University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Introductory Management for Engineers			
Code: ENGG08028	**SCQF Level: 8 (Scottish Credit and Qualifications Framework)**	**Credit Points: 20**	**ECTS: 10 (European Credit Transfer Scheme)**
School:	School of Computing Engineering and Physical Sciences		
Module Co-ordinator:	Dr James Findlay		

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. The importance and role of Information Systems in the facilitation of cross-functional communications and in the orchestration of such large, complex multi-national organisations is presented.

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.

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					
Face-To-Face	**Blended**	**Fully Online**	**HybridC**	**Hybrid 0**	**Work-Based Learning**
☒	☐	☐	☐	☐	☐
See Guidance Note for details.					

Campus(es) for Module Delivery						
The module will **normally** be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit) (tick as appropriate)						
Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
☒	☐	☐	☐	☐	☐	

Term(s) for Module Delivery					
(Provided viable student numbers permit).					
Term 1	☒	Term 2	☐	Term 3	☐

Learning Outcomes: (maximum of 5 statements) At the end of this module the student will be able to:	
L1	Understand the structure of different types of organisation and identify the limiting features of particular structure types.
L2	Apply knowledge and understanding of the management ideas and techniques applied to the operation of industrial organisations, and understand the contribution of industry in the macro economy. Have knowledge and understanding of the application of financial management techniques required by industry.
L3	Identify, describe and apply the generic phases of the design process to generate a Product Design Specification (PDS) in accordance with current standards.
L4	Discuss the role of quality management systems and continuous improvement in the context of complex problems

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 Level **8** Product Lifecycle Management and Management in process oriented organisations, based on the scientific, classical and modern BPM approaches. The circular flow of income and of the role of industry as a producer, exporter and consumer of investment in the macro economy. 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 Level **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 Level **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 Level **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 Level **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	
Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code:	**Module Title:**
	Other:	
Co-requisites	**Module Code:**	**Module Title:**

*Indicates that module descriptor is not published.

Learning and Teaching	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	12
Tutorial/Synchronous Support Activity	24
Independent Study	164
	Hours Total 200

****Indicative Resources: (eg. Core text, journals, internet access)**
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Principles and practice of modern management; T Dawson; 2000 Accounting for non-accountant students; Dyson; 2017

Ulrich, KT & Eppinger, SD, 2000; Product Design & Development 2nd Edition, McGraw-Hill
(**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.

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.
(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	Engineering and Physical Sciences
Assessment Results (Pass/Fail)	Yes ☐No ☒
School Assessment Board	Engineering
Moderator	Farhad Anvari
External Examiner	P Lewis
Accreditation Details	This module is part of the IMechE accredited programmes BEng/Meng (Hons) Mechanical Engineering
Changes/Version Number	1.09 (was 1.08) Module Delivery Changed to Face-To-Face from Hybrid C.

Assessment: (also refer to Assessment Outcomes Grids below)
Component 1 – Unseen Closed Book Class Test (60%)
Component 2 – Portfolio of written work (40%)

(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.)

Assessment Outcome Grids (See Guidance Note)

Component 1						
Assessment Type (Footnote B.)	**Learning Outcome (1)**	**Learning Outcome (2)**	**Learning Outcome (3)**	**Learning Outcome (4)**	**Weighting (%) of Assessment Element**	**Timetabled Contact Hours**
Class test (written)	✓	✓	✓	✓	60	2

Component 2						
Assessment Type (Footnote B.)	**Learning Outcome (1)**	**Learning Outcome (2)**	**Learning Outcome (3)**	**Learning Outcome (4)**	**Weighting (%) of Assessment Element**	**Timetabled Contact Hours**
Portfolio of written work	✓	✓	✓	✓	40	0
Combined Total for All Components					**100%**	**2 hours**