GENERAL INFORMATION

This handbook is a guide to the options available to students in the 3rd and 4th years of the BSc Information Systems and Management. The total number of credits accumulated in years 3 and 4 should be 180 credits. A module which runs for 1 term has a value of 15 credits. A module which runs for two terms has a value of 30 credits. The final year project has a value of 30 credits.

It is necessary to obtain at least 120 credits at level 6. Given the normal requirement to obtain 180 credits in years 3 and 4, it follows that at most 60 credits at level 5 can be taken in years 3 and 4.

Level 5 ITApps modules can be included as options, subject to availability and provided the prerequisites are satisfied. See http://www.dcs.bbk.ac.uk/itapps/ for further information. If any ITApps modules are of interest, then please contact the BSc ISM programme director.

When you have decided on your options, you are required to complete the options form on page 22 of this handbook and return it to the Programme Administrator by the 22nd September. If, after submitting your form you wish to change one or more options, then please email the Programme Administrator at: bscadmin@dcs.bbk.ac.uk indicating your new choices.

Although the Department endeavours to provide the modules as stated, there may be last minute changes.

Please note that the suggested texts in the module descriptions may differ from the books recommended for purchase. In the first lecture of each module students will be informed about the books recommended for purchase.

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Cloud Computing Concepts
Level 6
15 credits
BUCI028H6

Lecturer: Dell Zhang

Prerequisites: Software and Programming 2 or equivalent prior experience of programming in Java.

Outline: Students in this module will learn to understand the emerging area of cloud computing and how it relates to traditional models of computing, and gain competence in MapReduce as a programming model for distributed processing of big data.

Aims: This module aims to introduce back-end cloud computing techniques for processing “big data” (terabytes/petabytes) and developing scalable systems (with up to millions of users). We focus mostly on MapReduce, which is presently the most accessible and practical means of computing for “Web-scale” problems, but will discuss other techniques as well.

Syllabus
• Introduction to Cloud Computing
• Cloud Computing Technologies and Types
• Big Data
• MapReduce and Hadoop
• Running Hadoop in the Cloud (Practical Lab Class)
• Developing MapReduce Programs
• Data Management in the Cloud
• Information Retrieval in the Cloud
• Link Analysis in the Cloud
• Beyond MapReduce
• Selected Case Studies

Coursework: One essay of 2,000-3,000 words.

Assessment: Coursework (20%). Examination (80%).

Recommended Reading
• Extensive use is made of other relevant book chapters and research papers that are distributed or provided online.

Computer Networking
Level 5
15 credits
BUCI036H5
Lecturer: Andrea Cali

Outline: The module covers several fundamental aspects of modern computer networks, especially the Internet and its protocols. Foundations are given for networking at all layers, from the physical layer to applications, and the course topics are presented together with their real-world applications.

Aims: The module aims at providing the student the tools for understanding and building network applications, by analysing Internet protocols, the interaction among them, and their applications. There is an emphasis on real-world applications, so as to provide the basic tools to understand and design network hardware and software.
On successful completion of this module the student will be able to:

- Understand the fundamental network protocols and interfaces at any network layer
- Know basic design and performance issues in computer networks
- Write simple Java networking code with sockets

Syllabus

- Computer Networks and their applications
- The physical layer
- The data link layer, LAN and WAN
- The network layer and IP
- The transport layer and TCP
- The application layer, DNS, email, and FTP
- Network security and cryptography

Assessment: A two-hour written examination (90%) and programming coursework (10%).

Recommended Reading

Optional Reading

Concepts of Intelligent Technologies
Level 6
15 credits
BUCl034H6

Lecturer: George Magoulas

Prerequisites: No formal pre-requisite or co-requisite module but knowledge of mathematical concepts such as those presented in the website (http://www.gcseguide.co.uk/mathsgcseguide.htm) is essential.

Outline. The module covers computational algorithms for intelligent information management, decision making and complex problem solving. It provides an introduction to technologies such as knowledge-based systems, artificial neural networks, fuzzy logic, evolutionary computation, hybrid systems showing how such technologies work to support the development of modern intelligent applications.

Syllabus

- Knowledge-based Systems
- Rule-based Expert systems
- Fuzzy Systems
- Uncertainly Management
- Neural Computing
- Genetic and Evolutionary Computing
- Hybrid Approaches

Aims. The module aims to cover fundamental technologies of intelligent systems, illustrate what technologies are useful for and how systems that employ these technologies are designed and built.

On successful completion of this module, the student will be able to:

- Discuss essential facts, concepts, principles, and theories of intelligent systems.
- Discuss fundamental issues relating to the design and implementation of systems that employ intelligent technologies or components
- Apply theoretical understanding of intelligent computing paradigms to solve data modelling, information processing and decision making problems using intelligent systems.
- Recognise legal, social, ethical & professional issues and risk involved in the application and use of intelligent technologies.
- Recognise and analyse specifications appropriate to specific problems and plan strategies for their solution.
- Describe the process involved in the effective deployment of intelligent technologies
- Evaluate intelligent technologies in terms of general quality attributes and possible trade-offs presented within the given problem.

Assessment: A two-hour written examination (100%).

Recommended Reading

M. Negnevitsky, Artificial Intelligence: a Guide to Intelligent Systems, 2nd edition, Addison Wesley. Students will also be directed to online educational resources on the subject.

Database Management

Level 6
15 credits
COIY028H6

Short name: DM
Lecturer: Peter Wood

Prerequisites: ISC, ISM, ITP and ICS

Aims. To familiarise the student with the main concepts underlying Database Management, and in particular with the Relational Database model which is the dominant database system used within corporate IT departments. The course has three main strands: (1) Fundamental concepts introduced using the Entity-Relationship model, (2) Querying a relational database, and (3) Relational database design.

