IB9EO-15 Pricing Analytics

26/27

Department
Warwick Business School
Level
Taught Postgraduate Level
Module leader
Siamak Naderi
Credit value
15
Module duration
9 weeks
Assessment
20% coursework, 80% exam
Study location
University of Warwick main campus, Coventry

Description

Introductory description

Pricing Analytics focuses on how a company should set and update pricing and product availability decisions across its various selling channels in order to maximise its profitability in an automated fashion. In other words, we are concerned with algorithms making real-time pricing decisions, rather than strategic pricing.

Module web page

Module aims

The module shall provide the conceptual understanding, practical skills and experience in using programming tools for the students to model and analyse demand, and to use the outcomes to optimise pricing or product availability decisions in an automated fashion.
The emphasis is on teaching advanced statistical and optimisation concepts and techniques that are highly relevant in practice. These concepts and techniques are implemented in a programming software with the aim of enabling students to be able to develop pricing solution prototypes for real-world problems.

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 makes heavy use of case studies and applied programming exercises in a programming software to study the following topics:

Demand modelling and estimation

Capacity control models

Price optimization

Dynamic pricing: promotions, markdowns

Machine learning models in pricing and revenue management

Learning outcomes

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

- Demonstrate comprehensive understanding of key concepts including the impact of constrained capacity, opportunity costs, customer response, demand uncertainty.
- Evaluate the critical differences among different types of opportunity and the approaches needed to address them.

Indicative reading list

Reading lists can be found in Talis

Subject specific skills

Estimate and evaluate various demand models
Calculate and solve relevant price or capacity control optimisation models
Compare and assess the performance of different decision policies in simulation studies

Transferable skills

Numeracy
Problem solving

Study

Study time

Type	Required
Lectures	9 sessions of 1 hour (6%)
Other activity	18 hours (12%)
Private study	74 hours (49%)
Assessment	49 hours (33%)
Total	150 hours

Private study description

Private study to include preparation for lectures and seminars

Other activity description

9 x 2 hrs workshops F2F

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 D4

	Weighting	Study time	Eligible for self-certification
Assessment component			
1500 word assignment (involving presentation, written and numerical elements)	20%	10 hours	No
Group assignment (involving presentation, written and numerical elements)			
Reassessment component			
Individual assignment 1000 words			Yes (extension)
Assessment component			

	Weighting	Study time	Eligible for self-certification
Centrally-timetabled examination (On-campus)	80%	39 hours	No

- Students may use a calculator
- Answerbook Pink (12 page)

Reassessment component is the same

Feedback on assessment

Automated feedback via my.wbs' questions and feedback feature. Feedback via my.wbs for each group assignment. Standard WBS exam feedback

Past exam papers for IB9EO

Availability

Courses

This module is Optional for:

- Year 1 of TIBS-NI01 Business Analytics and Artificial Intelligence
- MMORSE