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1. GENERAL INFORMATION

1.1. Welcome

Welcome to all students of the BSc Data Science. The Programme Director is Dr Taolue Chen (taolue@cs.bbk.ac.uk, 020 7631 6622). Taolue Chen is a member of the Department of Computer Science and Information Systems which is located in the Main Building of Birkbeck College. The department is part of the School of Business, Economics and Informatics. The Programme Administrator is Zadkiel Santospirito (zadkiel@cs.bbk.ac.uk, 020 7631 6724).

1.2. Enrolment

Enrolment can be carried out online at www.bbk.ac.uk/mybirkbeck. It is necessary to have a username and a password issued by IT Services.

1.3. Fees/Finance

Fees may be paid by direct debit in instalments and this is probably the best method to adopt. Additional expenses will be incurred and in particular it is important to budget for the purchase of books. An amount of £300 - £350 per year is normal. The College may be able provide financial support. Please see http://www.bbk.ac.uk/mybirkbeck/finance/studentfinance

1.4. Change of Address

If during the year you change your address from your enrolment address, please make sure you inform both the Registry and the Programme Administrator in the DCSIS. Failure to inform the Programme Administrator will mean that you may miss important information concerning the programme and the examinations.

1.5. Workloads

Please note that you are expected to work hard for your degree. To maintain standards you will have to put in a lot of effort. As a minimum you are expected to devote at least as much time outside classes as in classes. Poor attendance at classes and too little study outside the classes usually lead to failure.

1.6. Questions

Any questions or queries concerning the programme should be directed to the Programme Administrator either on 020 7631 6724 or via email at bscadmin@cs.bbk.ac.uk.

1.7. First Day of Attendance

The autumn term starts the week beginning Monday 1st October 2018. You should be able to work out when to attend from the information in this booklet.

1.8. First Year Students

There is an induction evening on Monday, 24th September, 2018. The location for the induction evening will be the usual location for ICS, which will be available on MyBirkbeck.
1.9. International Students

International students (i.e. not home students and not EU students) must notify the BSc Administrator of any absences, including holidays, and any return, temporary or permanent, to their country of origin. This information will be passed to the UK Border Agency.

1.10. Moodle

Information about most modules can be found on the Moodle virtual learning environment. The login page is http://moodle.bbk.ac.uk/. Further information about Moodle can be obtained from this page.

1.11. Birkbeck Evening Nursery

Birkbeck College has an evening nursery, which is available for students and current members of staff and accepts children aged 2-10 years. In exceptional circumstances, children up to 12 will be accepted. However, Staff reserve the right not to accept older children if they are disruptive. Full details, including opening times, may be found at http://www.bbk.ac.uk/mybirkbeck/services/facilities/nursery

1.12. Final Year Project

The final year project, which is compulsory but not timetabled, has a value of 30 credits.

Fee for a “project only” year: if supervision is required, then a fee equal to one quarter of the normal programme fee will be charged.

Further information about the project will be available soon.

1.13 Coursework deadlines

There are usually 2 deadlines for the submission of coursework. The mark for coursework submitted after the first deadline but before the second line is capped at 40% unless a claim for mitigation has been accepted. No coursework can be submitted after the second deadline. Unless otherwise stated, the second deadline is two weeks after the first deadline.

2. TIMETABLE

Dates of term
Autumn Term: Monday 1st October 2018 - Friday 14th December 2018
Spring Term: Monday 7th January 2019 - Friday 22nd March 2019
Summer Term: Monday 22nd April 2019 - Friday 5th July 2019
Credits
Students must 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 exceed 120 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.

Final year project
The final year project, which is compulsory but not timetabled, is level 6 and has a value of 30 credits. There are two types of project: 1) Data Science Systems Development; and 2) Data Science Research.

Optional modules
The optional modules are displayed in three tables, one for each of the autumn, spring and summer terms.

ITApps modules
The ITApps modules are shown with an asterisk.

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.

All modules shown below are taught from 6.00-9.00pm, unless indicated otherwise.

