

## **BNM819 Advanced Spreadsheets & Databases**

Number of Aston Credits: 15

Number of ECTS Credits: 7.5

### **Staff Member Responsible for the Module:**

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Availability: Please see office hours on door, use Web Appointment Scheduling System (WASS) or contact group administrator, John Morley, ABS266, Extension 3236

### **Pre-requisites for the Module:**

None.

### **Mode of Study:**

On campus.

### **Module Objectives and Learning Outcomes:**

The spreadsheet package **is one of the most important tools available to a business manager. However, few people receive the knowledge and training needed to use spreadsheets *efficiently* and *effectively* in their daily work. The modern spreadsheet package is much more than a sophisticated calculator. Skilled users can create complete** applications capable of working across the entire organization. A package such as Microsoft Excel has powerful data processing capabilities that rival those of a dedicated database system. It can even harness the power of the Internet to capture, process and present business intelligence.

The spreadsheet also holds a very important position as a research tool. An essential skill for any business researcher is the ability to store, organize, analyse and present data in different ways. In many cases, the spreadsheet may be the only tool needed but even if a more specialized package is used, the spreadsheet will invariably be used to prepare the data for further examination.

In this module students will acquire a wide range of knowledge, skills and techniques that will enable them to develop their own spreadsheet applications. No prior knowledge is



assumed and the module will support further study on the Enterprise Systems and Business Analysis pathways.

Over a number of lectures and practical sessions, we will move from basic techniques (e.g. how to measure and analyse intangibles) through to more sophisticated applications (e.g. how to create a dashboard).

The module also looks at the use of enterprise-class database systems, using industry-standard tools such as MySQL and Microsoft SQL Server. An emphasis is placed on skills that complement other disciplines or that support the use of tools such as Microsoft Excel and SPSS. Some of the areas covered will include data cleansing and data interrogation. Such skills support the study of topics such as data mining or business intelligence, as well as providing useful tools and techniques that can help students analyse research data.

As a whole, the module emphasises the knowledge and skills needed to develop solutions to a professional standard. This gives the module a strong vocational element, taking students from theory to application, that is, from “knowing” to “doing”.

#### Summary of **module objectives**:

To equip students with knowledge, skills and techniques that will:

- > enable them to make efficient and effective use of spreadsheets and databases in their daily work
- > enable them to use spreadsheets and databases to support their research
- > support further study within the MSc ISBA programme

Summary of specific **learning outcomes**. By the end of the module, students will be able to:

- > Explain concepts and terminology related to spreadsheets and databases
- > Understand and apply data modelling/design techniques such as normalisation, data flow diagrams and entity relationship models.
- > Identify, select and apply a range of techniques in order to prepare data for analysis (data cleansing, import, data conversion, etc.)
- > Select and apply a wide range of techniques in order to analyse a variety of business decisions
- > Design and develop simple custom/bespoke information systems using a tool such as MS Excel in combination with other tools such as MySQL
- > Design and produce worksheets in a structured manner, including style guide, navigation system and other features needed for ease-of-use and ease of maintenance



- > Select and apply more sophisticated functions/features such as macros and Visual Basic for Applications

### **Module Content:**

The areas covered may change slightly in response to the group's specific needs, so this list should be taken as indicative content.

- > The role of spreadsheets: history, their use in business, basic capabilities, terminology
- > Designing worksheets: layout of data, commenting, audit information, house styles
- > Designing worksheets: protecting cells, hiding data, repeating headings, formatting cells, notes
- > Designing worksheets: representing problems, converting intangibles to tangibles, validating data, trapping errors, stepwise calculations
- > Getting data: importing data from the Internet and other sources, converting data
- > Data analysis: data cleansing, grouping data, extracting data, simple statistics and tests, what if?, summaries
- > Creating applications: user interfaces, Visual Basic for Applications (VBA), user forms, navigation systems, simple programming techniques (loops, message boxes, conditions, etc.)
- > Databases concepts and techniques including normalisation, data flow diagrams and entity relationship models.
- > Designing and building databases.
- > Structured Query Language and its use as a means of manipulating data.

### **Corporate Connections:**

- > The MSc ISBA itself has been developed with the support of corporate partners.
- > The module will reflect current trends and professional practice as informed by various bodies (British Computer Society, employers, etc.)
- > The assessment for the module will be based around a realistic task that may involve an organisation the student is familiar with.





### International Dimensions:

The methods, concepts, techniques and technologies covered within the module are principally international in nature and are applicable to Europe, the United States, Africa, Australasia and the Far East

### Contribution of Research:

Some of the techniques and concepts presented are intended to help students prepare and analyse data. This will support their work activities but will also support further study on the programme. The skills acquired will also encourage students to conduct research since they will have the skills needed to analyse their own research data.

Some of the pedagogical methods that will be used are based on research carried out by the module leader e.g. the use of formative assessment as a learning and diagnostic tool.

### Method of Teaching:

There will be 10 lectures and 5 tutorial sessions. Students will be given additional reading and tasks for the weeks they do not attend a tutorial.

This version of the module is based on a 15-credit model. More or less time may be needed depending on the needs of students.

### Method of Assessment:

The module will be assessed by individual coursework (100%). Students will produce a portfolio of materials that can be used to document their knowledge and skills.

### Learning Hours:

Contact Hours - Lecture	10
Contact Hours - Tutorial	20
Directed Learning	30
Private Study	30
Assessment (Exam)	1
<b>Total</b>	<b>150</b>

### Essential Reading:

There is no set text for this module. Students are not required to purchase any books because substantial notes, web links, tutorials and other materials will be provided over the course of the module.

### Indicative Bibliography:

Students may find some of the following books useful. One book offering particularly good value is:

Harvey, G. (2007). **Excel 2007 All-in-One Desk Reference for Dummies**. New York: Hungry Minds.

Other useful titles include:

Walkenbach, J., (2004). **Excel VBA Programming for Dummies**, New York: Hungry Minds.

Shepherd, C. (2004). **Excel VBA Macro Programming**. New York, USA: McGraw-Hill Osborne

Walkenbach, J. (2007). **Excel 2007 Power Programming with VBA**. Hoboken, NJ, USA: John Wiley & Sons

Green, J., Bullen, S., Bovey, R. & Alexander, M. (2007). **Excel 2007 VBA Programmer's Reference**. Hoboken, NJ, USA: Wrox

Walkenbach, J. & Pieterse, J., (2007). **Excel 2007 VBA Programming for Dummies**. Hoboken, NJ, USA: John Wiley & Sons

Harvey, G. (2006). **Excel 2007 for Dummies**. Indianapolis, IN, USA: John Wiley & Sons

Walkenbach, J. & Pieterse, J. (2007). **Excel 2007 VBA Programming for Dummies**. Indianapolis, IN, USA: John Wiley & Sons

Bluttman, K. & Aitken, P. (2005). **Excel Formulas and Functions for Dummies**. Indianapolis, IN, USA: John Wiley & Sons



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