Syllabus
- Entity Relationship Diagrams
- Relational Model
- Querying a Relational Database
- Creating Relational Schemas
- Modifying a Relational Database
- Integrity Constraints in the Relational Model
- Relational Database Design
- Normal Forms
- Normalisation Algorithms
- Object Relational Databases
- Databases and the Web

Assessment: 2-hour written examination and practical coursework, weighting 80% and 20% respectively.

Reading list


Enterprise Computing
Level 6
15 credits
COIY044H6

Prerequisites
Years 1 and 2 of Information Systems & Management (or Foundation Degree or equivalent). Some experience of web applications will also be useful. It is not essential, but it helps, to have taken the module Software and Programming II.

Description
The concept of Enterprise Middleware, a layer of software which lies between application-specific software and operating system(s) in a server environment, is introduced. In its more advanced forms, middleware provides a complete virtual environment for applications, eliminating the need for these applications to access the operating system directly. The need for this layer has been found in commercial server-based applications over several decades, for three main reasons:

• to simplify development of enterprise applications and enable application portability
• to enable the construction of robust, highly scalable, and secure distributed applications
• to enable applications to achieve the qualities of service (cost per transaction, availability, response time, peak transaction rate, etc) demanded by real world applications

Typical examples of advanced middleware systems are Transaction Processing monitors, which are widely used to support large scale commercial server-based applications, and server-based software products conforming to the JEE or .NET specifications. It is estimated that 80% of all large scale server-based systems use some form of middleware. These technologies are now providing the basis for implementing applications using Service Oriented Architectures. The module is fairly demanding, since it aims to give students a working knowledge of important topics in the industry today.

Aims
After completing this course, students should:

• be familiar with large scale server-based applications and the middleware products used to support them, with specific examples of them and their detailed capabilities, and the business context in which they are deployed
• understand the issues involved in designing and building these systems, including architecture, transactions, performance, scalability, security, and specific middleware technologies including remote procedure call, reliable messaging, transaction management and web services
• understand the Qualities of Services required of large scale applications and the design approaches needed to meet these requirements
• understand the behaviour of systems in high load situations, the techniques used to measure them and to ensure satisfactory performance be aware of the management disciplines required to support the operation of large scale commercial systems

Assessment
One two-hour examination (80%)
In-class test - open book (10%)
Lab coursework (10%)

Programming Language Paradigms
Level 6
15 credits

Lecturers: Keith Mannock, Trevor Fenner

Prerequisites: Software and Programming 2

Outline. To create a basic understanding of different programming paradigms and how they can be used in developing software. To provide the opportunity to further develop problem solving skills by studying advanced programming languages and new programming paradigms.
Aims. To enable students to understand the key differences between the various programming paradigms and the applicability of these paradigms to different programming problems. To enable students to deal with the changing requirements of the current day (and future) programmer where "polyglot" programming (the ability to mix and match languages and technologies appropriately) is fast becoming the norm.

Syllabus
- Definition of syntax and semantics;
- Variable scoping and binding - lexical/static and dynamic;
- Normal and applicative order evaluation, parameter passing mechanisms
- Storage allocation: run-time stack, heap storage and garbage collection
- Language support for abstract data types - arrays, maps, lists, etc.;
- Data abstraction and libraries, collections, iterators;
- Recursion, including tail recursion optimisation;
- Continuations, threads, tasks, actors, co-routines, etc.
- The imperative (procedural and object-oriented) language paradigm;
- The functional and logic language paradigms: lambda expressions, environments, predicates, etc.;
- Process oriented languages.
- Domain Specific Languages: scientific computation, symbolic computation, web and Internet computing.

Assessment
By two hour written examination (worth 80%) and practical coursework (worth 20%).

Recommended Reading
Indicative list:


Software and Programming II
Level 6
15 credits
COIY026H6
Lecturers: Keith Mannock and Trevor Fenner

Prerequisite: Software and Programming I

Aims: see online material at http://www.dcs.bbk.ac.uk/~keith/sp2/

Outline. In this module you will be introduced to the use of object-oriented methods for problem solving. Object-oriented programming languages require a different approach to software design from the traditional functional decomposition approach of procedural languages. Object-oriented systems are described in terms of independent objects, and their inter-relationships. Such systems
can provide considerable potential for re-usability, extensibility, and robustness, assisting in the process of programming-in-the-large.

**Syllabus:** see online material at [http://www.dcs.bbk.ac.uk/~keith/teaching](http://www.dcs.bbk.ac.uk/~keith/teaching)

**Coursework:** The practical coursework consists of three programming assignments.

**Assessment:** by three hour written examination (75%) and practical coursework (25%).

**Reading list:** see online material at [http://www.dcs.bbk.ac.uk/~keith/teaching](http://www.dcs.bbk.ac.uk/~keith/teaching)

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**Commercial Law for Business**

MOMN018H5

- **Convenor:** Dr Marion Frenz
- **Lecturers:** Ms Jacqueline Bartley
- **Pre-requisites:** N/A
- **Assessment:** One three-hour written examination (65%), coursework (35%). The word limit of the coursework is 1,500 words.
- **Credit Value:** 15 points at level 5

**Course content**

The course gives students an overview of the law relevant to business organizations. The syllabus is divided into 3 main areas of study: the English legal system, contract law and company law.

The topics covered include an introduction to the structure of the courts, sources of law, European community law, formation of contracts, and sale of goods legislation and formation of companies together with director’s duties.

