IB9BW-15 Analytics in Practice

23/24

Department
Warwick Business School
Level
Taught Postgraduate Level
Module leader
Nursen Aydin
Credit value
15
Module duration
9 weeks
Assessment
40% coursework, 60% exam
Study location
University of Warwick main campus, Coventry

Description

Introductory description

The module aims to provide an understanding of how analytics projects are structured from start to end.

Module web page

Module aims

To become familiar with the cross-industry standard process for data mining and analytics. To be able to structure and conduct an analytical project including visualisation and communicating the project's results to the end-user.

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.

This module is dedicated to conveying a sense of how to structure analytic projects systematically, from understanding of the business problem over modelling up to model assessment and communication of the project's results.

This module introduces a way of such a structure with an applied, step-by-step introduction that mixes theory and practical, hands-on implementation tasks:
Introduction to data mining and CRISP-DM.
Collecting initial data, understanding data.
Setting the unit of analysis, integrating data, deriving and reclassifying fields.
Introduction to predictive modelling with decision trees, oversampling, partitioning.
Model understanding, comparing and combining models, model assessment.
Visualisation concepts, how to communicate analytic results.
Dashboard design.

Learning outcomes

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

- Demonstrate understanding of how to structure data mining projects systematically.
- Demonstrate an awareness of challenges in predictive modelling (such as unbalanced outcomes, model assessment) and how to address them.
- Be able to distinguish good and bad visualisations.
- Identify potential problems in data sets (data cleaning).

Indicative reading list

Show Me the Numbers: Designing Tables and Graphs to Enlighten, Second Edition, Stephen Few, Analytics Press, 2012.
Information Dashboard Design: Displaying data for at-a-glance monitoring, Second Edition, Stephen Few, Analytics Press, 2013.
Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking. Foster Provost, Tom Fawcett. O'Reilly Media, 2013.

Subject specific skills

Perform basic data extraction, cleansing and manipulation tasks.
Visualise data in suitable formats, including dashboard design.
Conduct basic predictive modelling analysis on realistic data.

Transferable skills

Be able to work within a team to analyse data issues and propose solutions.
Communicate analytic findings to a non-technical audience.
Written communication.
Oral communication.

Study

Study time

Type	Required
Other activity	30 hours (39%)
Private study	47 hours (61%)
Total	77 hours

Private study description

Self study comprising of preparation for assessment and pre-reading for lectures

Other activity description

This module will be split as two hours face-to-face workshops and one online lecture hour per week. The lecture hour may be live, or may be prerecorded, or as asynchronous tasks with either online or face-to-face support

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 D3

	Weighting	Study time	Eligible for self-certification
Group Presentation and Report	40%	29 hours	No
Group presentation and report (2000 words)			
In-person Examination	60%	44 hours	No

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

Feedback on assessment

Feedback via My.WBS

Past exam papers for IB9BW

Availability

Courses

This module is Core for:

- Year 1 of TIBS-N1N3 Postgraduate Taught Business Analytics

This module is Optional for:

- 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

This module is Option list C for:

- Year 4 of USTA-G300 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics
- Year 5 of USTA-G301 Undergraduate Master of Mathematics,Operational Research,Statistics and Economics (with Intercalated