Module Descriptor

Title	Operations Management for Sustainability		
Session	2025/26	**Status**	Published
Code	QUAL11001	**SCQF Level**	11
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	S 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 Lean Manufacturing.

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	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	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.
L4	N/A
L5	N/A

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 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 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

[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

Generic Cognitive skills	**SCQF 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 11** Being able to design maintenance models for sustainable manufacturing. Being able to use adequate 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 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.

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

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 & 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** (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
n/a	0
n/a	0
n/a	0

TOTAL	200 hrs.

Indicative Resources

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

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Draghici, A. and Ivascu, L. (2022), 'Sustainability and Innovation in Manufacturing Enterprises: Indicators, Models and Assessment for Industry 5.0'. London: Springer.

Slack, N. Brandon-Jones, A. and Johnson, R. (2016), 'Operations Management'. 8th edn. London: Pearson.

Hill, T. and Hill, A. (2017), 'Essential Operations Management', 2nd edn. London: Red Grove Press.

Belvedere, V. and Grando, A. (2017), 'Sustainable Operations and Supply Chain Management'. Oxford: 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.

For the purposes of this module, academic engagement equates to the following:

The School of Computing, Engineering and Physical Sciences considers attendance and engagement to mean a commitment to attending, and engaging in, timetabled sessions. Students will scan their attendance via the scanners each time they are on-campus and will login to the VLE several times per week. Students who are unable to attend a timetabled session, due to illness or other circumstance, should notify their Programme Leader. Across the School an 80% attendance threshold is set. Students who fall below this, will be referred to the Student Success Team to see how they can be best supported in their studies.

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.

Aligned with the University's commitment to equality and diversity, this module supports equality of opportunity for students from all backgrounds and learning needs. Using the VLE, material will be presented electronically in formats that allow flexible access and manipulation of content. This module complies with University regulations and guidance on inclusive learning and teaching practice. Specialist assistive equipment, support provision and adjustment to assessment practice in accordance with the University's policies and regulations.

(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 Physical Sciences**
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	Civil Engineering and Quality Management
Moderator	F Anvari
External Examiner	A Garad
Accreditation Details	N/A
Module Appears in CPD catalogue	☒ **Yes** ☐ **No**
Changes / Version Number	3.16 Updated wording of assessments 1 and updated assessment 2.

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
A written assignment worth 40% of the final mark comprising an operations management analysis, forecasting and/or master production scheduling (MPS) or material requirements planning (MRP) coursework. The coursework will generally contain a mixture of text (between 1000 and 2000 words), calculation and technical analysis. It will be done in small groups or pairs.
Assessment 2
A group report of 2000–2,500 words worth of 60% of the final mark on a sustainability-related topic within operations management. The report critically analyse topics related to sustainable operations strategies, decision-making processes, linkage with UN's SDGs and their real-world applications preferably in a UK-based organisation. A reflective piece is included, discussing individual contributions, learning experiences, and the impact of sustainability on professional practice.
Assessment 3
NA
(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**
A written assignment	☒	☒	☒	☐	☐	40	0

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Team-Based Sustainablity Report	☒	☒	☒	☐	☐	60	0

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
NA	☐	☐	☐	☐	☐		
Combined total for all components						100%	0 hours

Change Control

What	When	Who
Module descriptor reviewed prior AY 2025/2026 in line with ILR recommendations. Wording of assessment 1 revised and assessment 2 updated. Module descriptor updated to 2025-26 template. 'Attendance and Engagement' and 'Equaliy and Diversity' statements updated in line with ILR recommendations.	21/03/2025	Sheheryar Qureshi