

# 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

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## 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.

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## **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.

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## 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 Group presentation and report (2000 words)	40%	29 hours	No
In-person Examination	60%	44 hours	No
<ul style="list-style-type: none"><li>• Answerbook Pink (12 page)</li><li>• Students may use a calculator</li></ul>			

## Feedback on assessment

Feedback via My.WBS

[Past exam papers for IB9BW](#)

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## 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