

MODULE DESCRIPTOR

Module Title

Engineering Design and Professional Development B

Reference	EN2605	Version	2
Created	November 2023	SCQF Level	SCQF 8
Approved	May 2020	SCQF Points	15
Amended	April 2024	ECTS Points	7.5

Aims of Module

To give students experience of the application of roles, conduct and responsibilities of professional engineers and give them experience in developing solutions to technical problems as part of an engineering team.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Use creative, analytical and design skills to achieve a specified requirement.
- 2 Act on the equality, diversity, inclusion, legal, social, quality management, environmental, and ethical responsibilities inherent to an engineer's role.
- 3 Write a group report showing development towards the key engineering competences.
- 4 Practice the legal, social, and ethical responsibilities of an engineer as a member of an engineering team.
- 5 Undertake the production of technical documentation while participating in a product demonstration.

Indicative Module Content

When working as a member of one of several student teams, a competitive element may be introduced. When working individually, an industrial or research work-based element may be appropriate with tutors or work colleagues fulfilling the role of team members. The need for professional conduct, maintenance of standards, and ethical values in engineering and the importance of quality management. The commercial, economic, social and EDI in the context of engineering. The role of engineers in sustainable development activities. Legal issues around technical contracts and engineering activities. Engineering issues around health and safety, liability, personnel, knowledge rights and risks. Importance of quality, use of emerging technologies and innovation to deliver engineering enhancements. Environmental concerns in engineering. Research and development project: Information searching, feasibility studies and costings.

Module Delivery

This is a laboratory practical module supplemented with tutorial sessions and directed study.

Indicative Student Workload

	Full Time	Part Time
Contact Hours	50	N/A
Non-Contact Hours	100	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	N/A
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Coursework	Weighting:	100%	Outcomes Assessed:	1, 2, 3, 4, 5
Description:	Portfolio submission comprising of: group report and practical demonstration of an engineering project.				

MODULE PERFORMANCE DESCRIPTOR**Explanatory Text**

Component 1 comprises 100% of the module grade. To pass the module, a grade D is required.

Module Grade	Minimum Requirements to achieve Module Grade:
A	A
B	B
C	C
D	D
E	E
F	F
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	None.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

- 1 Engineering Council (2013) UK Standard for Professional Engineering Competence (UK-SPEC), [http://www.engab.org.uk/engcdocuments/internet/Website/UK-SPEC%20third%20edition%20\(1\).pdf](http://www.engab.org.uk/engcdocuments/internet/Website/UK-SPEC%20third%20edition%20(1).pdf)
- 2 GAYTON, L., 2017, Legal Aspects of Engineering, 10th ed, Kendall/Hunt.
- 3 BAKSHI, B.R. 2019, Sustainable Engineering, CUP.
- 4 Walesh, S.G., 2012, Engineering Your Future: The Professional Practice of Engineering, 3rd ed, Wiley.
- 5 Chelsom, J.V. et al, 2005, Management for Engineering Scientists and Technologists, 2nd ed, Wiley.