Aston Business School
Birmingham

BNM828 MARKET ANALYTICS

Academic Year 2013/14

Number of Aston Credits: 15

Number of ECTS Credits: 7.5

Staff Member Responsible for the Module:

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Pre-requisites for the module:

BNM818 Statistical and Econometric Analysis and BNM820 Operational Research Methods or equivalent solid quantitative background, subject to the approval of the course leader.

Mode of Attendance:

The module is available on campus. It is delivered through a combination of lectures, practical exercises, and case studies.

Module Objectives and Learning Outcomes:

- To teach students advanced statistical techniques for the practice of undertaking marketing analytics.
- To introduce students with advanced modelling techniques beyond those covered in conventional marketing research modules (e.g. factor analysis, OLS regression).
- To familiarize students with advanced modelling techniques such as neural networks for the purposes of advanced market analysis.
- To present advanced analytical techniques, which can be used to model markets, customers and competitors.

- To statistically model market potential and discuss advanced statistical techniques to select appropriate markets.
- To discuss common and advanced state-of-the-art techniques for modelling and predicting some real case studies such as customer behaviour, lifetime value, acquisition response, next-product purchase, churn probability, win-back following defection, etc.

Module Content:

Week 1: Market analytics – General principles

Week 2: Introduction to models applied to market analytics

Week 3: Application of time series prediction in business processes

Week 4: An introduction to spreadsheet modelling

Week 5: Analyzing markets, customers and competitors

Week 6: Customer acquisition, retention and growth

Week 7: Direct mail targeting for new customer acquisition, using data mining techniques

Week 8: Statistical modelling of market potential and market selection

Week 9: Revision Week

Week 10: Assessment

Corporate Connections:

Where possible, examples are used from a company context. The coursework is drawn from real world applications and the students are required to perform and present their analysis within the business context. Some outside speakers will be invited to speak on the cutting edge role of marketing modelling with real world applications.

International Dimensions:

Substantial data sets will be used from around the world.

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Contribution of Research:

The faculty member mentioned above conduct research in the fields of Marketing Analytics and Data Mining. New theoretical developments coming from the lecturer's own research agenda will be presented to complement and increase students' awareness but will not be considered for assessment purposes.

Ethics, Responsibility & Sustainability:

The importance of data integrity, ethics, corporate responsibility and sustainability I today's business world has grown exponentially. This is particular true for the modern business where data exploration has a vital role in helping business to gain and sustain a competitive advantage. As an applied scientist using techniques and methodologies for providing support in decision making process, a data analyst carries a significant amount of responsibility in appropriately including these important themes within the applied data analysis techniques while maintaining data integrity and confidentiality. We will in particular raise students' awareness on the importance of ethics and data integrity in data analysis and modeling.

Method of Teaching:

1.25 hours lecture per week, followed by 0.5 hour break, followed by 1.25 hour tutorial/statistical lab session as appropriate.
The SPSS, Excel and IBM SPSS Modeler software packages will be used in the practical sessions. It is essential that the students attend both lectures and practical sessions in order to understand the subject.

Method of Assessment and Feedback:

The module is assessed 40% by individual assignment and 60% by examination. In the assignment you will act as a data analyst expert required to produce a professional report for a complex business case using appropriate, statistical and data mining techniques. Feedback will be provided in two stages. First, around the middle of term where students will have the opportunity to meet the tutors face to face and discuss any issues raised and second at the end of term via the returned feedback sheets. With regard to the exams the students will be required to answer questions, which will assess the students' knowledge on the module's topics as those highlighted in the module's learning outcomes

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Learning Hours:

Pre-reading	17
Contact Hours	23
Directed Learning (within the contact hours)	13
Private Study/Coursework	50
Examination Preparation	47
Total	**150**

The following readings are subject to change. Students should not therefore purchase textbooks prior to commencing their course. If students wish to undertake background reading before starting the course, many of the chapters/readings are available in electronic form via on-line library catalogues and other resources.

Pre-reading:

No pre-reading material is necessary for the topics covered in the module however the students are advised to revise the indicated chapter in the following textbooks since they will help them with the module's coursework and lab sessions. All recommended textbooks are available as e-books through the Aston University Library <http://www1.aston.ac.uk/library>.

Smith, Pauline (2009). *How to write an assignment: proven techniques from a chief examiner that really get results.* 7th ed. [e-book] Oxford: How to Books. Chapters: 3 – 7.

Griffith, Arthur (2010). *SPSS for dummies.* 2nd ed. [e-book] Hoboken, N.J.: Wiley Publishing, Inc. Chapters: 1, 3, 9 – 11.

Essential Reading:

Lectures and tutorial/lab sessions slides and handouts

Indicative Bibliography:

Hair, J.J., Black, W.C., Babin, B.J. and Anderson, R.E. (2010). *Multivariate Data Analysis. A Global Perspective.* 7th Ed. New Jersey, USA: Pearsons.

Field, A. (2013). *Discovering Statistics Using IBM SPSS Statistics.* 4th Ed. New Delhi, India: Sage.

Iacobucci, D. (2013). *Marketing Models.* UK: South-Western, Cencage Learning.