

IB320-15 Simulation

26/27

Department

Warwick Business School

Level

Undergraduate Level 3

Module leader

Richard White

Credit value

15

Module duration

10 weeks

Assessment

Multiple

Study location

University of Warwick main campus, Coventry

Description

Introductory description

Simulation is one of the most commonly used operational research methods for analysing complex operational/ industrial problems. This module will focus on discrete event simulation. Students will learn the theoretical underpinnings of the methods and the range of applications for which they are useful. They will gain practical experience in problem solving using commercial simulation software.

This is an elective module available for WBS and non-WBS students. To find detailed availability and to apply for this module, log in to my.wbs.ac.uk using your normal IT login details and apply via the my.wbs module application system. Once you've secured a place on my.wbs you should apply via your home department's usual process, which usually takes place via eVision.

Note that you do not require the module leader's permission to study a WBS module, so please do not contact them to request it.

Please also note that while there are no formal pre-requisites for this module it is strongly recommended that students have taken a previous data focussed/statistics module (e.g. IB122 - Business Analytics, IB149 - Introduction to Statistics, IB150 - Foundations of Data Analysis for Management or an equivalent non-WBS run statistics module).

[Module web page](#)

Module aims

Simulation is one of the most commonly used operational research methods for analysing complex operational/ industrial problems. This module will focus on discrete event simulation. Students will learn the theoretical underpinnings of the methods and the range of applications for which they are useful. They will gain practical experience in problem solving using commercial simulation software.

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.

Topics covered will be:

- A simulation method (e.g., the discrete-event simulation method)
- Software for a simulation (with use of a specific package, e.g., Simul8)
- Performing a simulation study (conceptual modelling, data collection and analysis, experimentation, verification and validation)

Workshops will provide the opportunity for supervised exercises and help students develop their own computer based simulation programmes. During the workshops students will be asked to investigate a particular industrial/operational problem using the guide sheet provided. They should develop a suitable simulation model. The students will learn how to do conceptual modelling, implement their model, use data to analyse their model, validate and verify their model, and reflect on their result, etc....

Learning outcomes

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

- Demonstrate the nature and application of discrete-event simulation and know how to experiment with it.
- Analyse data and present it in an intelligible form.

Indicative reading list

[Reading lists can be found in Talis](#)

Subject specific skills

Develop and use a simulation for investigating a problem situation.

Transferable skills

Develop a working knowledge of a discrete event simulation software package.

Work in groups to solve problems cooperatively.
Communicate effectively.

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	47 hours (31%)
Assessment	74 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 A4

	Weighting	Study time	Eligible for self-certification
Group Assignment	20%	15 hours	No
Group Assignment 1500 words			
Individual Assignment	70%	51 hours	Yes (extension)
Participation	10%	8 hours	No

Assessment group R4

	Weighting	Study time	Eligible for self-certification
Individual Assignment	30%		Yes (extension)

Weighting Study time Eligible for self-certification

Individual Assignment to replace group work and participation

Individual Assignment 70% Yes (extension)

Feedback on assessment

Feedback via my.wbs.

Availability

Pre-requisites

There are no formal pre-requisites for this module but it is strongly recommended that students have taken a previous data focussed/statistics module (e.g. IB122 - Business Analytics, IB149 - Introduction to Statistics, IB150 - Foundations of Data Analysis for Management or an equivalent non-WBS run statistics module).

Courses

This module is Optional for:

- Year 4 of UIBA-NN02 BSC International Management with Marketing
- Year 3 of UIBA-NN01 BSC Management with Marketing
- Year 4 of UIBA-NN03 BSC Management with Marketing (With Placement Year)
- Year 4 of UECA-L1N3 BSc Economics and Management with Placement Year
- UIBA-N20B BSc in Management
 - Year 3 of N20B Management
 - Year 3 of N20B Management
 - Year 3 of N23K Management with Accounting
 - Year 3 of N234 Management with Digital Business
 - Year 3 of N235 Management with Entrepreneurship
 - Year 3 of N232 Management with Finance
 - Year 3 of N252 Management with Marketing
 - Year 3 of N23L Management with Strategy and Organisation
- Year 3 of UIBA-N400 Undergraduate Accounting and Finance
- UIBA-N404 Undergraduate Accounting and Finance (with Foundation Year and Placement/Undergraduate Partnership Programme)
 - Year 5 of N4N7 Accounting and Finance (Foundation Year and Intercalated)
 - Year 5 of N404 Accounting and Finance (Foundation Year and Placement)
 - Year 5 of N405 Accounting and Finance (Foundation Year and UPP)
 - Year 5 of N403 Accounting and Finance (with Foundation Year)
- Year 4 of UIBA-N403 Undergraduate Accounting and Finance (with Foundation Year)
- UIBA-N401 Undergraduate Accounting and Finance (with Placement Year/Undergraduate Partnership Programme)