The course delivery is through lectures, seminars and group discussion. Students are expected to undertake a coursework assignment amounting to 35%

**Aims**

The aims of this module are to:

- to appreciate the law of Contract and the Sale of Goods, which are fundamental to business; and
- to understand the legal consequences of a company having a separate artificial legal personality.

**Learning objectives**

At the end of this module students will:

- be familiar with the law making process both in this jurisdiction and the European Community, and the relationship between them;
• understand the basic elements of English law of contract;
• understand the status of different terms and that the law will imply terms into many contracts;
• understand what amounts to a misrepresentation and appreciate the variety of causes of action and respective remedies;
• recognise the distinction between a partnership and a company, the various types of companies and understand the exceptions to the rule that a company has a separate legal personality.

Recommended reading
Ewan Macintyre, Business Law, 5th Edition

Employment Relations and Human Resource Management

MOMN068H5

• Convenor: Dr. Rebecca Gumbrell-McCormick
• Lecturers: Rebecca Gumbrell-McCormick, Roger Fagg, John Kelly
• Pre-requisites: Management Studies 1 and Management Studies 2
• Assessment: 35% coursework; 65% exam. The word limit of the coursework is 2,500 words.
• Credit Value: 15 points at level 5

Course content
This is a central module on the BA degree programmes in Management. It introduces some of the key concepts, critical debates and issues in the field of Employment Relations and Human Resource Management (ER and HRM) and focuses on such current topical issues as changes to the labour market, equality and inequality, and the role of trade unions, employers and the state.

Aims
The module has the following aims:
1. to introduce key concepts and approaches in the study of the employment relationship;
2. to describe and analyse contemporary developments in ER and HRM in the UK and other selected industrialized countries; and
3. to develop an understanding of some of the current developments in ER and HRM.

Learning objectives
At the end of this module students will have an understanding of:
1. the key models of Employment Relations systems;
2. the changing nature of work;
3. regulation of the employment relationship;
4. the role of the state in contemporary labour markets;
5. the origins, forms, and current practice of HRM;
6. the management of work performance and work rewards;
7. the forms of worker representation; and
8. the key issues in employment relations and current employment legislation.

Recommended reading

- Williams, S (2014) *Introducing Employment Relations: A Critical Approach*, Oxford: Oxford University Press. *(This is the textbook for this module.)*

Financial Management

- **Convenor:** Dr. Christine Guo
- **Lecturers:** Dr. Christine Guo
- **Pre-requisites:** Financial Accounting, Quantitative Methods and Managerial Economics 1 and 2
- **Assessment:** One three-hour written examination (75%), one mid-term test (25%)
- **Credit Value:** 30 points at level 6

**Description**

This module replaces both Capital Markets and Corporate Finance and Applied Corporate Finance. It is very quantitatively and mathematically rigorous. You would be asked to tackle complicated questions that involve basic statistics. It is strongly advised to revise the pre-requisites of this module.

**Course Content**

**Spring Term**

**Week 1**
Lecture: Introduction
Seminar: No seminar
This lecture sets the scene for the rest of the course. During this lecture, we will look at the key concepts of corporate finance, the role of the financial manager and corporate objectives

**Week 2**
Lecture: Investment Decision 1
Seminar: To discuss the problem set in association with the first lecture
We would revisit the basic technique for capital investments appraisal. In particular, we would compare the advantages and disadvantages of net present value and internal rate of return. The profitability index and capital rationing would be examined.

**Week 3**
Lecture: Investment Decision 2  
Seminar: Investment Decision 1  
In this lecture you will be applying the NPV technique to appraise investments with different durations. You would also examine the effect of taxation and inflation in capital budgeting.

**Week 4**
Lecture: Risk and Return  
Seminar: Investment Decision 2  
Uncertainty in capital investments appraisal, expected values, risk and return, diversification.

**Week 5**
Lecture: Portfolio Theory and Two Fund-separation Theorem  
Seminar: Risk and Return  
In this lecture, we examine more formally the portfolio theory. We will see how this can lead to the two-fund separation theorem.

**Week 6**
Lecture: Capital Assets Pricing Model and other pricing models  
Seminar: Portfolio Theory and Two Fund-separation Theorem  
We formally derive the CAPM and discuss other pricing models.

**Week 7**
Lecture: Capital Assets Pricing Model and Capital Investments Appraisal  
Seminar: Capital Assets Pricing Model and other pricing models  
We examine how we can use the CAPM and other pricing models to estimate the cost of Capital.

**Week 8**
Lecture: Sources of Finance – Equity and its Valuation Methods  
Seminar: Capital Assets Pricing Model and Capital Investments Appraisal  
This lecture looks at the issuance of equity as a source of finance. We will also look at how stock markets function.

**Week 9**
Lecture: Sources of Finance - Debt  
Seminar: Sources of Finance – Equity and its Valuation Methods  
We examine how equity value can be estimated in this lecture. The dividend models will be discussed.

**Summer Term**
**Week 1**
Lecture: Valuation of Debt  
Seminar: Sources of Finance - Debt  
In this lecture we will discuss the methods used to value different types of bonds/debts.

