Module Descriptor

Title	Introductory Management for Engineers		
Session	2025/26	**Status**	Published
Code	ENGG08030	**SCQF Level**	8
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	M Ayat		

Summary of Module

This module provides students with an introduction to management and organisation; to new product development, the design process. Micro and Macroeconomics are also introduced to contextualise the external environment and economics of production, with a general overview of the economic, management and business process aspects of Design for Manufacture (DfM).

Business Structure: The communication of complex functional organisation structures and the links between these and business processes such as PLM, fulfilment, production, planning, control and human resource management are discussed.

Basic Management Decision Making : Some strategic costing and justification techniques used to justify investment in new product development or product revision are illustrated. In addition, short term decision making methods, using basic accounting techniques, are presented.

Change Management: Change management frameworks and techniques are discussed and how they are implemented in the industrial environment. Further, team building process and its importance for the organisational success are covered.

Product Design : The importance of ergonomics, anthropometrics and aesthetics are discussed in the context of systematic approaches to product design, design model classification, DfM and work organisation.

The module will be illustrated both using classic and current texts, examples and methods where appropriate. Phases of PLM and its strategic and commercial importance are discussed. The pahses of PLM covered include but are not limited to those involving the identification of market need, preparing a specification, conceptual design, detail design, prototyping, testing, manufacturing, marketing and sales.

Process Improvement : Applications for Continuous Improvement techniques and quality initiatives:-Kaisen, QFD, six sigma and Lean.

During the course of this module students will develop their UWS Graduate Attributes (https://www.uws.ac.uk/current-students/your-graduate-attributes/). Universal: Academic attributes - critical thinking and analytical & inquiring mind; Work-Ready: Academic attributes – knowledgeable, problem solving; Successful : autonomous, driven and innovative.

This module has been reviewed and updated, taking cognisance of the University's Curriculum Framework principles. Examples of this are found within the module such as active and engaging tutorial activity with contemporary industry examples of modular content, module assessment which reflects industry activities, learning synergies across modules and levels of study and recorded lecture content supporting students to organise their own study time. Due to some of the unique content, this module is of particular importance in relation to PSRB AHEP-4 learning outcomes.

Module Delivery Method	**On-Campus**[1] ☒	**Hybrid**[2] ☐	**Online**[3] ☐	**Work -Based Learning**[4] ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☐ Lanarkshire ☐ London ☒ Paisley	☐ Online / Distance Learning ☐ Other (specify)	

Terms for Module Delivery	Term 1	☒	Term 2	☐	Term 3	☐
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
L1	Understand the structure of different types of organisation and identify the limiting features of particular structure types
L2	Demonstrate and apply Change management frameworks and identify the challenges to change initiatives in the Industrial environment
L3	Discuss the role of quality management systems and continuous improvement in the context of complex problems
L4	Identify, describe and apply the generic phases of the design process to generate a Product Design Specification (PDS) in accordance with current standards

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

L5	Critically analyse and evaluate academic texts through structured book reviews that engages with theoretical concepts and contextual discussions

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	**During completion of this module, there will be an opportunity to achieve core skills in:**
Knowledge and Understanding (K and U)	**SCQF 8** Product Lifecycle Management and Management in process oriented organisations. Change management frameworks and effective team building process. Financial and Management Accounting basic techniques e.g. profit and loss accounts, balance sheets, cash-flow, and through micro economic techniques such as break- even, payback and discounted cash flow for design project evaluation. The design process and engineering product design methodology, and the importance of the product design specification (PDS) in both financial and design contexts
Practice: Applied Knowledge and Understanding	**SCQF 8** Of spreadsheet applications in project feasibility and costing e.g. DCF problems. Of the application and use of a range of techniques and practices to produce a PDS and develop a design concept.
Generic Cognitive skills	**SCQF 8** IT-Use appropriate quantitative tools to the analysis of basic engineering design projects. Demonstrate the ability to monitor, interpret and apply the results of analysis and financial modelling. Ability to identify and analyse the roles required to manage a sustainable business process in terms of planning, control, decision making, problem solving and optimisation.
Communication, ICT and Numeracy Skills	**SCQF 8** Communication skills honed via written reports and presentations, demonstrating the ability to communicate engineering ideas and concepts. Computer and numeracy skills and developing the ability to analyse engineering data by means of various financial problem solving techniques. Appraise and critically evaluate the suitability and needs of a design concept to create a PDS
Autonomy, Accountability and Working with Others	**SCQF 8** Develop individual autonomy, group-working, time management, initiative and self- directed learning skills. Produce design solutions using initiative and informed judgment, contributing to a collective design solution within a product development team environment

