Department of Design, Manufacture and Engineering Management

MODULE DESCRIPTION FORM

56110 ENGINEERING INDUSTRY AND PROFESSION

Module Registrar: Dr Kepa Mendibil	**Taught To (Course):** 1st Year EEE Students	
Other Lecturers Involved: Dr W Ijomah	**Credit Weighting:** 10	**Semester:**
Assumed Prerequisites: None	**Academic Level:** 1	

Module Format and Delivery (hours):

Lecture	Tutorial	Laboratory	Project	Private Study	**Total**
24	12	–	24	40	100

General Aim

To provide an overview of industry.

To explain role and responsibility of the engineering profession and individual engineer.

Module is delivered to first-year undergraduate students in the specific context of electronic and electrical engineering together with relationship to mechanical engineering and computer systems.

Specific (Learning) Objectives

On completion of the module the student should be able to

INDUSTRY

- Describe major historical developments in electrical and electronic engineering.
- Identify successful companies and give reasons for that success.
- Describe different types and structure of industrial organisation, recognise advantages and disadvantages of each.
- Relate engineering to other business functions such as marketing, production, finance and human resources.
- Explain, with examples, how engineering interacts with society and the environment.

PROFESSION

- Illustrate the role of professional engineers; identify technical and personal characteristics which are required.
- Appreciate ethical issues relevant to engineers and industrial activity, including sustainable development.
- Explain the process of technical innovation and product design.
- Describe the nature of management and the role of technical managers in industry.
- Recognise the importance of leadership and interpersonal skills.
- Use formal techniques to help in making decisions.

Syllabus

INDUSTRY

- Historical development of engineering and specifically electrical technology
- Case studies of famous and influential engineers, historical and current
- Organisation and function of industrial activity.
- Economic, social and environmental context of engineering activity.
- Legal and social constraints.

PROFESSION

- Role of professional engineers: professional institutions, accreditation, education and professional development.
- Differences and similarities between traditional engineering disciplines.
- Relationship of engineering to other professions and to other functions within industry.
- Engineers and ethical issues; need for sustainable development.
- Nature of technical innovation and product design.

- Managing people and resources.
- Interpersonal skills: leadership, teamwork, negotiating, meetings.
- Making decisions.

The class will involve a high proportion of coursework, based both individually and as projects in small groups. Case studies will be employed. Presentation skills – both written and oral – will be developed and assessed.

Assessment Method(s) Including Percentage Breakdown and Duration of Exams

Examinations			**Courseworks**		**Projects**	
Number	Duration	***Max Marks***	Number	***Max Marks***	Number	***Max Marks***
			2	100		

Main Text Books

To be decided – the following are potentially suitable or have been used in similar classes:

A B Dunwoody, P J Cramond, S E Nesbit, C S Paterson and T N Teslenko. Fundamental competencies for engineers. Oxford University Press (2006)
D G Johnson. Ethical issues in engineering. Prentice Hall (1991)
G Kennedy. Everything is negotiable. Random House (3rd ed, 1997)
M G Velasquez. Business ethics: concepts and cases. Prentice Hall (6th ed, 2006)

Session: 2008/2009

APPROVED

Director of Teaching and Learning Signature: Mr G Mair

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