MODULE DESCRIPTION FORM

DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING

16402 CASE STUDIES IN ENGINEERING

Module Registrar: Mr Cameron Johnstone cameron.johnstone@strath.ac.uk	**Taught To (Course): Cohorts for whom module is compulsory or optional**	
Other Lecturers Involved: Mr Jayson Cheyne jayson.cheyne@strath.ac.uk	**Credit Weighting: 10 (ECTS 5)**	**Semester: 1**
Compulsory/ optional/ elective module	**Academic Level: 4**	**Suitable for Exchange: Y**

Module Format and Delivery (HOURS i.e. 1 credit = 10hrs of study):

Lecture	Tutorial	Laboratory	Groupwork	External	Online	Project	Assignments	Private Study	**Total**
16							30	54	100

Educational Aim

Professional engineers need to have an awareness of the impact of engineering and technology on society. The module aims to highlight this by taking case studies from the whole spectrum of engineering industries and engineering careers, with deeper investigation of the selected area of engineering presented in an allocated case study. The class also aims to develop students' professional and soft skills including: communication, critical thinking and analysis, self-reflection report writing, presentation skills and teamwork.

Learning Outcomes

On completion of the module the student is expected to be able to:

LO1 be aware of the importance of engineering technology, design techniques, management approaches, statistical methods and appreciate their roles in society, as well as ways of mitigation of associated security risks.

LO2 understand the importance of careful engineering and recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion, through case studies from a variety of fields

LO3 appreciate the importance of leadership, teamwork and problem solving and further development of these skills

LO4 understand the importance of clear communication to the audience and further development of these skills by engagement in presentations (oral and written).

Syllabus

The module will teach the following:

- Variety of engineering achievements, applications and careers;
- Examples of engineering and industrial presentations;
- Attributes of a professionally written report;
- Attributes of a successful industrial product or problem focused presentation
- Professional approach to team work.

Examples of a variety of engineering achievements, applications and careers will be taken from the bio-medical, energy (including renewable), oil & gas, aerospace and civil fields and will cover project management, planning and industrial relations as well as the more traditional topics. Full use will be made of senior representatives from industry as well as visiting professors.

Assessment of Learning Outcomes

For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning:

LO1
C1 Students must develop understanding of engineering issues through attendance at case study lectures.
C2 Students must be able to identify and discuss the key engineering issues, including security risks, during tutorial sessions.
C3 Students must be able to identify and discuss the key engineering issues in presentations and written reports.

LO2
C1 Students must demonstrate an understanding of the importance of engineering design and product development and engineering practice in general in an industrial context.
C2 Students must be able to compare case studies from a variety of disciplines (also using external study) and demonstrate design concepts and solutions.
C3 Students must adopt an inclusive approach to engineering practice and recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion.

LO3
C1 Students must be able to work as part of a team (and lead when necessary) to submit successfully a group work.
C2 Students must be able to analyse critically the problem assigned by the team leader and merge the solution with the rest of the team, avoiding conflicts, as well as hearing the opinion of every member.

LO4
C1 Students must demonstrate their understanding of the format of a successful punchy presentation of a complex technical problem based on the analysis of 8 industrial speakers' presentations.
C2 Students must demonstrate effective writing skills and critical analysis through submission of the group report.
C3 Students must demonstrate communication/presentation skills through individual mini-presentations and professionalism in group work.

The standards set for each criterion per Module Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.

Principles of Assessment and Feedback
(within Assessment and Feedback Policy at: https://www.strath.ac.uk/professionalservices/staff/policies/academic)

Assessment consists of a group report, presentation, and peer assessment.

For this module, peer assessment will be applied to the group part of the course assessment (group report and presentation). Students will evaluate their peers' contributions to the assignment using Myplace. The students' grade will be determined by combining the staff grade for that assignment with the students' weighted contribution – determined from each member's evaluation of the student.

Feedback will be provided by the return of the report marks to students after the assessment of all group reports. Group report marks and feedback will be provided on-line. For presentations, feedback will be provided by the lecturer immediately after the presentation.

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

Coursework				**Lecture Participation**	
Group Report		**Group Presentation**			
Number	***Weighting***	Number	***Weighting***	Number	***Weighting***
1	50%	1	40%		10%
*LO1, LO2, LO3, LO4					

** **LOs**: Indicate which Learning Outcomes (L01, L02, etc) are to be assessed by exam/coursework/practical/project as required.*

Coursework / Submission deadlines (*academic weeks*):

The group report must be submitted 2 weeks after the assigned industrial lecture to the group.

The presentations will take place in weeks 9 and 10 of the semester, and peer assessment will take place in week 11.

Resit Assessment Procedures:
Resubmission of ^^coursework(s) prior to commencement of the July/August exam diet.

^^Students must contact the module Registrar for details as soon as results confirm that a resit is required.

PLEASE NOTE:
Students must gain a summative mark of 40% to pass the module. Students who fail the module at the first attempt will be re-assessed before the July/August exam diet. This re-assessment will consist entirely of coursework. No marks from any previous attempts will be transferred to a new resit attempt.

Recommended Reading

N/A

Additional Student Feedback
(Please specify details of when additional feedback will be provided)

Date	Time	Room No
December 2025 (exact date TBC)	TBC	TBC

Session: 2025/26

Approved:

Programme Lead/Director Signature: Dr Andrew McLaren

Date of Last Modifications: 04 August 2025

(MAE template updated June 2025)

MODULE TIMETABLE

Module Code:	**16402**	**Module Title:**	**Case Studies in Engineering**

Brief Description of Assessment:

1. Group report (worth 50%) represents a concise summary of the research performed during 2 weeks period on the topic allocated to the group.
2. Individual mini-presentation (worth 50%) represents the sum of the participation in the first tutorial with research/discussion (worth 10%) and presentation delivery (worth 40%) of the work performed by each group member on the problem allocated.
3. Online unconstrained quiz based on critical analysis of 8 industrial lectures – can be completed from the end of week 5 and must be completed prior to the presentation delivery during weeks 9-10.

Assessment Timing

Please note: Timings can and will change, this should only be used as a guide.

Semester One	W&D Wk	WK1	WK2	WK3	WK4	WK5	WK6	WK7	WK8	WK9	WK10	WK11	Exam Period
	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Course work Submit	Course work Submit	Course work Submit	Course work Submit	Course work Submit	Presentation Course work Submit	Presentation Course work Submit	Choose an item. Choose an item.	Choose an item.