



## MODULE DESCRIPTION FORM

### DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING

## 16402 (16460 sem1 / 16464 sem2) CASE STUDIES IN ENGINEERING

Module Registrar: Dr O Ganilova <a href="mailto:olga.ganilova@strath.ac.uk">olga.ganilova@strath.ac.uk</a>	Taught To (Course): Cohorts for whom class is compulsory / optional		
Other Lecturers Involved:	Credit Weighting: 10 (ECTS 5)	Semester: 1 and 2	
Assumed Prerequisites:	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
18	2x 3hr						30	46	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. The class also aims to develop students' soft skills including: communication, critical thinking and analysis, self-reflection 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 and technology and appreciate its interaction with society

LO2 understand the importance of careful engineering design 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:

- important engineering achievements and applications;
- examples of engineering product design and development;
- investigate failure analysis.

Examples 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 analyse actively the technical problems, share understanding and different points of view, as well as to explore modern alternatives through classroom presentations, debate and discussion.

### Assessment of Learning Outcomes

#### Criteria

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 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 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.

**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 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 5 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 peer marking in tutorial sessions.

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 and an individual mini-presentation. Mini-presentations will represent a summary of the work performed by each group member on the sub-problem allocated by the group leader in preparation of the group report. Therefore, not only will the group report be assessed but also the effort in its preparation put in by each individual member of the group.

An online quiz is also part of the assessment. To complete the quiz, 5 lectures must be attended and critically analysed in terms of delivery and style.

Formal, summative feedback will be provided by the return of the report marks to students after the assessment. Individual mini-presentation marks will be based on the peer assessment and the feedback will be provided by the peers.

Group reports will be assessed within 3 weeks after the submission, and the feedback will be provided on-line. Online quiz will be assessed within 3 weeks after the quiz is closed. Mini-presentation marks will be returned during the presentation tutorial.

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		
2	40%	2	40%	2	20%
*LO1, LO2, LO3, LO4				*LO4	

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

**Coursework / Submissions deadlines (*academic weeks*):**

The online quiz can be completed as soon as 5 industrial lectures have been attended but no later than week 11. Individual presentations must be given during the tutorial session a week after the assigned industrial lecture. The group report must be submitted 2 weeks after the assigned industrial lecture.

The tutorials are scheduled as:

- one 1h tutorial scheduled the same week as the industrial lecture assigned to a group and
- one 2h tutorial for the individual presentations a week after the 1h tutorial.

**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 during 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.**

16460 (Sem 1 5 credit module): Marks will be scaled to 100%

16464 (Sem 2 5 credit module): Marks will be scaled to 100%

**Recommended Reading**

N/A

**Additional Student Feedback**

*(Please specify details of when additional feedback will be provided)*

Date	Time	Room No
April 2022 (exact date TBC)	TBC	TBC

Session: 2021/22

**Approved:**

**Course Director Signature: Dr E Henderson (SG)**

**Date of Last Modifications: September 13, 2021**

(updated June 2021)

## MODULE TIMETABLE

Module Code:

16402/16464/16460

Module Title:

Case Studies in Engineering

### Brief Description of Assessment:

#### For each semester

1. Group report
2. Individual mini-presentation given to the group members
3. Online quiz based on critical analysis of 5 industrial lectures.

#### Assessment Timing:-

Indicate on the table below the start/submission dates for each assignment/project and the timing of each exam/assessment using the dropdowns provided. Dropdowns can be left blank. Add extra notes below the dropdowns.

**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.	Presentation None	Presentation Coursework Submit	Presentation Coursework Submit	Presentation Coursework Submit Online Test	Presentation Coursework Submit Online Test	Presentation Coursework Submit Online Test	Presentation Coursework Submit Online Test	Presentation Coursework Submit Online Test	Coursework Submit Online Test	Online Test	Choose an item.

Semester Two	C&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.	Presentation None	Presentation Coursework Submit	Presentation Coursework Submit	Presentation Coursework Submit Online Test	Presentation Coursework Submit Online Test	Presentation Coursework Submit Online Test	Presentation Coursework Submit Online Test	Presentation Coursework Submit Online Test	Coursework Submit Online Test	Online Test	Choose an item.