- Year 4 of N401 Accounting and Finance (Placement)
 - Year 4 of N402 Accounting and Finance (Undergraduate Partnership Programme)
- Year 3 of UCSA-I1N1 Undergraduate Computer Science with Business Studies
- Year 4 of UCSA-I1NA Undergraduate Computer Science with Business Studies (with Intercalated Year)
- Year 1 of UIOA-EEU Undergraduate EU Exchange
- Year 3 of UECA-L1N2 Undergraduate Economics and Management
- Year 4 of UGEA-RN21 Undergraduate German and Business Studies
- Year 3 of UIPA-L8N1 Undergraduate Global Sustainable Development and Business
- Year 4 of UIPA-L8N2 Undergraduate Global Sustainable Development and Business Studies (with Intercalated Year)
- UIBA-N20F Undergraduate International Management
 - Year 4 of N20F International Management
 - Year 4 of N20F International Management
 - Year 4 of N20S International Management (with Accounting)
 - Year 4 of N20T International Management (with Chinese)
 - Year 4 of N20P International Management (with Entrepreneurship)
 - Year 4 of N20M International Management (with Finance)
 - Year 4 of N20U International Management (with French)
 - Year 4 of N20L International Management (with Marketing)
 - Year 4 of N20V International Management (with Spanish)
 - Year 4 of N20W International Management (with Strategy and Organisation)
 - Year 4 of N20N International Management with Digital Business
 - Year 4 of N20E Management (with Foundation Year)
 - Year 4 of N234 Management with Digital Business
- UIBA-N220 Undergraduate International Management (with Foundation Year)
 - Year 4 of N220 International Management (with Foundation Year)
 - Year 4 of N221 International Management with Accounting (with Foundation Year)
 - Year 4 of N226 International Management with Chinese (with Foundation Year)
 - Year 4 of N223 International Management with Digital Business (with Foundation Year)
 - Year 4 of N224 International Management with Entrepreneurship (with Foundation Year)
 - Year 4 of N222 International Management with Finance (with Foundation Year)
 - Year 4 of N227 International Management with French (with Foundation Year)
 - Year 4 of N225 International Management with Marketing (with Foundation Year)
 - Year 4 of N228 International Management with Spanish (with Foundation Year)
 - Year 4 of N229 International Management with Strategy and Organisation (with Foundation Year)
- UIBA-N20J Undergraduate Management (with Foundation Year and Placement Year/Undergraduate Partnership Programme)
 - Year 5 of N20J Management (Foundation Year and Placement)
 - Year 5 of N20K Management (Foundation Year and UPP)
 - Year 5 of N23H Management with Digital Business (with Foundation Year and Placement Year)
 - Year 5 of N23J Management with Entrepreneurship (with Foundation Year and Placement Year)

- Year 5 of N23G Management with Finance (with Foundation Year and Placement Year)
- Year 5 of N255 Management with Marketing (with Foundation Year and Placement Year)
- UIBA-N20E Undergraduate Management (with Foundation Year)
 - Year 4 of N20E Management (with Foundation Year)
 - Year 4 of N23N Management with Accounting (with Foundation Year and Placement Year)
 - Year 4 of N23M Management with Accounting (with Foundation Year)
 - Year 4 of N23E Management with Digital Business (with Foundation Year)
 - Year 4 of N23F Management with Entrepreneurship (with Foundation Year)
 - Year 4 of N23D Management with Finance (with Foundation Year)
 - Year 4 of N252 Management with Marketing
 - Year 4 of N254 Management with Marketing (with Foundation Year)
 - Year 4 of N23P Management with Strategy and Organisation (with Foundation Year)
- UIBA-N20C Undergraduate Management (with Placement Year/Undergraduate Partnership Programme)
 - Year 4 of N20M International Management (with Finance)
 - Year 4 of N20B Management
 - Year 4 of N20D Management (Undergraduate Partnership Programme)
 - Year 4 of N20C Management (with Placement Year)
 - Year 4 of N20Q Management with Accounting (with Placement Year)
 - Year 4 of N236 Management with Digital Business (with Placement Year)
 - Year 4 of N237 Management with Entrepreneurship (with Placement Year)
 - Year 4 of N232 Management with Finance
 - Year 4 of N233 Management with Finance (with Placement Year)
 - Year 4 of N253 Management with Marketing (with Placement Year)
 - Year 4 of N23L Management with Strategy and Organisation
 - Year 4 of N20R Management with Strategy and Organisation (with Placement Year)
- Year 3 of UMAA-G1NC Undergraduate Mathematics and Business Studies
- Year 4 of UMAA-G1N2 Undergraduate Mathematics and Business Studies (with Intercalated Year)
- USTA-Y602 Undergraduate Mathematics,Operational Research,Statistics and Economics
 - Year 2 of Y602 Mathematics,Operational Research,Stats,Economics
 - Year 2 of Y602 Mathematics,Operational Research,Stats,Economics
 - Year 3 of Y602 Mathematics,Operational Research,Stats,Economics
 - Year 3 of Y602 Mathematics,Operational Research,Stats,Economics
 - Year 4 of Y602 Mathematics,Operational Research,Stats,Economics
 - Year 4 of Y602 Mathematics,Operational Research,Stats,Economics
- UIOA-EOS Undergraduate Overseas Exchange
 - Year 1 of UEOS Undergraduate Overseas Exchange
 - Year 1 of UEOS Undergraduate Overseas Exchange
- Year 4 of UPXA-F3ND Undergraduate Physics and Business Studies (with Intercalated Year)
- Year 3 of UPXA-F3N2 Undergraduate Physics with Business Studies
- Year 1 of UIOA-EUS Undergraduate USA Exchange