

MODULE DESCRIPTION FORM

DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING

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

Module Registrar: Prof M M Stack margaret.stack@strath.ac.uk	Taught To (Course): Cohorts for whom class is compulsory / optional		
Other Lecturers Involved: Dr O Ganilova; Mr Iasonas Zekos	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	5						30	47	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 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 field and will cover project management, technical sales, planning and industrial relations as well as the more traditional topics. Full use will be made of visiting professors as well as senior representatives from industry.

Tutorials will be used to actively analyse the technical problems, share understanding and different points of view, as well as 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 Awareness of engineering issues through attendance of case study lectures.

C2 Identification and discussion of key engineering issues during tutorial sessions.

C3 Identification and discussion of key engineering issues included in presentations and written reports.

LO2

C1 Knowledge of importance of engineering design and product development in an industrial context.
 C2 Comparison of case studies from a variety of disciplines (also using external study) to demonstrate design concepts and solutions.

LO3

C1 Ability to work as part of a team (and lead when necessary) to successfully deliver the group oral presentations.
 C2 Critical analysis of the problem assigned by the team leader and ability to merge the solution with the rest of the team, avoiding conflicts as well hearing the opinion of every member.

LO4

C1 Develop understanding of the format of a successful punchy presentation of a complex technical problem based on the analysis of 5 industrial speakers' presentations.
 C2 Develop effective writing skills and critical analysis through submission of written assignments.
 C3 Develop communication/presentation skills through team presentations and tutorial discussions.

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/staff/policies/academic/>)

Assessment consists of an Individual Essay and a Group Presentation, targeting the development of different set of skills. Since the Essay requires a critical analysis of 5 presentations, attendance of 5 lectures is compulsory for submission of the Individual Essay.

Formal, summative feedback will be provided by the return of essay and presentation marks to students after assessment.

Individual Essays will be assessed within 3 weeks after the submission, and the feedback will be provided on-line. The oral presentation marks and feedback will also be provided on-line 3 weeks after delivery of the group presentation.

Marking schemes for both the Individual Essay and Group Presentation will be provided on MyPlace.

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

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

Examination				Essay		Presentation		Project	
Number	Month(s)	Duration	Weighting	Number	Weighting	Number	Weighting	Number	Weighting
				2	25% each	2	25% each		
*				* LO4		* LO1- LO3		*	

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

Coursework / Submissions deadlines (academic weeks):

Individual Essays can be submitted as soon as 5 industrial lectures are attended but no later than one week after the last lecture.

The tutorials are scheduled as:

- one 0.5h tutorial scheduled the same week as the lecture with the Case Study assigned to a group and
- one 2h tutorial for the Group Presentations one week after 0.5h tutorial.

Resit Assessment Procedures:

Submission of alternate coursework(s) prior to commencement of the August exam diet.

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.

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
		Check timetable webpages for details

Session: 2019/20

Approved:

Course Director Signature: Dr Stuart Grey

Date of Last Modifications: 30/8/19

(Updated July 2019)

MODULE TIMETABLE

Module Code:

16402/16464/16460

Module Title:

Case Studies in Engineering

Brief Description of Assessment:

For each semester

1. Group oral presentation (15 minutes + 10 minutes Q&A)
2. Individual Essay of 800 words with critical analysis of 5 industrial talks. To submit the Essay, attendance of at least 5 lectures is required.

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.	Choose an item. Choose an item.	Choose an item. Choose an item.	Presentation None	Presentation None	Presentation None	Presentation Course work Submit	Presentation Course work Submit	Presentation Course work Submit	Presentation Course work Submit	Presentation Course work Submit	Choose an item. 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.	Choose an item. Choose an item.	Choose an item. Choose an item.	Presentation None	Presentation None	Presentation None	Presentation Course work Submit	Presentation Course work Submit	Presentation Course work Submit	Presentation Course work Submit	Presentation Course work Submit	Choose an item. Choose an item.