IB3A7-15 The Practice of Operational Research

21/22

Department
Warwick Business School
Level
Undergraduate Level 3
Module leader
Frances O'Brien
Credit value
15
Module duration
10 weeks
Assessment
20% coursework, 80% exam
Study location
University of Warwick main campus, Coventry

Description

Introductory description

This module covers the craft processes involved in carrying out operational research (OR) studies in organisations. While other modules generally provide specific technical capabilities, the methodology modules supply the general approaches and skills necessary to use these techniques effectively in practical organizational interventions.

Module web page

Module aims

The overall aims are:
(i) to provide students with a general understanding of the process of conducting OR studies;
(ii) to develop in students some of the basic skills required in conducting OR studies.

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 practice of operational research (OR); models and modelling in OR studies; issues in problem structuring and data collection; OR model validation and verification.

Learning outcomes

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

- Understand the nature of OR studies and the practical issues involved in developing OR models, as well as recognise the importance of the problem structuring skills required in conducting OR studies.
- Formulate, test and validate OR models.

Indicative reading list

Daellenbach, H.G. and McNickle D.C. (2005). Management Science: decision making through systems thinking, Basingstoke: Palgrave MacMillan.
Bryson, J., Ackermann, F., Eden, C. and Finn, C. (2004) Visible Thinking: unlocking causal mapping for practical business results, Chichester: Wiley.
Mitchell, G. (1993) The Practice of Operational Research, Chichester: Wiley.
Pidd, M. (2003) Tools for Thinking: modelling in Management Science (2nd ed.), Chichester: Wiley.
Rivett, B.H.P. (1994) The Craft of Decision Modelling, Chichester: Wiley.
Rosenhead, J. and Mingers, J. (2001) Rational Analysis for a Problematic World Revisited: problem structuring methods for complexity, uncertainty and conflict (2nd ed.), Chichester: Wiley.

Subject specific skills

Appreciate a range of modelling approaches and the circumstances in which they might be applied.

Transferable skills

Conduct interviews using problem structuring methods

Study

Study time

Type	Required
Lectures	10 sessions of 1 hour (14%)
Seminars	8 sessions of 1 hour (11%)
Private study	53 hours (75%)
Total	71 hours

Private study description

Private Study.

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 D5

	Weighting	Study time
Individual Assignment (15 CATS)	20%	16 hours
Online Examination	80%	63 hours

- Answerbook Green (8 page)
- Students may use a calculator

Feedback on assessment

Feedback via My.WBS.

Past exam papers for IB3A7

Availability

Courses

This module is Optional for:

- UIBA-MN34 Law and Business Four Year (Qualifying Degree)
  - Year 3 of MN34 Law and Business Studies Four Year (Qualifying Degree)
  - Year 4 of MN34 Law and Business Studies Four Year (Qualifying Degree)
- UECA-3 Undergraduate Economics 3 Year Variants
  - Year 3 of L100 Economics
  - Year 3 of L100 Economics
  - Year 3 of L100 Economics
  - Year 3 of L116 Economics and Industrial Organization
  - Year 3 of L116 Economics and Industrial Organization

    - Year 3 of L116 Economics and Industrial Organization
    - Year 3 of L116 Economics and Industrial Organization
- Year 4 of UECA-4 Undergraduate Economics 4 Year Variants
- Year 3 of UIBA-MN31 Undergraduate Law and Business Studies
- Year 3 of UIBA-MN32 Undergraduate Law and Business Studies
- Year 5 of UIBA-MN37 Undergraduate Law and Business Studies (Qualifying Degree) with Intercalated Year
- UIBA-MN35 Undergraduate Law and Business Studies with Intercalated Year (3+1)
    - Year 3 of MN35 Law and Business Studies with Intercalated Year (3+1)
    - Year 4 of MN35 Law and Business Studies with Intercalated Year (3+1)
- USTA-G300 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics
    - Year 3 of G300 Mathematics, Operational Research, Statistics and Economics
    - Year 4 of G300 Mathematics, Operational Research, Statistics and Economics
- Year 3 of UMAA-GL11 Undergraduate Mathematics and Economics
- USTA-G1G3 Undergraduate Mathematics and Statistics (BSc MMathStat)
    - Year 3 of G1G3 Mathematics and Statistics (BSc MMathStat)
    - Year 4 of G1G3 Mathematics and Statistics (BSc MMathStat)
- USTA-G1G4 Undergraduate Mathematics and Statistics (BSc MMathStat) (with Intercalated Year)
    - Year 4 of G1G4 Mathematics and Statistics (BSc MMathStat) (with Intercalated Year)
    - Year 5 of G1G4 Mathematics and Statistics (BSc MMathStat) (with Intercalated Year)

This module is Unusual option for:

- UPHA-V7ML Undergraduate Philosophy, Politics and Economics
    - Year 3 of V7ML Philosophy, Politics and Economics (Tripartite)
    - Year 3 of V7ML Philosophy, Politics and Economics (Tripartite)
    - Year 3 of V7ML Philosophy, Politics and Economics (Tripartite)

This module is Option list A for:

- USTA-Y602 Undergraduate Mathematics,Operational Research,Statistics and Economics
    - Year 3 of Y602 Mathematics,Operational Research,Stats,Economics
    - Year 3 of Y602 Mathematics,Operational Research,Stats,Economics
- Year 4 of USTA-Y603 Undergraduate Mathematics,Operational Research,Statistics,Economics (with Intercalated Year)

This module is Option list B for:

- USTA-GG14 Undergraduate Mathematics and Statistics (BSc)
    - Year 3 of GG14 Mathematics and Statistics
    - Year 3 of GG14 Mathematics and Statistics
- Year 4 of USTA-GG17 Undergraduate Mathematics and Statistics (with Intercalated Year)

This module is Option list C for:

- USTA-G300 Undergraduate Master of Mathematics,Operational Research,Statistics and

Economics
    - Year 4 of G30C Master of Maths, Op.Res, Stats & Economics (Operational Research and Statistics Stream)
    - Year 4 of G30C Master of Maths, Op.Res, Stats & Economics (Operational Research and Statistics Stream)
- Year 5 of USTA-G301 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics (with Intercalated

This module is Option list D for:

- USTA-G300 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics
    - Year 3 of G30C Master of Maths, Op.Res, Stats & Economics (Operational Research and Statistics Stream)
    - Year 3 of G30C Master of Maths, Op.Res, Stats & Economics (Operational Research and Statistics Stream)
- USTA-G301 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics (with Intercalated
    - Year 3 of G30G Master of Maths, Op.Res, Stats & Economics (Operational Research and Statistics Stream) Int
    - Year 4 of G30G Master of Maths, Op.Res, Stats & Economics (Operational Research and Statistics Stream) Int

This module is Option list G for:

- UPHA-V7ML Undergraduate Philosophy, Politics and Economics
    - Year 2 of V7ML Philosophy, Politics and Economics (Tripartite)
    - Year 2 of V7ML Philosophy, Politics and Economics (Tripartite)
    - Year 2 of V7ML Philosophy, Politics and Economics (Tripartite)