DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING

ME538 PROFESSIONAL SKILLS FOR SENIOR ENGINEERS

Module Registrar: Dr Andrew McLaren andrew.mclaren@strath.ac.uk	Taught To (Course): Cohorts for whom module is compulsory	
Other Lecturers Involved: Dr Emma Henderson Dr Chris Triantafyllou	Credit Weighting: 10 (ECTS 5)	Semester: 1
Compulsory module	Academic Level: 5	Suitable for Exchange: N

Required pre-requisites

Note: It is the responsibility of ALL students to ensure that they satisfy the prerequisite knowledge for this module BEFORE adding as part of curriculum selection. If unsure, please contact the Module Registrar or discuss with your Programme/Year Adviser of Studies.

None

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

Lecture	Tutorial	Laboratory	Groupwork	External	Online	Project	Assignments	Private Study	Total
			88		2			10	100

Educational Aim

This module aims to develop students' understanding and engagement with leadership, performance and purpose within an industrial context, building a crucial foundation upon which to build their future career as senior engineers and decision makers. The module will explore the administrative challenges in managing a successful career as a senior level engineer and manager, considering such things as continuous improvement, quality management, equality, diversity and inclusion, and conflict resolution while working in teams from diverse backgrounds. The module will expose students to challenges from team formation and performance, time pressure, change and external constraints. Teams will be required to adapt to these challenges while maintaining focus on the achievement of contractual deliverables.

Students will also experience monitored personal development during the module with the aim of developing self-reflection and personal goal setting.

Learning Outcomes

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

LO1 Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.

LO2 Adopt an inclusive approach to engineering practice and recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion.

LO3 Communicate effectively, and separate professional disagreement of a technical and non-technical nature from personal criticism. Leverage conflict resolution techniques to come to successful outcomes.

LO4 Recognise areas for personal growth, plan and record self-development as the foundation for lifelong learning.

Syllabus

The module will teach the following:

Students will be allocated to a team, which will be composed of students from different cohorts (MEng on campus, MEng study abroad, MSc on campus, MSc online etc). This will give students an opportunity to work in a team environment with varying access requirements, which is an authentic preparation for professional life after graduation.

Each team will design a team challenge activity to complete during the semester and will describe their plan through an "elevator pitch" presentation in week 3. Module staff will review the pitch, provide feedback and give approval (or otherwise) to proceed. Teams will have an opportunity to refine their challenge plan in the light of staff feedback. Final plans will be presented in a second "elevator pitch" in week 6.

During the course of the challenge activity, staff will introduce change events to teams, which may include personnel or budgetary adjustments due to *external factors*. Teams must respond to these changes to ensure that the challenge objectives are met. This will simulate real-life scenarios that students may encounter in post-graduation practice.

Teams will present evidence of the completion of their challenge in week 10. The form of evidence will be challenge-specific and is to be justified by the team. Staff will determine whether the team has met the deliverables promised in the previous elevator pitch(es).

Each student will use the challenge as an opportunity to identify and develop personal competencies aligned to UK-SPEC. Each student will choose four UK-SPEC competencies to develop during the challenge and will present a reflective Personal development Portfolio in week 11. This will be assessed by staff.

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 Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.

  C1 Students will develop challenge level risk assessments considering a wide range of inputs and scenarios
  C2 Students will take ownership of management and mitigation of project risks in an uncertain environment

LO2 Adopt an inclusive approach to engineering practice and recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion.

  C1 Students will work in a diverse team with fellow students with whom they are unfamiliar, some of whom will be geographically distant
  C2 Students will dynamically adapt team roles to respond to changes in the prevailing conditions during the challenge activity

LO3 Communicate effectively, and separate professional disagreement of a technical and non-technical nature from personal criticism. Leverage conflict resolution techniques to come to successful outcomes.

  C1 Teams will manage and continuously evaluate the effectiveness of team communications throughout the challenge activity
  C2 Teams will resolve differences of opinion to reach a common plan and purpose in response to change and uncertainty
  C3 Members will critically reflect on their role in the team and how best to support the common team aims and objectives

LO4 Recognise areas for personal growth, plan and record self-development as the foundation for lifelong learning.

  C1 Identify four competencies from UK-SPEC to develop during the module
  C2 Critically evaluate level of competence at start of challenge activity
  C3 Plan personal development activity to develop competence in chosen areas
  C4 Submit personal reflective evaluation of the development of competences by end of module

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/)

Please state briefly how these are incorporated in this module.