**Week 2**
Lecture: Stock Market Efficiency Theory  
Seminar: Valuation of Debt  
The theory and empirical evidence of the market efficiency hypothesis will be examined in this lecture.
Aims

The aims of this module are as follows:

- introduce students to the international world of capital markets and explores the theory of financial management
- gain an understanding of the financial system, which includes the stock, bond and derivative markets and the financial instruments
- deepen students’ knowledge of project evaluation for capital budgeting and be expected to value projects using discounted cash flow analysis
- introduce market efficiency
- the syllabus also includes portfolio theory, capital asset pricing models, capital structure theory and empirical evidence, dividend policy and merger and acquisition
Learning Objectives
At the end of this module students will:

- understand how different financial markets function
- estimate the valuation of financial instruments (including stocks, bonds, options and futures)
- understand the term structure of interest rates
- make capital budgeting decisions under both certainty and uncertainty
- appreciate the application of the Capital Assets Pricing Model in practice
- have a working knowledge of the capital structure theory and dividend policy of a firm
- understand the theory of mergers and acquisitions

Recommended Reading

International Business
MOMN064H6

- Convenor: Dr Paz Estrella Tolentino
- Lecturer: Dr Paz Estrella Tolentino
- Pre-requisites: Managerial Economics 1 and Managerial Economics 2
- Assessment: One two-hour written examination (65%) and coursework (2,500 words) and presentation (35%)
- Credit Value: 15 Credits at level 6

Course content
This advanced undergraduate module (Level 6) takes an academic approach to teaching and learning selected topics in international business.

Aims
The aims of this module are to:

- to develop an advanced understanding of selected topics concerning multinational companies in particular and international companies more generally; and
- to analyse the various modes of international business as strategic means to attain the objectives of the international firm: international trade, international production and various forms of crossborder collaborative arrangements.
**Learning objectives**

At the end of this module students will:

- understand how globalisation is both a cause and effect of current economic issues;
- appreciate the key role of multinational companies as international business institutions;
- know the geographical scope of multinational companies;
- comprehend the evolution of the international firm in a historical context; and
- be able to analyse how the different modes of international business can accomplish the objectives of international companies.

**Supplementary information**

Research published in academic journals is an integral part of teaching and learning in this module.

**Recommended reading**

For background reading:

- Or any International Business textbook.

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**Macroeconomics for Business**

MOMN033H5

- **Convenor:** Dr. Luca Andriani and Dr. Federica Rossi
- **Lecturers:** Dr. Luca Andriani
- **Pre-requisites:** None
- **Assessment:** One mid-term exam (30%) and a two-hour written examination (70%).
- **CAS credit:** 15 points at level 5

**Course content**

This module analyses the most useful and relevant topics in macroeconomics for business decision making. The module covers the basic concepts of managerial economics under the macroeconomic perspectives: business cycle, balance of payment and national account identity, exchange rate and purchasing power parity, monetary policy, fiscal policy and credit market under asymmetric information.

**Aims**

The aims of this module are to:

- At a specific level, to train undergraduate students in management programmes to understand the macroeconomic view in which business are operating;
- At a more general level, to strengthen the analytical and critical thinking skills of undergraduate students in management programmes

**Learning objectives**

At the end of this module students will:
• appreciate the practical utility of modern macroeconomic tools to identify and implement appropriate business strategies in a given situation;

• be able to apply economic theory to specific macroeconomic scenarios;

• develop the widely transferable analytical and critical thinking skills.

Supplementary information
The lecture notes and seminar exercises represent the main study material of this module

Recommended reading
A textbook will be advised before the start of the module. A couple of good textbooks to browse in advance (available from the library) are:


• Keith Pilbeam (2006) “International Finance” Palgrave macmillan. Any edition is fine. I recommend to read the first two chapters

Management of Innovation
MOMN060H6

• **Convenor:** Dr Marion Frenz

• **Lecturers:** Prof Daniele Archibugi, Dr Marion Frenz, Prof Helen Lawton Smith

• **Pre-requisites:** Management Studies 1 and 2

• **Assessment:** Essay 80% and online multiple-choice tests 20% Students are further expected to contribute to one group presentation. The word limit of the coursework is 2,500 words.

• **Credit Value:** 15 points at level 6

Course content
Management of Innovation provides an introduction to key concepts and theories in innovation studies. We examine how firms manage innovation processes, explore different knowledge sources for innovation and look at technology and innovation strategies. A range of different methods used by firms to protect their innovations from imitation is evaluated. Students also learn about wider framework conditions that have a bearing on business innovation, including availability of finance for innovation, public policies and agencies promoting innovation.

Aims
The aims of this module are to:

• to develop an appreciation of the role of different types of innovations and their diffusion in the performances of firms, regions and economies. We consider the impact of groundbreaking technological breakthroughs, but also incremental improvements in goods, services and processes;

• to analyse the key determinants driving business innovation, including internal sources – for example R&D personnel – and learning through collaborations with other businesses with the aim to develop new products, processes and services.
Learning objectives
At the end of this module students will:

• different types of innovations;
• key factors influencing firms' innovation performance;
• a range of theories explaining the rate and type of innovations;
• the relevance of, and rationale for, intellectual property rights, standards and innovation policy;
• the impact of different types of innovations on the firm, economy and society as a whole.

Supplementary information
Assessment
The submission of one essay, the mark of which constitutes 80% of marks awarded for the module, and the completion of online multiple-choice tests, the marks of which constitute 20% of marks awarded for the module. Students are further expected to contribute to one group presentation.

Coursework to be submitted by Monday 10 March 2014

The essay topics are given out at the start of the course and are based on key themes of the module. The word limit of the coursework is 2,500 words.

Recommended reading
Main text:

Further Reading

Marketing Strategy
MOMN044H6

• Convenor: Dr Peter Trim
• Lecturers: Dr Peter Trim
• Pre-requisites: Marketing Principles and Practices
• Assessment: One, two-hour written examination (65%) and one essay of 2,500 words in length (35%).
• Credit Value: 15 CATS at level 6
Course content
This module explores the central issues in international marketing management, and examines in depth a number of topics introduced in Marketing Principles and Practices. Topics covered include: the strategic marketing approach; the link between organizational cultural value systems and national cultural value systems; competitor analysis; market entry strategies; negotiating business deals; and international marketing operations.

