University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Operations Management for Sustainability			
Code: QUAL11001	**SCQF Level: 11 (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 Sheheryar Mohsin Qureshi		

Summary of Module

Designed for both face-to-face and online delivery, this module begins with an introduction to and overview of Sustainable Operations Management, starting with some core definitions, models, and frameworks. Topics covered in lectures will include strategic objectives of operations management, sustainable operations strategy, operations development and improvement, and evolution of operations management. There will then be a series of lectures on design in operations management for sustainability. These will refer to the design of products and services, process design and the operations network, and design of facilities.

The module will develop a range of graduate attributes. Students will learn about some of the key techniques used in Operations Management for sustainability. These are techniques that are used for forecasting, planning and control, manufacturing, and maintenance. Techniques covered will range from simple exponential smoothing for forecasting through MRP and Just-In-Time to TPM.

The module requires some directed and undirected research to be undertaken in order to gain a working understanding of the subject.

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.

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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:
☒	☐	☐	☐	☒	☒	Add name

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

Learning Outcomes: (maximum of 5 statements) **These should take cognisance of the SCQF level descriptors and be at the appropriate level for the module.** At the end of this module, the student will be able to:	
L1	Demonstrate a critical understanding of the functional role of operations in an organisation and its strategic importance for sustainability.
L2	Demonstrate extensive knowledge and critical understanding of issues associated with the design, management, and improvement of sustainable operations systems.
L3	Demonstrate advanced knowledge of sustainable manufacturing planning and control systems and associated analytical techniques.

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 **11** Demonstrating a broad and integrated knowledge of the main aspects of Operations Management for sustainability.

	Achieve a detailed knowledge of and be able to develop an appropriate operations strategy.	
Practice: Applied Knowledge and Understanding	SCQF Level **11** Using skills and techniques to support a range of Operations Management decisions for sustainability. Demonstrating a critical understanding of the impact of different design decisions.	
Generic Cognitive skills	SCQF Level **11** Being able to appreciate how different decisions lead to a coherent Sustainable Operations Management strategy. Demonstrating some originality and creativity when applying different modelling techniques.	
Communication, ICT and Numeracy Skills	SCQF Level **11** Being able to design maintenance models for sustainable manufacturing. Being able to use appropriate software to build forecasting models. Offering professional level insights from the results of a technical modelling sustainable operation to a business audience.	
Autonomy, Accountability and Working with others	SCQF Level **11** Being able to work in a small team to address a complex Sustainable Operations Management exercise. Being able to research a topic and work independently.	
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
The Learning & Teaching Strategy for this module is based on the university's strategy for teaching and learning. Classes are delivered on a weekly basis. Lectures (online

and classroom) will introduce and exemplify key theoretical and critical concepts of Operations Management for Sustainability. Structured tutorials, case studies, flipped learning, simulations, and modelling will be applied to further develop students understanding. Computer laboratory sessions will be used to develop forecasting skills. Students will be given sufficient time and support to work on assignments.
All teaching material will be made available online, and students will be guided through the material. Groupwork will be organised and supported through facilities on the VLE.

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	18
Tutorial/Synchronous Support Activity	18
Independent Study	164
	200 Hours Total

****Indicative Resources: (eg. Core text, journals, internet access)**

The following materials form the essential underpinning for the module content and ultimately for the learning outcomes:

Anca Draghici and Larisa Ivascu (2022), 'Sustainability and Innovation in Manufacturing Enterprises: Indicators, Models and Assessment for Industry 5.0', First Edition, Springer.

Nigel Slack, Alistair Brandon-Jones, Robert Johnson (2016), 'Operations Management', Eighth Edition, Pearson.

Terry Hill and Alex Hill (2017), 'Essential Operations Management', Second Edition, Red Grove Press.

Valeria Belvedere & Alberto Grando (2017), 'Sustainable Operations and Supply Chain Management'. John Wiley & Sons.

(**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. Coordinators should consider the accessibility of their module for groups with protected characteristics.
(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
Assessment Results (Pass/Fail)	Yes ☐No ☒
School Assessment Board	Civil Engineering and Quality Management
Moderator	Dr Farhad Anvari
External Examiner	Alaa Garad
Accreditation Details	CQI
Changes/Version Number	3.15 Updated indicative resources Updated Module Coordinator and Module Moderator Updated Module Delivery Method

Assessment: (also refer to Assessment Outcomes Grids below)
Assessment 1: A written assignment worth 40% of the final mark comprising an operational strategy analysis and forecasting coursework. The coursework will generally contain a mixture of text (between 400 and 2500 words), calculation and technical analysis. It will be done in small groups or pairs.
Assessment 2: An examination worth 60% of the final mark.
(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)**	**Weighting (%) of Assessment Element**	**Timetabled Contact Hours**
Portfolio of written work	✓	✓	✓	40	0

Component 2					
Assessment Type (Footnote B.)	**Learning Outcome (1)**	**Learning Outcome (2)**	**Learning Outcome (3)**	**Weighting (%) of Assessment Element**	**Timetabled Contact Hours**
				60	0
Combined Total for All Components				**100%**	**060 hours**