Prifysgol Wrecsam
Wrexham University

Module specification

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Module Code	ENG398
Module Title	Engineering Practice
Level	3
Credit value	20
Faculty	FACE
HECoS Code	100184
Cost Code	GAME

Programmes in which module to be offered

Programme title	Is the module core or option for this programme
STEM Foundation Year	Optional

Pre-requisites

None

Breakdown of module hours

Learning and teaching hours	24hrs
Placement tutor support	0 hrs
Supervised learning e.g. practical classes, workshops	24hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
Total active learning and teaching hours	**48** hrs
Placement / work based learning	0 hrs
Guided independent study	152 hrs
Module duration (total hours)	200 hrs

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Initial approval date	4 Sept 2024
With effect from date	Sept 2024
Date and details of revision	
Version number	1

Module aims

The aim of this module is to equip students with the knowledge, understanding and tools to become effective engineers in their chosen discipline. Using engineering council principles they will understand their social and economic responsibilities in an engineering design context.

Module Learning Outcomes - at the end of this module, students will be able to:

1	Explain the importance of engineering in a local and global context
2	Design a product from a given problem specification considering sustainability
3	Demonstrate awareness of the social, ethical and economic issues relating to a technical design project and their potential impact on the wider industry.
4	Deliver a technical presentation on a given topic in your subject area (DS)

Assessment

Indicative Assessment Tasks:
LO1-3 will be assessed through coursework: a design project on a given subject that will require students to create a prototype solution while LO4 will be assessed via presentation.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1, 2, 3	Coursework	90
2	4	Presentation	10

Derogations

None

Learning and Teaching Strategies

Aligned with the principles of the Active Learning Framework (ALF), the module will incorporate a blended digital approach utilising a Virtual Learning Environment (VLE). These resources may include a range of content such as first and third-party tutorials, instructional videos, supplementary files, online activities, and other relevant materials to enhance their learning experience.

The module will be delivered through a combination of lectures, tutorials, practical sessions. Interactive workshops will facilitate hands-on learning, while case studies and project work will allow students to apply their knowledge to real-world scenarios. Access to lecture materials and additional resources will be provided via the University's VLE platform.

Indicative Syllabus Outline

Professional Engineering

- Professional Recognition
- Health and Safety
- Equality Diversity and Inclusivity

- Cyber Security

Design

- Effective brainstorming, rapid application design and conceptualization.
- Research, design and planning.
- Phases of design, Evaluation, Design considerations, Codes and standards. Ethical considerations.
- Project lifecycle.

Practical Engineering

- Sketching
- Isometric and Orthographic drawings
- Basic CAD skills (Sketching, Extrusions,2D, 3D drawings etc)
- Rapid Prototyping techniques

Computer tools

- Word functions
- Excel function
- MS Project
- Powerpoint

Communication Skills

- Technical presentation
- Report writing
- Technical communications

Indicative Bibliography:

Please note the essential reads and other indicative reading are subject to annual review and update.

Essential Reads

Bystrom, M. and Eisenstein, B. (2005), *Practical engineering design. Boca Raton, Fl: Taylor & Francis.*

Other indicative reading

Raghavendra, N.V. and Krishnamurthy, L. (2013), *Engineering metrology and measurements.* New Delhi: Oxford University Press

Royal Academy of Engineering (2022), *Engineering Ethics: Maintaining society's trust in the engineering profession.*