Aims
The aims of this module are:

• to explore the central issues in marketing management and strategy;
• to examine in depth a number of topics explored in Marketing Principles and Practices; and
• to provide students with an understanding and appreciation of marketing strategy formulation and implementation.

Learning objectives
The objectives of this module are to understand the complexities associated with marketing strategy formulation with respect to:

• the marketing management process;
• undertaking competitor analysis in relation to developing marketing strategies;
• designing and implementing marketing information systems;
• the necessity to evaluate communications programmes; and how to implement marketing management policy in an international business context.

Learning Outcomes
By the end of this module students should be able to:

• understand the link between marketing strategy theory and practice;
• place marketing strategy formulation and implementation within a management and business context; and
• have developed a number of skills and be confident enough:
  (i) to engage in complex marketing decision making; and
  (ii) participate in international business negotiations.

Recommended reading
Operations Management

MOMN019H5

- **Convenor**: Professor John Kelly
- **Lecturers**: TBC
- **Pre-requisites**: Management Studies 1 and Management Studies 2
- **Assessment**: One two-hour written examination (65%) and coursework (35%). The coursework is an essay of 2,500 words that requires you to analyse a set of organisations through application of the principles of operations management.
- **Credit Value**: 15 Credits at level 5

**Description**

**Course content**

This module presents a managerial perspective on operations management, examining the strategic context of its contribution to the overall success of an organisation. It covers a range of key management decisions, taking a comparative approach to manufacturing and service organisations. Topics include strategic role of Operations Management, product and process design, supply chain management, capacity planning & control, inventory management, project management, quality control and continuous improvement techniques, risk management, and corporate social responsibility.

**Aims**

The aims of this module are to:

- To introduce the main objectives of operations management and the specialist techniques that follow from them;
- To develop a critical understanding of the relevance of operations management models and criteria for decision-making; and
- To develop a strategic perspective on the impact of operations decisions within organisations.

**Learning objectives**

At the end of this module students will:

- Describe the principal tools, concepts and techniques covered in each lecture topic and explain why they are necessary;
- Discriminate between and evaluate different approaches to operational efficiency; and

• Discuss relevant applications of operations practice in service and manufacturing contexts.

Recommended reading

Main Text


The following textbooks provide some alternative reading

  
  An advanced text, providing a strategic perspective for the major issues facing operations managers. Excellent coverage of e-commerce issues as well as general quantitative techniques.

  
  A simple introduction to the basics of operations management.

  
  An advanced text providing a critical, cross-functional perspective on operations decisions.

  
  Detailed text with an emphasis on quantitative techniques.

Relevant Journals:

• *Production & Operations Management; Journal of Operations Management; and Management Science* are the leading academic journals.

• *International Journal of Operations and Production Management; and Supply Chain Management: An International Journal* are more accessible.


Research Methods in Management

MOMN035H6

• **Convenor:** Dr Marion Frenz
• **Lecturers:** Dr Marion Frenz
• **Pre-requisites:** Management Studies 1 and 2, Quantitative Methods
• **Assessment:** Research proposal 80% and multiple-choice test 20%. The word limit of the coursework is 2,500 words.
Credit Value: 15 Credits at level 6

Course content

Research Methods in Management provides students with the necessary skills to design, and complete, their own research projects. The module also helps you to evaluate the quality of published research in the area of business and management. We discuss how to design research questions and how to write a critical literature review. We further explore how the steps in research design are influenced by your research question and by different research traditions. The most common research strategies in management studies are survey and case study strategies, and these are covered in greater depth in the course. We discuss different data collection methods – observations, interviews and questionnaires – and analysis techniques. The module also explains ethical issues that arise when research involves the participation of individuals.

The aims of this module are to give students:

- the required skills to design and write their own research project;
- the foundations of business and management research; and
- an understanding of a number of techniques that can be used to undertake data collection and data analysis.

Aims

The aims of this module are to give students:

- the required skills to design and write their own research project;
- the foundations of business and management research; and
- an understanding of a number of techniques that can be used to undertake data collection and data analysis.

Click here to enter text.

Learning objectives

At the end of this module students will be able to:

- formulate and test the feasibility of research questions;
- write a critically review of the literature;
- collect primary and secondary information;
- apply a range of qualitative and quantitative analyses techniques
- take into account research ethics.
Assessment

The submission of a research proposal, the mark of which constitutes 80% of marks awarded for the module, and the completion of online multiple-choice tests, the marks of which constitute 20% of marks awarded for the module. Students are further expected to present their research proposal in class. The word limit of your research proposal is 2,500 words.

Recommended reading

Key Reading


Further Reading


Organizational Behaviour

MOMN047H5

- Convenor: Gintare Visockaiate
- Lecturers: Gintare Visockaiate
- Pre-requisites: None
- Assessment: 2 hour unseen exam
- Credit value: 15 credits at level 5

Course content

The course introduces a broad sample of the main areas for research and practice in Organizational Behaviour (OB). It helps students understand how individual employees and groups respond to act in organization and how organizations manage their environments. Topics like employee work motivation, personality and work performance, leadership and conflict, organizational culture and change will be introduced to show how individual, group, and organizational characteristics work together to stimulates individual performance and organizational effectiveness.
Aims

• To develop an appreciation of ways in which individuals and modern forms of work organizations might interact.

• To consider some of the complex ways in which behaviour might impact individual and organizational outcomes or performance.

• To develop a critical perspective on the field of OB.

