# IB9HS-15 Operations Analytics

## 26/27

**Department**
Warwick Business School
**Level**
Taught Postgraduate Level
**Module leader**
Salimeh Pour Mohammad
**Credit value**
15
**Module duration**
9 weeks
**Assessment**
100% coursework
**Study location**
University of Warwick main campus, Coventry

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## Description

## Introductory description

This module is designed to introduce the student to the ideas of modelling and analytics and to their relevance for management.

Module web page

## Module aims

This module is designed to introduce the student to the ideas of modelling and analytics and to their relevance for management. The emphasis is upon the student being a critical consumer of quantitative and quantitative information and modelling. It is not intended that the module will turn the student into an experienced modeller but that it will teach the student to understand the importance of, and benefits to be gained from, modelling and analytics for management. It is also intended that the student should be able to have sensible and meaningful conversations with specialists who are experienced modellers. Furthermore, it is intended that the student should be able to ask relevant and pertinent questions of such specialists and comprehend their replies. Therefore the module is concerned with the context and process of modelling rather than with the technicalities underlying specific modelling ana anlytics approaches.

To become a critical consumer of modelling and analytics it is necessary to consider some approaches in some detail. Therefore the module considers a variety of approaches that are

commonly used in a business and management environment. However, it is not intended that the focus will be solely on the mechanics of those approaches but upon the interpretations to be placed upon the output of the models and upon the usefulness of such output to management.

As a further guide to the situations where such models may be used, and how they may be employed, the module considers a number of case studies based on applying the techniques in actual business situations.pplying the techniques in actual business situations.

## 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.

The module will cover a range of topics of which the following are illustrative:
Why managers use models
Working with case studies
Exploratory data analysis
Visualisation
Sampling
Regression analysis
Forecasting
Simulation
The modelling process
Optimisation
When something changes: Sensitivity analysis
Validation & verification of models
Critical review of case studies

## Learning outcomes

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

- Demonstrate a comprehensive understanding of the contribution that modelling and analytics techniques can make to organisations.
- Demonstrate a comprehensive understanding of the purpose of modelling and analytics, and identify the areas in which it can be applied
- Demonstrate a comprehensive understanding of the value of investigating business problems using modelling and analytics
- Critically analyse modelling work undertaken in organisations.

## Indicative reading list

Reading lists can be found in Talis

## Research element

Research papers are used as part of this module to help students critically review the modelling

and approaches to analysis.

## Interdisciplinary

Datasets can be drawn from any country. Hence, there is great potential for the module leader to internationalise and decolonise the knowledge and contents.

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## Subject specific skills

Identify and assess operational situations where modelling and analytics tools may be applied.
Specify methods of modelling and analytics in operations such as exploratory data analysis, sampling, visualisation, regression analysis, forecasting, optimisation, sensitivity analysis and simulation.
Recognise and interpret the requirements for, and benefits and pitfalls of, applying modelling and analytics tools

## Transferable skills

Written communication.
Work in groups to solve problems cooperatively.

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## Study

## Study time

| Type | Required |
| --- | --- |
| Seminars | 9 sessions of 2 hours (24%) |
| Online learning (scheduled sessions) | 9 sessions of 1 hour (12%) |
| Private study | 49 hours (64%) |
| Total | 76 hours |

## Private study description

Private study to include preparation for lectures

## Costs

No further costs have been identified for this module.

## Assessment

You do not need to pass all assessment components to pass the module.

### Assessment group A

| | Weighting | Study time | Eligible for self-certification |
|---|---|---|---|
| **Assessment component** | | | |
| Group presentation | 20% | 15 hours | No |
| **Reassessment component is the same** | | | |
| **Assessment component** | | | |
| Class participation | 10% | 7 hours | No |
| **Reassessment component is the same** | | | |
| **Assessment component** | | | |
| Individual Assignment | 70% | 52 hours | Yes (extension) |
| **Reassessment component is the same** | | | |

### Feedback on assessment

Assessments are graded using standard University Postgraduate Marking Criteria and written feedback is provided. Overall percentage marks are awarded for examination performance and general examination feedback is provided to the cohort.

## Availability

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