days if required by the Examiner.
8. 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).
9. 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.