Learning objectives

By the end of the course, students should have developed an understanding of:

• How the ‘individual’, the ‘group’, the ‘organization’ and their interactions are characterised in Organizational Behaviour;

• The complexity involved in impacting and measuring outcomes and performance at individual, group, and organizational level;

• Different approaches to organizational structure and the possible influence of structure on individuals;

• Be able to applying influential theories to explain employee workplace behaviour;

• Take a critical view to look at management practice.

Recommended reading

Calculus 2: Multivariable and Differential Equations
Level 5
30 credits
BUEM001S5

Aims. This module aims to develop the ideas and techniques of calculus introduced in *Calculus 1: Single Variable* to functions of more than one variable. It also covers exact and numerical solutions of ordinary differential equations, as well as modelling problems using differential equations.

Teaching and Assessment. Teaching for this module will take place throughout the year, with eight evenings in each of the Autumn and Spring Terms and two evenings of revision and consolidation in the Summer Term.

Of the final course mark, 80% is based on a three-hour exam in June and the other 20% is from assessed coursework.

Coursework will consist of short, problem based assignments. You will have around three weeks to complete each one.

The examination in the Summer Term has two sections. Section A (worth 40%) consists of compulsory short questions. Section B (also worth 40%) contains several longer questions of which you must answer two.

Syllabus

*Partial Differentiation*  
Limits, formal definition of the derivative, partial differentiation, tangent planes, directional derivatives, stationary points, Lagrange multipliers, the chain rule, Taylor polynomial approximation of a function.

*Integration*  
Double integrals, splitting the integral, changing the order of integration, polar coordinates, line integrals, Green’s Theorem.

*Hyperbolic and Special Functions*  
Hyperbolic functions, sinh, cosh and tanh, gamma functions, beta functions, properties of hyperbolic and special functions, application of hyperbolic and special functions to evaluate certain integrals.

*Ordinary Differential Equations*  
First order differential equations, variable separable, exact differential equations, integrating factors, homogeneous differential equations, some special families of first order differential equations, second order differential equations, homogeneous and non homogeneous differential equations with constant coefficients, some special families of second order differential equations numerical methods for finding approximate solutions of a differential equation.

*Mathematical Models*  
Applications of Calculus including simple harmonic motion, damped and forced oscillations, population models, epidemiology, finance and economics.

Learning Outcomes  
On successful completion of this module a student will be expected to be able to:  
Knowledge and understanding of, and the ability to use, mathematical and/or statistical techniques.  
In particular:

- Techniques of calculus of more than one variable;
- Methods of solution of ordinary differential equations;
- Knowledge and understanding of a range of results in mathematics;
- Appreciation of the need for proof in mathematics, and the ability to follow and construct mathematical arguments. In particular:
- Knowledge of the theory underpinning the techniques of calculus;
- Ability to produce proofs of some results in calculus
- Awareness of the use of mathematics and/or statistics to model problems in the natural and social sciences, and the ability to formulate such problems using appropriate notation. In particular:
• Modelling oscillating systems;
• Modelling problems in biology;
• Modelling problems in finance and economics.
• Knowledge and understanding of the processes and limitations of mathematical approximation and computational mathematics. In particular:
  • Approximating functions using Taylor series;
  • Finding numerical solutions to differential equations;
  • Estimating the error in numerical solutions to differential equations.
• Knowledge and understanding of a range of modelling techniques, their conditions and limitations, and the need to validate and revise models. In particular:
  • Modelling problems using differential equations.
  • A deeper knowledge of some particular areas of mathematics.
• Ability to use a modern mathematical and/or statistical computer package with a programming facility, together with knowledge of other suitable packages.

**Intellectual**

• Ability to comprehend conceptual and abstract material.
• Develop a logical and systematic approach to problem solving.

**Practical**

• Ability to use a range of software packages including word processing and spreadsheets.
• Problem-solving skills, including the ability to assess problems logically and to approach them analytically.
• Highly developed quantitative skills.
• Ability to transfer knowledge and expertise from one context to another.

**Personal and Social**

• Ability to learn independently using a variety of media.
• Ability to work independently with patience and persistence.
• Time-management and organizational skills.
• General IT skills, including word processing and spreadsheets.
• Good communication skills, including the ability to write coherently.
• Ability to complete a sustained and substantial task.
• Ability to complete work in a limited time period.

**Recommended books**

*(provisional list)*

Adams, RA Calculus of several variables, Addison-Wesley
Adams, RA, Calculus: A complete course, Addison-Wesley
Goldsmith C and Nelson D, Extensions of Calculus, Cambridge
Principles of Geographical Information Systems

- **Value**: 30 credit points (1 course unit)
- **Level**: 6
- **Format**: Friday evening lectures (6-9pm) with practical sessions in IT labs
- **Frequency**: runs every year, in the autumn and spring terms
- **Location**: Birkbeck College
- **Lecturers**: Joana Barros and Sam Waples
- **Convenor**: Joana Barros
- **Enquiries and further information**: GEDS Office (geds@bbk.ac.uk), tel: 020 3073 8000

This module introduces the basic principles and applications of geographic information systems (GIS). GIS are defined in this module as ‘systems for handling spatially referenced data and their use in geographical applications’. A key aim is to explore how geographic reality is modelled in a GIS and what kinds of data are already defined, collected and available. Principles covered include those underlying the capturing, editing, structuring, restructing, manipulation, searching, analysing and integrating of spatial data along with the presentation and understanding of spatial data for decision support.

The module also aims to introduce the features of typical software systems used through practical work and present case studies of its application in environmental and socio-economic fields.

- **Supplementary information**

  **Software**

  This module will use the specialist GIS software package ArcGIS.

