

## Module specification

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Module Code	COM569
Module Title	Systems Engineering and Project Management
Level	5
Credit value	20
Faculty	FACE
HECoS Code	100162
Cost Code	GACP

### Programmes in which module to be offered

Programme title	Is the module core or option for this programme
BSc (Hons) Computer Science	Core
BSc (Hons) Computer Science with Industrial placement	Core
BSc (Hons) Cyber Security	Core
BSc (Hons) Cyber Security with Industrial Placement	Core
BSc (Hons) Software Engineering	Core
BSc (Hons) Software Engineering with Industrial Placement	Core

### Pre-requisites

N/A

### Breakdown of module hours

Learning and teaching hours	20 hrs
Placement tutor support	0 hrs
Supervised learning e.g. practical classes, workshops	10 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
<b>Total active learning and teaching hours</b>	<b>30 hrs</b>
Placement / work based learning	0 hrs
Guided independent study	170 hrs
<b>Module duration (total hours)</b>	<b>200 hrs</b>

<b>For office use only</b>	
Initial approval date	08/11/2023
With effect from date	Sept 2025
Date and details of revision	
Version number	1

## Module aims

This module focuses on concepts and practices related to managing complex engineering projects and applying systems engineering principles. It will explore the principles, methodologies, and processes of systems engineering, plus the project management techniques needed.

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

1	Apply systems engineering principles, methodologies, and processes to design and plan complex engineering systems.
2	Manage engineering projects effectively using industry standard techniques.
3	Analyse the requirements for engineering projects, ensuring alignment with stakeholder needs and project objectives.
4	Apply systems thinking, analysis techniques and model complex systems.
5	Identify and evaluate system boundaries, interfaces, system behaviour and performance.

## Assessment

Indicative Assessment Tasks:

*This section outlines the type of assessment task the student will be expected to complete as part of the module. More details will be made available in the relevant academic year module handbook.*

This maybe in the form of a case study where students, working in groups, are required to analyse the challenges and make recommendations using systems engineering and project management principles, concluding in a critical evaluation, reflecting on their learning experiences and personal growth.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1,2,3,4,5	Portfolio	100%



## Derogations

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None

## Learning and Teaching Strategies

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In line with the Active Learning Framework, this module will be blended digitally with both a VLE and online community. Content will be available synchronously and asynchronously and will include the key concepts, ideas, theories, and examples. Discussion boards and other online learning activities will allow for the further exploration of the topics to give students the opportunity to investigate, discuss and acquire further subject specific knowledge and understanding and how this applies to the real-world environment.

## Indicative Syllabus Outline

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Yearly content will be updated to represent the most appropriate content for current industry technologies, but a list of indicative topics could include:

- Introduction to Systems Engineering
- Project Planning and Management
  - Project lifecycle models
  - Scope management
  - Scheduling
  - Resource allocation
  - Risk management
  - Stakeholder engagement
- Systems Architecture and Design
- System Analysis and Decision Making
- System Integration and Testing
- Emerging Trends in Systems Engineering and Project Management

## Indicative Bibliography:

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

### Essential Reads

N/A.

### Other indicative reading

D. Avison and G. Fitzgerald, *Information Systems Development*, 4th ed., McGraw-Hill, 2006.

K. Schwalbe, *Information Technology Project Management*, 9th ed., Cengage Learning, 2019.

D. Kung, *Software Engineering*, 2nd ed., McGraw Hill, 2023.

I. Sommerville, *Software Engineering*, 10th ed., Pearson, 2016.

A. Dennis, B. Wixom and R. M. Roth, *Systems Analysis and Design*, 8th ed., Wiley, 2022.