

# IB349-15 Operational Research for Strategic Planning

**22/23**

**Department**

Warwick Business School

**Level**

Undergraduate Level 3

**Module leader**

Frances O'Brien

**Credit value**

15

**Module duration**

10 weeks

**Assessment**

Multiple

**Study location**

University of Warwick main campus, Coventry

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## Description

### Introductory description

This is an elective module available to WBS and non-WBS students.

To develop an understanding of the range of methods and models available to support the development of effective strategic decisions.

To equip students with the knowledge and skills to identify and apply a selection of methods that are appropriate for supporting the development of effective strategic decisions.

To instil in students an appreciation of how the methods can be incorporated within the planning process.

[Module web page](#)

### Module aims

To develop an understanding of the range of methods and models available to support the development of effective strategic decisions.

To equip students with the knowledge and skills to identify and apply a selection of methods that are appropriate for supporting the development of effective strategic decisions.

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process.

## **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.

A conceptual model of the strategic development process is introduced which identifies a set of essential elements for example: vision development, strategy creation, strategy rehearsal and evaluation, performance measurement. Frameworks, methods and models to support the development process include but are not limited to:

- Corporate modelling
- System Dynamics for policy design
- Strategy formulation approaches including SWOT / TOWS analysis
- Gaming
- Scenario planning
- Visioning approaches
- Performance measurement

The module will focus on a selection of methods; this selection may vary from year to year. The teaching style emphasises the practical application of techniques for strategy support through the use of case studies and group exercises. Students undertaking the 15 CATs variant are introduced to some additional material in class and through private reading/research. This additional material is also assessed for these students only with an extra question in their assessment.

## **Learning outcomes**

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

- Understand the range of methods and models available to support the development of effective strategic decision making.
- Appreciate how the methods can be incorporated within the planning process.
- Work out how to analyse information and present it in an intelligible form.

## **Indicative reading list**

Core Text:

F A O'Brien and R G Dyson, Supporting Strategy: Frameworks, Methods & Models, Wiley, 2007.

Journal article lists are included with each lecture eg:

D O'Connell, K Hickson, A Pillutla (2011) Organisational visioning: An integrative review. Group & Organization Management 36 (2): 103-125

G Wright & G Cairns, Scenario thinking: Practical approaches to the future, Palgrave Macmillan, 2011

RG Dyson (2004) 'Strategic development and SWOT analysis at the University of Warwick', European Journal of Operational Research, 152, 2004, 631-640.

Maani KE and Cavana RY, Systems thinking and modelling: understanding change and

complexity, Prentice Hall, 2000.

Sterman JD, Business Dynamics: systems thinking and modelling for a complex world, London: Irwin/McGraw-Hill, 2000.

Warren K, Competitive Strategy Dynamics, Chichester: Wiley, 2002.

## **Subject specific skills**

Use a selection of the methods covered on the module in practical situations.

## **Transferable skills**

Demonstrate written, analytical and verbal communication skills.

Utilise and develop analytic skills.

Convey their understanding of key concepts using different forms of communication (eg write reports, make presentations).

Use information technology(e.g. WP, www, specialist packages).

Work with others (e.g. teamwork).

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## **Study**

### **Study time**

<b>Type</b>	<b>Required</b>
Lectures	10 sessions of 1 hour (7%)
Seminars	9 sessions of 1 hour (6%)
Online learning (independent)	10 sessions of 1 hour (7%)
Private study	48 hours (32%)
Assessment	73 hours (49%)
Total	150 hours

### **Private study description**

Private Study.

## **Costs**

No further costs have been identified for this module.

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## **Assessment**

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

## Assessment group A5

	Weighting	Study time
Individual Assignment (15 CATS)	90%	65 hours
Participation (15 CATS)	10%	8 hours

## Assessment group R2

	Weighting	Study time
Individual Assignment	100%	

## Feedback on assessment

Formative feedback is provided to groups of students on a (non-assessed) presentation of the case company used in their individual assessment. Summative feedback is provided via a feedback form attached to the submitted assessment document.

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## 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)
- Year 4 of UECA-4 Undergraduate Economics 4 Year Variants
- Year 3 of UIBA-MN31 Undergraduate Law and Business Studies
- UIBA-MN32 Undergraduate Law and Business Studies
  - Year 3 of MN32 Law and Business Studies (Four-Year)
  - Year 4 of MN32 Law and Business Studies (Four-Year)
- 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)
- Year 5 of UIBA-MN36 Undergraduate Law and Business Studies with Intercalated Year (4+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 4 of UECA-GL12 Undergraduate Mathematics and Economics (with Intercalated Year)

- 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:

- Year 4 of UCSA-G504 MEng Computer Science (with intercalated year)
- UCSA-G500 Undergraduate Computer Science
  - Year 3 of G500 Computer Science
  - Year 3 of G500 Computer Science
- UCSA-G502 Undergraduate Computer Science (with Intercalated Year)
  - Year 4 of G502 Computer Science with Intercalated Year
  - Year 4 of G502 Computer Science with Intercalated Year
- UCSA-G503 Undergraduate Computer Science MEng
  - Year 3 of G500 Computer Science
  - Year 3 of G503 Computer Science MEng
  - Year 3 of G503 Computer Science MEng
- 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:

- Year 4 of UCSA-G504 MEng Computer Science (with intercalated year)
- UCSA-G500 Undergraduate Computer Science
  - Year 3 of G500 Computer Science
  - Year 3 of G500 Computer Science
- UCSA-G502 Undergraduate Computer Science (with Intercalated Year)

- Year 4 of G502 Computer Science with Intercalated Year
- Year 4 of G502 Computer Science with Intercalated Year
- UCSA-G503 Undergraduate Computer Science MEng
  - Year 3 of G500 Computer Science
  - Year 3 of G503 Computer Science MEng
  - Year 3 of G503 Computer Science MEng
- 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)