MODULE DESCRIPTION FORM

DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING

16402 CASE STUDIES IN ENGINEERING

Module Registrar: Dr O Ganilova olga.ganilova@strath.ac.uk	Taught To (Course): Cohorts for whom class is compulsory or optional	
Other Lecturers Involved:	Credit Weighting: 10 (ECTS 5)	Semester: 1
Compulsory/optional/elective class	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	4						30	50	100

Educational Aim

Professional engineers need to have an awareness of the impact of engineering and technology on society. The class 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 team work.

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, technical sales, 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.

Tutorials will be used to have a deeper insight and understanding of the problem presented in an allocated industrial talk, share understanding and different points of view, as well as to explore modern alternatives through classroom presentations, debate and discussion.

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, an individual mini-presentation, assessment of level of participation/contribution in the allocated tutorial and a quiz.

The assessment begins with preliminary research and identification of the problem during the tutorial allocated to the group. Participation and contribution during this tutorial will be assessed. The problem identified will form the basis for the mini-presentation and technical contribution to the report.

All individual research outputs will be submitted as a group report. However mini-presentations will represent a summary of the work performed by each group member on the problem allocated in preparation of the group report. Therefore, not only will the group report be assessed but also the contents contribution put in by each individual member of the group.

An online unconstrained quiz is also part of the assessment and must be completed prior to the presentation delivery. To complete the quiz, 8 lectures must be attended and critically analysed in terms of delivery and style. The quiz completion gives a pass to the presentation and therefore failure to complete this means the student will not be allowed to present.

Formal, summative 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. Individual mini-presentation marks and feedback will be provided by the lecturer immediately after the presentation.

Marking schemes for both the group report and individual mini-presentations will be provided on MyPlace.

Informal feedback will be provided at the tutorial sessions primarily through verbal discussions, online – through forum discussions, and individually – by email and meetings on request.

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

Coursework				Online Assessment	
Group Report		**Individual Presentation**			
Number	***Weighting***	Number	***Weighting***	Number	***Weighting***
1	50%	1	50%	1	pass
*LO1, LO2, LO3, LO4				*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 online unconstrained quiz can be completed as soon as 8 industrial lectures have been attended but no later than the day before the individual mini-presentation delivery.
Individual mini presentations must be given during weeks 9 and 10 in lecture and tutorial sessions.
The group report must be submitted 2 weeks after the assigned industrial lecture to the group.
Participation/contribution assessment takes place during the first tutorial allocated to the group.

The tutorials are scheduled as:
- one 2h tutorial scheduled the same week as the industrial lecture assigned to a group.
- one 1h tutorial for delivery of the individual presentations.
- one 1h tutorial for discussion of the report writing techniques.

Resit Assessment Procedures:
Resubmission of coursework(s) prior to commencement of the 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 August 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 2023 (exact date TBC)	TBC	TBC

Session: 2023/24

Approved:

Course Director Signature: S Connolly (on behalf of E Henderson)
Date of Last Modifications: 25/08/2023

(Updated August 2023)

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.

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