

Decision Support for Sustainability

Module Code:	OIM7016-A
Academic Year:	2018-19
Credit Rating:	10
School:	School of Management
Subject Area:	Operations and Information Management
FHEQ Level:	FHEQ Level 7 (Masters)

Pre-requisites:

Co-requisites:

Contact Hours

Type	Hours
Lectures	10
Tutorials	6
Laboratory	4
Directed Study	80

Availability Periods

Occurrence	Location/Period
BDA	University of Bradford / Full Year (Sept - Aug)

Module Aims

This module provides you with the necessary quantitative techniques and tools to design and operate and decision support tools for evaluation of managerial decision making in the area of sustainable operations management and supply chain management. At the end of the module you will be able to effectively use selective quantitative and qualitative decision tools such as multi criteria decision making and decision making under uncertainty in order to support sustainability in operations management at a graduate level.

Outline Syllabus

This module covers quantitative based techniques in the design, operation and evaluation of sustainable operations and supply chains. The techniques can be used to model quantitative and qualitative decision problems in operations and supply chain management. The module syllabus is classified in four blocks as follows:

Block 1: Decision making process in Operations Management within manufacturing and services

Block 2: Multiple criteria decision making using Goal Programming and the Analytical Hierarchical Process (AHP) and Analytical Network process (ANP) in the Operations Management context.

Block 3: System thinking and system dynamic for decision support and sustainable management.

Block 4: Decision making under uncertainty using Decision Trees and Discrete Simulation Methods.

Module Learning Outcomes

On successful completion of this module, students will be able to...

- 1 LO1a Explain and illustrate selected topics in operation management and supply chain from the decision making standpoint.
 LO1b Understand and apply selected techniques by which quantitative and/or qualitative data of decision problems can be modelled to assist managerial decision making
 LO1c Describe the possible difficulties, which may be encountered in the decision process while facing complex uncertain problems or multi criteria problems, which might be involved with qualitative and quantitative elements.
 LO1d Critically appraise the internal/external factors
- 2 LO2a Find out an appropriate technique to match the requirements of a decision problem considering internal and external factors affecting sustainability.
 LO2b Model, solve and analyse a decision problem within a business context using an appropriate technique in order to reach at a recommendation for action.
 LO2c Undertake individual based research to understand the decision problem and process complexity and perform sensitivity analysis with the available data and interpret the results in order to develop a feasible solution while considering sustainability issues.
- 3 LO3a Demonstrate creativity in exploring business problems for sustainability and challenging for offering the problem solution.
 LO3b Communicate contemporary decision problems clearly, both orally and in writing to a broad range of recipients.

Learning, Teaching and Assessment Strategy

The module is delivered in lectures and tutorials. The lectures expose you to the most relevant tactical and operational challenges in the field of operations management and sustainable supply chain, as well as the state-of-the-art techniques to solve such problems. During tutorial sessions practical application of cases are used. You are then able to use the techniques you have learned to address real problems. All teaching is supported by information supplied on Blackboard, the virtual learning environment. Lectures will provide new concepts, and practical examples of decision problem in the operations management context. Accordingly, appropriate decision support tools are introduced to illustrate

modelling, solving and analysis of the problems. The selected problems along with the selected tools are intended to be examined in the tutorials and/or computer laboratories in order to provide a discussion forum for potential challenges in solving and analysing the problems with oral feedback. The module makes extensive use of articles and case studies. Learning outcomes are assessed by: design a support system for a decision problem in operations management and supply chain such as a reverse supply network through using selected techniques such as multi criteria decision making and simulation with developing a computer based modelling and analysis; LOs: 1b, 1c, 1d, 2a, 2b, 2c, 3.a., 3.b). ESD is at the core of this module and content on ESD is delivered throughout the sessions.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Summative	Coursework	Individual assignment (2000 words): optional decision problem for sustainability with computer-based modelling/analysis	0 hours	100%	No

Legacy Code (if applicable)

MAN4319M

Reading List

To view Reading List, please go to [rebus:list](#).