PRINCIPLE 1. ASSESSMENT AND FEEDBACK PRACTICES PROMOTE EFFECTIVE STUDENT LEARNING:
Assessment activities have been designed to give student teams and individuals authentic experience of working in dynamic teams, planning and delivering a challenge in a complex and diverse working environment and performing under pressure of workload, change and deadlines.

PRINCIPLE 2. ASSESSMENT AND FEEDBACK PRACTICES ARE APPROPRIATE, FAIR, AND TRANSPARENT:
Assessment will be based on professional presentation and will be context-specific. Teams will design their mode of assessment of the final evidence according to the outputs of their team challenge.

PRINCIPLE 3. ASSESSMENT AND FEEDBACK PRACTICES ARE CLEARLY COMMUNICATED TO STUDENTS AND STAFF:
Staff will brief students and teams on the requirements for the module at the outset and will keep teams informed of all results and feedback throughout. Teams will be provided with exemplars of suitable challenges in the initial module briefing and staff will be available through MyPlace forums to answer questions of clarification.

PRINCIPLE 4. ASSESSMENT AND FEEDBACK PRACTICES ARE CONTINUOUSLY REVIEWED:
Staff will review assessment practices on this module and any refinements required will be introduced as soon as practicable. The nature of this module is very different from the majority of modules students will have studied before and student feedback on the module will be considered and reviewed by staff to inform future instances of the module.

Personal Development Portfolio				Team Challenge		
Number	Month(s)	Duration	**Weighting**	Number	Month(s)	**Weighting**
1	December		N/A	1	December	N/A
LO 4				LOs 1, 2 & 3		
Note: Each team must "pass" the team challenge **and** each student must "pass" the PDP.						

Coursework / Submissions deadlines (*academic weeks*):

Elevator Pitch 1 (team presentation), week 3
Elevator Pitch 2 (team presentation), start of week 6
Evidence of contract outcomes (team presentation/submission/demonstration), week 10
Personal Development Portfolio (individual submission), week 11

Note: due to the fast-paced nature of the challenges, no extensions or late submissions will be permitted for elevator pitch presentations. Deadlines for re-submission of "failed" elevator pitches will be determined by the module team (staff).

There will be no peer assessment. The team passes/fails as a team. All members are collectively responsible for the success of the challenge.

Resit Assessment Procedures:
Submission of alternate ^^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.

**NOTE: Assessment details apply under normal circumstances; alternative arrangements may be required during unforeseen periods of disruption.

PLEASE NOTE:

This module is pass/fail. Teams must successfully complete the team challenge and submit appropriate evidence of this. Students must individually pass the Personal Development Portfolio. Students/Teams who fail the module at the first attempt will be re-assessed prior to commencement of the August diet. This re-examination will consist entirely of coursework and oral examination. No marks from any previous attempts will be transferred to a new attempt.

Recommended Reading

No specific recommendations. (Teams will be expected to research sources appropriate to their challenge.)

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

Feedback is individually given to each team. Additional feedback is provided during/after each elevator pitch.

Session: 2025/26

Approved:

Programme Lead/Director Signature: Dr G Houston-Scott
Date of Last Modifications: 11 August 2025

(MAE template updated June 2025)

MODULE TIMETABLE

Module Code:	**ME538**	Module Title:	**Professional Skills for Senior Engineers**

Brief Description of Assessment:

Student teams will make two "elevator pitch" presentations to propose a team challenge activity and contract deliverables (week 3) and refine the team plan and deliverables (week 6). These will be assessed by staff as stage gates in the team challenge process.
Teams will present evidence of the delivery of contract deliverables to staff at the end of the challenge (week 10).
Each student will submit a Personal Development Portfolio (PDP) with critical reflection on the development of selected professional competencies, chosen from UK-SPEC (week 11).

Assessment Timing

Indicated on the table below are the start/submission dates for each assignment/project and the timing of each exam/assessment.

Please note: Timings could change during unforeseen periods of disruption; 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.	Presentation Elevator Pitch 1	Choose an item.	Choose an item.	Presentation Elevator Pitch 2	Choose an item.	Choose an item.	Choose an item.	Coursework Submit Evidence of outcomes	Coursework Submit PDP	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.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item.