Prerequisites	Module Code	Module Title
	Other	
Co-requisites	Module Code	Module Title

Learning and Teaching	
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours. The learning and teaching for this module will be delivered via weekly lectures and tutorials. Lectures will introduce the basic concepts of management for engineers. Tutorials will be in class to further develop students' understanding of the topics. The approach is learner-centred with students actively engaged in a range of tasks to promote engagement with. Students will be given sufficient time and support to work on assignments	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture / Core Content Delivery	24
Tutorial / Synchronous Support Activity	12
Independent Study	164
n/a	0
n/a	0
n/a	0
TOTAL	200

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Dawson, T. (2000) Principles and practice of modern management, Liverpool: Liverpool Academic Press. Hayes, J., (2022) The theory and practice of change management. London: Bloomsbury Publishing. Graetz, F., Rimmer, M., Lawrence, A., & Smith, A. (2006) Managing organisational change. Melbourne: Deakin University. Dyson, J., Franklin, E. (2017) Accounting for non-accountant students. London: Pearson Ulrich, K.T & Eppinger, S.D. (2000) Product Design & Development, Europe: McGraw-Hill. Smith, H. and Wall, T. (2023) A Coach's Guide to Team Building: Understanding Functions, Structure and Leadership. London: Open University Press
(N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements
In line with the Student Attendance and Engagement Procedure, Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time. **For the purposes of this module, academic engagement equates to the following:** Students are expected to attend every element of the programme of study. This refers to lectures, tutorial sessions and completing assessments and submiting these on time. UWS is committed to a proactive approach which focuses on formal and informal early warning indicators and will provide tools to track student attendance and engagement.

Equality and Diversity
The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code. In line with current legislation (Equality Act, 2010) and the UWS Equality, Diversity, and Human Rights Code, our modules are accessible and inclusive, with reasonable adjustment for different needs where appropriate. Module materials comply with University guidance on inclusive learning and teaching, and specialist assistive equipment, support provision and adjustment to assessment practice will be made in accordance with UWS policy and regulations. Where modules require practical and/or laboratory based learning or assessment required to meet accrediting body requirements the University will make reasonable adjustment such as adjustable height benches or assistance of a 'buddy' or helper.
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	**Please select**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☐ **Yes** ☒ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Design
Moderator	F Anvari
External Examiner	B Bryant
Accreditation Details	This module is part of the IMechE accredited programmes BEng/MEng (Hons) Mechanical Engineering
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	Version 2.01 (was 1.08) Module Descriptor copied to 2025/26 template, Attendance and Engagement and EDI statements updated. Some of the contents are refreshed. The LOs of the module is revised following the ILR feedback and to align with the assessment and revised contents.

	Updated the detail of module coordinator to Muhammad Ayat from James Findlay Updated the external examiner from P Lewis to B Bryant 1.09 (was 1.08) Module Delivery Changed to Face-To-Face from Hybrid C.

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Unseen Closed Book Class Test (60%)
Assessment 2
Portfolio of written work (40%)
Assessment 3
N/A
(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed. (ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Component 1							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Unseen Closed Book Class Test	☒	☒	☒	☐	☐	60%	2

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Portfolio of written work	☐	☐	☐	☒	☒	40%	0

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
N/A	☐	☐	☐	☐	☐		2
Combined total for all components						100%	hours

Change Control

What	**When**	**Who**
Version 2.01	March 2025	Muhammad Ayat

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