

IB349-15 Operational Research for Strategic Planning

23/24

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

Description

Introductory description

This is an elective module available to WBS and non-WBS students, with the following 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, apply and reflect on the use of 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](#)

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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:

- Problem structuring methods
- Visioning approaches
- Strategy formulation approaches including SWOT / TOWS analysis
- Scenario planning
- Evaluation approaches

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.

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 /book lists are included with each lecture eg:

MM Crawford, and G Wright, 2022. The value of mass-produced COVID-19 scenarios: A quality evaluation of development

processes and scenario content. Technological Forecasting and Social Change, 183, p.121937.

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

G Hindle, and R Vidgen, R (2018) 'Developing a business analytics methodology: A case study in the foodbank sector', European Journal of Operational Research, 268 (3)

M Kunc. and FA O'Brien (2017). Exploring the development of a methodology for scenario use: Combining scenario and resource mapping approaches. Technological Forecasting and Social Change, 124, pp.150-159.

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

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).

Study

Study time

Type	Required
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.

Assessment

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

Assessment group A6

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

Assessment group R3

	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.

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
- UPHA-L1CA Undergraduate Economics, Psychology and Philosophy
 - Year 3 of L1CA Economics, Psychology and Philosophy
 - Year 3 of L1CC Economics, Psychology and Philosophy (Behavioural Economics Pathway)
 - Year 3 of L1CD Economics, Psychology and Philosophy (Economics with Philosophy Pathway)
 - Year 3 of L1CE Economics, Psychology and Philosophy (Philosophy and Psychology Pathway)
- UPHA-L1CB Undergraduate Economics, Psychology and Philosophy (with Intercalated Year)
 - Year 4 of L1CG Economics, Psychology and Philosophy (Behavioural Economics

- Pathway) (with Intercalated Year)
 - Year 4 of L1CH Economics, Psychology and Philosophy (Economics with Philosophy Pathway) (with Intercalated Year)
 - Year 4 of L1CJ Economics, Psychology and Philosophy (Philosophy and Psychology Pathway) (with Intercalated Year)
 - Year 4 of L1CB Economics, Psychology and Philosophy (with Intercalated Year)
 - Year 4 of L1CB Economics, Psychology and Philosophy (with Intercalated Year)
- 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-L1CA Undergraduate Economics, Psychology and Philosophy
 - Year 2 of L1CA Economics, Psychology and Philosophy
 - Year 3 of L1CA Economics, Psychology and Philosophy
- 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)