Description: Telecommunications Principles

<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>ELE</td>
<td>2601</td>
<td>15156</td>
<td>2, 2002</td>
<td>ONC</td>
<td>1.00</td>
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Academic Group: FOENS
Academic Org: FOES04
HECS Band: 2
ASCED Code: 031307

STAFFING

Examiner: Bruce Varnes
Moderator: David Parsons

PRE-REQUISITES

Pre-requisite: ELE 1502 and ELE 1801

SYNOPSIS

The electronic communications industry is an essential part of the modern world. It provides two way communications for both voice and data services as well as radio and television broadcasts. This course introduces the building blocks and the principles on which typical electronic communications systems operate. It examines the nature of signals in both the time and frequency domain and considers how information signals may be transmitted using modulated carrier signals. Radio frequency transmission lines, radio wave propagation and basic antennas are included. In general the course considers systems which operate below 1 GHz.

OBJECTIVES

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

- describe in detail the principles upon which selected communication systems operate;
- analyse the operation of representative communication circuits and systems using block diagram and accompanying written explanations;
- predict or evaluate system parameters for particular applications;
- compare alternative methods of modulating information onto a carrier waveform;
- interpret mathematical or graphical descriptions of characteristics of communication system components.
TOPICS

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
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<tbody>
<tr>
<td>1. The Nature of Signals</td>
<td>10.00</td>
</tr>
<tr>
<td>2. Modulation Principles</td>
<td>20.00</td>
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<tr>
<td>3. Simple Radio Principles</td>
<td>15.00</td>
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<tr>
<td>4. Basic Principles of Television</td>
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<tr>
<td>5. Transmission Lines and Fibre Optics</td>
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<tr>
<td>6. Radio-Wave Propagation</td>
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<tr>
<td>7. Antennas</td>
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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.

*ELE2601 Telecommunications Principles External Study Package*, USQ Publication,


STUDENT WORKLOAD REQUIREMENTS

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
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<tr>
<td>Directed Study</td>
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<td>Examinations</td>
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<td>Lectures</td>
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<td>Private Study</td>
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<td>Tutorial</td>
<td>26</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>ASSIGNMENTS</td>
<td>200.00</td>
<td>20.00</td>
<td>Y</td>
<td>22 Jul 2002 (see note 1)</td>
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<tr>
<td>3 HOUR RESTRICTED EXAMINATION</td>
<td>600.00</td>
<td>80.00</td>
<td>Y</td>
<td>END S2 (see note 2)</td>
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NOTES:

1. Students will be advised of the due date when each assessment item is issued.
2. Student Administration will advise students of the dates of their examinations during the semester.
OTHER REQUIREMENTS

1. It is the on-campus students' responsibility to actively participate in all classes scheduled for them, and to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.

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

3. The due date for an assignment is the date by which a student must dispatch the assignment to the USQ. The onus is on the student to provide proof of the dispatch date, if requested by the Examiner.

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

5. In accordance with the 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.

6. 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.

7. 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.

8. 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.

9. The examination in this course is restricted. Apart from writing instruments, only a calculator may be brought into the examination by the student.

10. Students must note the make and model of the calculator used on the front of the Answer Book or Examination Paper where applicable. This may be subject to checking by the supervisor.

11. To receive a passing grade in this course a student must normally attempt all of the assessments and achieve at least 50% of the available marks for each item of assessment.

12. The final grades for students will be assigned on the basis of the aggregate of the marks obtained for each of the assessments in the course.

13. The Faculty of Engineering and Surveying does not offer supplementary examinations.

14. 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.

15. 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; or IDSM (Incomplete Deferred Examination and Make-up).