



Electronic & Electrical Engineering.

EEE260 COURSEWORK YEAR 2

Credits: 20

Course Description including Aims

This module is an academic year laboratory based module containing both set laboratory experiments and more open ended project work. The module aims are

- 1 To develop skills in experimental technique in a variety of different areas. To inculcate good lab book-keeping practice.
- 2 To expose students to a variety of measuring instruments ranging from very basic to very sophisticated.
- 3 To give students some experience of basic device fabrication processes.
- 4 Further to develop skills in observation of, and interpretation of, the physical behaviour of electronic systems.
- 5 To begin to appreciate the role of models and modelling in the technical design process, including the role of CAD in design evaluation.
- 6 Further to develop skills in the reporting and presentation of technical information.
- 7 To develop a critical attitude in students towards their own observations and those of others.
- 8 To be aware of experimental errors and of how to estimate their magnitude.
- 9 To develop the ability to search the literature for relevant information and make critical assessments of that information.

Outline Syllabus

AC Machines; Amplifiers; Microprocessors; Semiconductors; Transmission Lines; Signals and Systems (MATLAB based); Design Project

Time Allocation

150 hours of laboratory and project work over 2 semesters.

Recommended Previous Courses

EEE160 "Coursework Year 1"

Assessment

Continuous

Recommended Books

None are specified, but use of the library is encouraged.

Objectives

On successful completion of this module students will be able to

- 1 choose appropriate measurement techniques for normal experimental environments
- 2 use oscilloscopes and other instruments capable of automated measurement, understand the way those measurements are taken and hence appreciate some limitations of automatic measurement systems.
- 3 use LABVIEW to manage an experiment
- 4 use MATLAB as a modeling tool
- 5 fabricate a simple semiconductor device and evaluate its performance
- 6 make technical design decisions in a design project where cost and time impose constraints
- 7 report the results of experimental and design work in clear and concise written form
- 8 present orally the nature and performance of a design to a peer group
- 9 search the literature for relevant information and make critical assessments of that information
- 10 use computer and analytical models in the technical design process
- 11 maintain an accurate record of their experimental activities in a lab book