Part time Year 1, Autumn 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>Mathematics for Computing</td>
<td>Paul Newman</td>
<td>None</td>
<td>4</td>
</tr>
<tr>
<td>Tues</td>
<td>Introduction to Programming</td>
<td>Steve Maybank</td>
<td>None</td>
<td>4</td>
</tr>
<tr>
<td>Wed</td>
<td>Introduction to Database Technology</td>
<td>Martin O'Shea</td>
<td>None</td>
<td>4</td>
</tr>
<tr>
<td>Thu</td>
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<tr>
<td>Fri</td>
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</tbody>
</table>

Part time Year 1, 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>System Analysis and Design I</td>
<td>Taolue Chen</td>
<td>None</td>
<td>4</td>
</tr>
<tr>
<td>Tues</td>
<td>Introduction to Computer Systems</td>
<td>Steve Maybank</td>
<td>None</td>
<td>4</td>
</tr>
<tr>
<td>Wed</td>
<td>Foundations of Data Science I</td>
<td>Felix Reidl</td>
<td>ITP</td>
<td>4</td>
</tr>
<tr>
<td>Thu</td>
<td></td>
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<tr>
<td>Fri</td>
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</table>

Part time Year 2, Autumn 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>
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<tr>
<td>Tues</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Wed</td>
<td>Foundations of Data Science II</td>
<td>Taolue Chen</td>
<td>FDSI</td>
<td>5</td>
</tr>
<tr>
<td>Thu</td>
<td>Software Engineering I</td>
<td>Taolue Chen</td>
<td>SADI</td>
<td>5</td>
</tr>
<tr>
<td>Fri</td>
<td>Data Structures and Algorithms</td>
<td>Igor Razgon</td>
<td>ITP or SP1</td>
<td>5</td>
</tr>
</tbody>
</table>
## Part time Year 2, 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>
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<tr>
<td>Tues</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wed</td>
<td>System Analysis and Design II</td>
<td>Andrea Cali</td>
<td>SADI</td>
<td>5</td>
</tr>
<tr>
<td>Thu</td>
<td>Software and Programming I</td>
<td>Roman Kontchakov</td>
<td>ITP</td>
<td>5</td>
</tr>
<tr>
<td>Fri</td>
<td>Computer Networking</td>
<td>Andrea Cali</td>
<td>None</td>
<td>5</td>
</tr>
</tbody>
</table>

## Part time Year 3, Autumn 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>Information Security</td>
<td>Igor Razgon</td>
<td>None</td>
<td>6</td>
</tr>
<tr>
<td>Tues</td>
<td>Introduction to Data Analytics using R</td>
<td>Tingting Han</td>
<td>None</td>
<td>6</td>
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<tr>
<td>Wed</td>
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## Part time Year 3, 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></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tues</td>
<td>Software Engineering II</td>
<td>Stelios Sotiriadis</td>
<td>SE I</td>
<td>6</td>
</tr>
<tr>
<td>Wed</td>
<td>Database Management</td>
<td>Peter Wood</td>
<td>SADI, SADII, ITP, ICS</td>
<td>6</td>
</tr>
<tr>
<td>Thu</td>
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<tr>
<td>Fri</td>
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</table>

## Part time Year 4, Autumn 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></td>
<td></td>
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</tr>
<tr>
<td>Tues</td>
<td>Professional Issues in Computing</td>
<td>Brian Gannon</td>
<td>None</td>
<td></td>
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<tr>
<td>Wed</td>
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<td>Thu</td>
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<td>Fri</td>
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## Part time 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>
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<tr>
<td>Tues</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wed</td>
<td>Data Science Applications and Techniques</td>
<td>Alessandro Provetti</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Thu</td>
<td>Concepts of Machine Learning</td>
<td>George Magoulas</td>
<td>FDSII</td>
<td>6</td>
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<tr>
<td>Fri</td>
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</tbody>
</table>

