



[Your Portal](#) [Your Course](#) [Email PM Voyager](#) [Search Help](#) [Logout](#)

[Learning Resources](#) [Support Social News & Info.](#) [Learning & Information Services](#)
[Technical Support](#)

Definitive Module Document (DMD)

[Back](#)

[Module Info](#) > DMD

Module Code: 3AAD0024

Title of Module

Full Title: Simulation Techniques in Operations Management

Short Title: STOM

MODULE

3AAD0024 (A 05/6)

Simulation Technique...

- [Module Homepage](#)
- [Module News](#)
- [Module Information](#)
- [Teaching Resources](#)
- [Reading List](#)

Search Website

Version: 1

Credit Points: 15

Level / ECTS Level: 3

First Offered: 1/9/2005 00-00-00

6. Home Department:

AAD

7. Departments(s) contributing to teaching:

9. Module Aims:

- be equipped with computational techniques and decision making techniques for operation management
- develop a deeper understanding of operations management theory through modelling and simulation

10a. Learning Outcomes: Knowledge and Understanding:

- describe the concepts of discrete event simulation- workflows, uncertainty, resources, performance measures
- explain the nature of planning and control in operations and the problems of inventory management, and to use simulation modelling to support decision making for these issues.
- critically evaluate the results generated from simulation models

10b. Learning Outcomes: Skills and Attributes:

- apply discrete event simulation software to build models of moderate complexity
- use simulation modelling to support the trade-off between resources and performance of different types of operations.
- build models for inventory control, decision analysis and simulate them using appropriate software packages

11. Module Content

11a Module Content:

This course is focused on the application of computer software as a decision aid for the analysis of operation management problems. Students will be required to use quantitative tools to make decisions based on real-world issues. A discrete event simulation package will be used in conjunction with spreadsheets to develop problems for analysis and synthesis. Emphasis will be placed on the analysis of results from the various simulation and optimisation techniques.

11b. Further details on how the learning outcomes of the module will be achieved:

The intended learning outcomes are facilitated through a combination of approaches to learning and teaching, typically this will include lectures, tutorials and practical activities. These activities will be supported by the module team and by encouraging the students to access a variety of resources, eg Studynet, academic texts and case studies.

Further details of the content are-

Introduction to the application of software techniques for problem solving in the manufacturing environment. The Use of computer packages to assist simulation and visualisation of production case studies. An appreciation of appropriate statistical distributions and data collection techniques for simulation.

Introduction to the principle of simulation and computer modelling. Students will be required to build models and simulate real world cases based on manufacturing environment using a suitable discrete event simulation package.

Simulation of a sample of different production systems (e.g. push, pull, Just-in-time). Analysis of results and optimisation to meet different business objectives.

Simulation and modelling with spreadsheets. Monte Carlo simulation and its application in simulating operations.

The use of spreadsheet for investigating inventory control models.

The use of spreadsheet for linear programming, aggregate production planning, decision analysis. These would be taught with cases and hands-on exercises - modelling and analysis with spreadsheet tools.

Tutorials in building simulation models with an appropriate software and the use of spreadsheets for modelling will be available on the Studynet for students to review at their own pace.

12. Language of Delivery:

English

13. Language of Assessment:

English

14. Assessment Details (Academic):

Coursework: 50

Exam: 50

Other:

Assessment Notes:

The assessments will typically include-

Phase test and/or in-course assignments - 50%

Unseen exam - 50%

Overall pass required, subject to a maximum grade of E2 if not both coursework and examination are passed. A reasonable attempt at both elements of assessment is required for the attainment of a pass grade.

Each Assessment satisfies a selection of the learning outcomes.

15. Locations(s):

UH HATFIELD

16. Pre and Co-Requisite:

Pre-Requisite

Co-Req

Prohibited

17. Subject Board of Examiner/s:**18. Comments**

Students must have studied 2AAD0017 or an equivalent module prior to studying this module.

[Disclaimer](#)
[Terms and Conditions](#)

Copyright (C) 2006 University of Hertfordshire.