

## MODULE DESCRIPTOR

### Module Title

Engineering Design and Professional Development

Reference	EN2602	Version	3
Created	May 2022	SCQF Level	SCQF 8
Approved	May 2020	SCQF Points	30
Amended	September 2022	ECTS Points	15

### Aims of Module

To make students aware of the role, 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 In the context of engineering projects and business understand the professional competences expected of an engineer and their responsibilities.
- 2 Understand the legal, social and ethical responsibilities of an engineer.
- 3 Produce a reflective statement showing development towards the key engineering competences.
- 4 Apply creative, analytical and design skills to produce a design to specified requirements within a team environment.
- 5 Contribute to the production of technical documentation and participate in a product demonstration.

### Indicative Module Content

The need for profession conduct, maintenance of standards and ethical values in engineering. The commercial, economic and social 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 enhancement. Enablers to deliver business success and customer satisfaction. Environmental concerns in engineering. Research and development project: Information searching, feasibility study and costings. Working as a team - team roles and accountability. Personal development as an engineer through reflective portfolio and understanding of engineering competencies.

### Module Delivery

This is a lecture based module supplemented with tutorial sessions, laboratory sessions and directed study.

**Indicative Student Workload**

	Full Time	Part Time
Contact Hours	72	N/A
Non-Contact Hours	228	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	300	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:	30%	Outcomes Assessed:	1, 2
Description:	Individual case study on a major project/company.				

**Component 2**

Type:	Coursework	Weighting:	70%	Outcomes Assessed:	3, 4, 5
Description:	Group project; including a technical report, presentation demo and individual reflective statement with evidence.				

**MODULE PERFORMANCE DESCRIPTOR****Explanatory Text**

The module has 2 components and to gain an overall pass a minimum D grade must be achieved in each component. The component weighting is as follows: C1(x axis) is worth 30% and C2 (y axis) is worth 70%.

		Coursework:						
		A	B	C	D	E	F	NS
Coursework:	A	A	A	A	B	E	E	
	B	B	B	B	C	E	E	
	C	B	C	C	C	E	E	
	D	C	C	D	D	E	E	
	E	E	E	E	E	E	F	
	F	F	F	F	F	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.