WM9RX-15 Operations Management for Manufacturing

27/28

Department
WMG
Level
Taught Postgraduate Level
Module leader
Mucahit Ozden
Credit value
15
Assessment
100% coursework
Study locations
University of Warwick main campus, Coventry Primary
Overseas

Description

Introductory description

Even the best manufacturing system design is not effective unless it is operated and managed effectively. Increasingly, factories of the future will incorporate many emerging technologies that take over some of the planning and management tasks currently done by humans, while also enabling more sustainable and resource-efficient operations. This module will introduce conventional Operations Management and then explore the potential impact of digital-technologies on operational decision-making, productivity and sustainability, including their role in reducing environmental impact and supporting responsible use of resources. It will also examine the implications of these developments for inter-firm collaborative or networked production on a global scale, with particular attention to sustainability challenges across international supply networks. When this module is delivered on any overseas programme, it is delivered in a 2-week block rather than over 4 weeks.

Module aims

The aim of this module is to develop students' understanding of how manufacturing systems are effectively operated and managed, combining conventional Operations Management principles with emerging digital and cyber-technologies. The module equips students to evaluate the impact of these technologies on operational decision-making, productivity, and sustainability, including

their role in enabling more resource-efficient and environmentally responsible operations within increasingly interconnected production networks.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Operations Management and Strategy;
Planning and Control;
Forecasting;
Capacity Management,
Inventory Management;
Supply Chain Management;
Sustainability - Corporate Social Responsibility;

Learning outcomes

By the end of the module, students should be able to:

- Critically contrast the strategic approaches of conventional and digital manufacturing, considering their implications for operational performance, decision-making, and sustainability.
- Evaluate methods used to plan and execute conventional manufacturing with the opportunities and threats that digital-manufacturing brings.
- Analyse how digitalisation transforms operations management in a global context.
- Assess the benefits and limitations of adopting digital manufacturing within global supply chains, with particular attention to sustainability and implementation.

Indicative reading list

Reading lists can be found in Talis

Subject specific skills

Construct a production schedule under constraints of resource capacity, material and time;
Calculate common measures of operational performance;

Transferable skills

Dealing with complex issues both systematically and creatively, make sound judgements in the absence of complete data, and communicate their conclusions clearly to specialist and non-specialist audiences;
Independent learning ability required for continuing professional development.

Study

Study time

Type	Required
Lectures	18 sessions of 1 hour (20%)
Seminars	12 sessions of 1 hour (13%)
Online learning (independent)	10 sessions of 1 hour (11%)
Other activity	50 hours (56%)
Total	90 hours

Private study description

No private study requirements defined for this module.

Other activity description

Unsupervised group work and independent study

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A

	Weighting	Study time	Eligible for self-certification
Assessment component			
Group Presentation	30%	18 hours	No

This presentation requires students to compare the strategic approaches of conventional and digital manufacturing, analysing their implications for operational performance, decision-making, and sustainability. Peer adjustment will be applied in accordance with WMG policy.

Reassessment component

	Weighting	Study time	Eligible for self-certification
Individual Presentation			No

This presentation requires student to compare the strategic approaches of conventional and digital manufacturing, analysing their implications for operational performance, decision-making, and sustainability.

Assessment component

Written Report	70%	42 hours	Yes (extension)

An individual written report focusing on critical evaluation and assessment of real world manufacturing operations management and a related issue.

Reassessment component

Reassessment Written Report			No

An individual written report focusing on critical evaluation and assessment of real world manufacturing operations management and a related issue.

Feedback on assessment

The result of the group presentation will be shared with the students. A written feedback for the written report will be provided to students.

Availability

There is currently no information about the courses for which this module is core or optional.