  We are able to provide students with a free copy of ArcGIS which expires after one year. It gives students the opportunity to undertake substantial parts of the self-paced practical elements at a home computer with internet connection.

  **Assessment**

  The assessment pattern for this module is currently being changed and is subject to approval. The proposed assessment pattern is detailed below.

  The new assessment pattern will consist of:

  - A test on the functions and uses of ArcGIS at the end of first term as well as the theory of GIS (35%).
  - A practical project to be completed by the end of the second term (65%).
• **Recommended reading**


The first part of this book gives an excellent overview of GIS as it discusses the concepts and changes that have been occurring in the field in the last decade. It also presents a range of GIS applications using examples in the UK, and discusses some of the main current issues in GIS.


This is a very good general book. Similar to Longley et al (2005), this book provides a good overview and it is an excellent reading as introduction to GIS. Differently from Longley et al, this book presents Australian based examples.


In comparison to the previous two, this is a more technical book. It uses a simple language and explains clearly all the main topics that will be covered during the course. It has a very different structure from Longley’s book (reference above) and it uses mainly US examples. It contains a CD with data and many exercises that can be followed as extra course practical exercises.

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**Timetable for Years Three and Four, 2014/15**

**Summer term teaching**
Final year students may have their graduation delayed if they choose summer term modules.

**Fourth year project**
The fourth year project, which is compulsory but not timetabled, has a value of 30 credits. There are four types of project: 1) Management; 2) Information Systems Research; 3) Information Systems Development; 4) Computing. Students who choose a type 1 or type 2 project must also take the module Research Methods in Management in year 3. Students who choose a type 3 or a type 4 project are not required to take Research Methods in Management, but they may find it useful to do so. Please note that the RMM coursework includes the preparation of a proposal for a type 1 project. A second proposal would have to be prepared outside RMM for a type 3 project or a type 4 project, whichever is chosen.

**ITApps**
Level 5 ITApps modules are not shown below. They can be included as options subject to availability and provided the prerequisites are satisfied. If any ITApps modules are of interest, then contact the BSc in ISM programme director. Detailed information about ITApps modules can be found at [http://www.dcs.bbk.ac.uk/itapps/](http://www.dcs.bbk.ac.uk/itapps/)

**Lecture Rooms**
Information about rooms can be found in MyBirkbeck. You are advised to check before each lecture because room bookings can change at short notice.
Credits
It is necessary to obtain at least 360 credits of which at least 120 credits must be at level 6. The total value of the modules taken in a single year should not normally exceed 90 credits. In this timetable, modules which are taught in a single term have a value of 15 credits. Modules which are taught over two terms have a value of 30 credits.

Year 3, Autumn Term, compulsory modules

<table>
<thead>
<tr>
<th>Day</th>
<th>Module</th>
<th>Lecturers</th>
<th>Prerequisites</th>
<th>Level</th>
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<tbody>
<tr>
<td>Mon</td>
<td>Information Security</td>
<td>David Weston</td>
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<td>Tues</td>
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Year 3, Spring Term, compulsory modules
None.

Year 3, Summer Term, compulsory modules

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<tr>
<th>Day</th>
<th>Module</th>
<th>Lecturers</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>Mon</td>
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<tr>
<td>Tues</td>
<td>Microeconomics for Business (formerly known as Managerial Economics 1)</td>
<td>Federica Rossi</td>
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<tr>
<td>Fri</td>
<td>Research Methods in Management* (see below)</td>
<td>Marion Frenz</td>
<td>QM</td>
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Year 4, Autumn Term, compulsory modules

<table>
<thead>
<tr>
<th>Day</th>
<th>Module</th>
<th>Lecturers</th>
<th>Prerequisites</th>
<th>Level</th>
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</thead>
<tbody>
<tr>
<td>Mon</td>
<td>Strategic Management</td>
<td>Ian Harrison, Mariangela Siciliano</td>
<td>MStudies (MS1+MS2)</td>
<td>6</td>
</tr>
<tr>
<td>Tues</td>
<td>Social and Organisational Issues in Computing</td>
<td>Brian Gannon</td>
<td></td>
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### Year 4, Spring Term, compulsory modules

<table>
<thead>
<tr>
<th>Day</th>
<th>Module</th>
<th>Lecturers</th>
<th>Prerequisites</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
<td>Strategic Information Systems</td>
<td>Dave Wilson</td>
<td></td>
<td>6</td>
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<tr>
<td>Tues</td>
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### Years 3 and 4, Autumn Term, optional modules

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<tr>
<th>Day</th>
<th>Module</th>
<th>Lecturers</th>
<th>Prerequisites</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
<td>Data Structures and Algorithms</td>
<td>Igor Razgon</td>
<td>ITP or SP1</td>
<td>5</td>
</tr>
<tr>
<td>Tues</td>
<td>Software and Programming 2</td>
<td>Trevor Fenner, Keith Mannock</td>
<td>SP1</td>
<td>6</td>
</tr>
<tr>
<td>&quot;</td>
<td>Financial Management (The second half of this 30 credit module runs in the spring term.)</td>
<td>Qian Guo, Mourad Choudhry</td>
<td>QM, M Econ 1, M Econ 2, FA, MA</td>
<td>6</td>
</tr>
<tr>
<td>Wed</td>
<td>Marketing Strategy</td>
<td>Peter Trim</td>
<td>MPP</td>
<td>6</td>
</tr>
<tr>
<td>&quot;</td>
<td>Programming Language Paradigms</td>
<td>Keith Mannock</td>
<td>SP2</td>
<td>6</td>
</tr>
<tr>
<td>Thu</td>
<td>Concepts of Intelligent Technologies</td>
<td>George Magoulas</td>
<td>Years 1 and 2 of the BSoc or FDIT</td>
<td>6</td>
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<td>&quot;</td>
<td>Organizational Behaviour</td>
<td>Gintare Visockaiate</td>
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<td>5</td>
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<tr>
<td>&quot;</td>
<td>Calculus 2 (Sch. of Economics, Mathematics and Statistics. The second half of this 30 credit module runs in the spring term.)</td>
<td>Manuel Breuning</td>
<td>A Level Mathematics</td>
<td>5</td>
</tr>
<tr>
<td>Fri</td>
<td>Cloud Computing Concepts</td>
<td>Dell Zhang</td>
<td>SP2</td>
<td>6</td>
</tr>
<tr>
<td>&quot;</td>
<td>Principles of Geographical Information Systems (Sch. of Geography. The second half of this 30 credit module runs in the spring term.)</td>
<td>Joana Barros, Sam Waples</td>
<td>Experience using PC software</td>
<td>6</td>
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</tbody>
</table>
## Years 3 and 4, Spring Term, optional modules

<table>
<thead>
<tr>
<th>Day</th>
<th>Module</th>
<th>Lecturers</th>
<th>Prerequisites</th>
<th>Level</th>
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<tbody>
<tr>
<td>Mon</td>
<td>Management of Innovation</td>
<td>Marion Frenz, Prof Helen Lawton-Smith, Prof Daniele Archibugi</td>
<td>M Studies (MS1+MS2)</td>
<td>6</td>
</tr>
<tr>
<td>Tues</td>
<td>Financial Management (The first half of this 30 credit module runs in the autumn term.)</td>
<td>Qian Guo, Mourad Choudhry</td>
<td>QM, M Econ 1, M Econ 2, FA, MA</td>
<td>6</td>
</tr>
<tr>
<td>&quot;</td>
<td>Macroeconomics for Business (formerly known as Managerial Economics 2)</td>
<td>Luca Andriani</td>
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<td>5</td>
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<tr>
<td>&quot;</td>
<td>Computer Networking</td>
<td>Andrea Cali</td>
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<tr>
<td>Wed</td>
<td>Database Management</td>
<td>Peter Wood</td>
<td>ISC, ISM, ICS, ITP</td>
<td>6</td>
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<tr>
<td>Thu</td>
<td>Operations Management</td>
<td>John Kelly</td>
<td>MStudies (MS1+MS2)</td>
<td>5</td>
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<tr>
<td>&quot;</td>
<td>Calculus 2 (Sch. of Economics, Mathematics and Statistics. The first half of this 30 credit module runs in the autumn term.)</td>
<td>Manuel Breuning</td>
<td>A Level Mathematics</td>
<td>5</td>
</tr>
<tr>
<td>Fri</td>
<td>Enterprise Computing</td>
<td>Keith Mannock</td>
<td>Experience with web applications and Java</td>
<td>6</td>
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<tr>
<td>&quot;</td>
<td>Principles of Geographical Information Systems (Sch. of Geography. The first half of this 30 credit module runs in the autumn term.)</td>
<td>Joana Barros, Sam Waples</td>
<td>Experience using PC software</td>
<td>6</td>
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## Years 3 and 4, Summer Term, optional modules

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<tr>
<th>Day</th>
<th>Module</th>
<th>Lecturers</th>
<th>Prerequisites</th>
<th>Level</th>
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<tbody>
<tr>
<td>Mon</td>
<td>Employment Relations and HRM</td>
<td>Rebecca Gumbrell-McCormick</td>
<td>M Studies (MS1+MS2)</td>
<td>5</td>
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<tr>
<td>Wed</td>
<td>International Business</td>
<td>Paz Estrella Tolentino</td>
<td>M Econ 1</td>
<td>6</td>
</tr>
<tr>
<td>Thu</td>
<td>Commercial Law for Business</td>
<td>Marion Frenz</td>
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<td>5</td>
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<tr>
<td>Fri</td>
<td>Research Methods in Management* (see below)</td>
<td>Marion Frenz</td>
<td>QM</td>
<td>6</td>
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</tbody>
</table>

* Research Methods in Management is obligatory for those students who intend to choose a type 1 project (Management) or a type 2 project (Information Systems Research).
BSc in Information Systems & Management

Options Choice Form (2014/2015)

Name: (Please print clearly) _________________________________________________

If you are entering Year 3:

Please indicate your choice of options for year 3 by entering the names of your choices in the table below. You must attempt modules with a total value of 360 credits during the programme.

<table>
<thead>
<tr>
<th>Module Code</th>
<th>Name of Optional Module</th>
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If you are entering Year 4: (and have any remaining options to take)

Please indicate your choice of option or options for year 4 in the table below. You must attempt modules with a total value of 360 credits during the programme.

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<tr>
<th>Module Code</th>
<th>Name of Optional Module</th>
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If possible, please indicate below the Department in which you intend to complete the compulsory final year project:

Computing Project: ☐  Management Project: ☐

(NB: to undertake the Management Research Project OR a Type 2 Computing Project, it is necessary to first undertake the Research Methods in Management module in year 3).

Students who wish to change options after submitting this form should contact the Programme Administrator (bscadmin@dcs.bbk.ac.uk).

Please make sure that you have checked the timetable and that there are no clashes between the modules you attempt. Please also check that you have studied the pre-requisites for optional module/s you have chosen.

Please return this form to the Programme Administrator by 22nd September 2014.

BSc Administrator
Department of Computer Science and Information Systems
Birkbeck College
London
WC1E 7HX