## Year 3 and Year 4, Part Time, Autumn Term, optional 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>Introduction to the Semantic Technologies (14:00-17:00)</td>
<td>Michael Zakharyaschev</td>
<td>None</td>
<td>6</td>
</tr>
<tr>
<td>Day</td>
<td>Module</td>
<td>Lecturers</td>
<td>Prerequisites</td>
<td>Level</td>
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</tr>
<tr>
<td>Wed</td>
<td>Programming Language Paradigms</td>
<td>Keith Mannock</td>
<td>SP2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Software and Programming II</td>
<td>Carsten Fuhs</td>
<td>SP1</td>
<td>6</td>
</tr>
<tr>
<td>Thu</td>
<td>Introduction to Search Engines and Web Navigation (14:00-17:00)</td>
<td>Mark Levene</td>
<td>SP1 or equivalent</td>
<td>6</td>
</tr>
<tr>
<td>&quot;</td>
<td>Interactive Systems Design</td>
<td>George Magoulas</td>
<td>SADI</td>
<td>6</td>
</tr>
<tr>
<td>&quot;</td>
<td>Calculus 2 (Department 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>
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</table>

**Year 3 and Year 4, Part Time, 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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</thead>
<tbody>
<tr>
<td>Mon</td>
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<tr>
<td>Tues</td>
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<td></td>
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</tr>
<tr>
<td>Thurs</td>
<td>Software and Programming III</td>
<td>Keith Mannock</td>
<td>SP2, primer course</td>
<td>6</td>
</tr>
<tr>
<td>&quot;</td>
<td>Calculus 2 (Department 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>Cloud Computing Concepts</td>
<td>Dell Zhang</td>
<td>SP2</td>
<td>6</td>
</tr>
</tbody>
</table>

3. **COMPULSORY MODULES**

The summaries of all the compulsory modules are given below. The information in the module summaries may change. In particular, you are advised not to purchase books until after the first meeting of any particular module. Confirmation of the recommended books should be provided in the first meeting.

**Computer Networking**

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 (80%) and programming coursework (10%).

**Recommended reading**

**Optional reading**

**Data Structures and Algorithms**
15 credits

**Short name:** DSA
**Lecturer:** Igor Razgon

**Prerequisites:** Introduction to Programming or Software and Programming 1.

**Aims.** Data Structures and Algorithms are fundamental to programming and to understanding computation. The aim of this module is to provide students with a coherent introduction to techniques for using data structures and some basic algorithms. Teaching and learning methods include lectures and reading materials describing techniques for analysing algorithms and applications of data structures. Students will have an opportunity to examine practical problem solving for this area.

**Syllabus**
• Introduction to Data Structures and Algorithms;
• Data structures: arrays, lists, queues, stacks, and sets;
• Trees: binary trees;
• Recursion - Traversing binary trees;
• Dictionary based data structures: binary search trees, hash tables, maps;
• Analysis of running time of algorithms;
• Algorithms for sorting and searching;
• Elementary tree and graph algorithms: depth first and breadth first search;
• Finite state machines (automata) and regular languages;
• Turing machines.

Assessment: two hour written examination (80%) and coursework (20%).

Reading list: TBD.

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

Foundation of Data Science I

15 credits
BUCI069H4

Short name: FDSI
Lecturer: Felix Reidl

Module outline
This module covers fundamental aspects of data science and analytics. Students develop the basic mathematical knowledge and skills needed for further studies in the BSc Data Science programme, and needed by data scientists/analysts in general. These include basic elements of linear algebra, preliminaries for calculus, as well as discrete probability theory and fundamentals of statistics. The module will show you how to use the popular and powerful language Python to solve computational tasks from these mathematical subjects. In particular, this module will get you acquainted with popular Python libraries and packages for programming to solve problems arising from linear algebra, probability theory and statistics.

Aims
On successful completion of this module, you will:

- Demonstrate satisfactory knowledge of basic linear algebra and matrix theory.
- Demonstrate satisfactory knowledge of basic discrete probability theory and statistics.
- Demonstrate satisfactory knowledge of relevant Python libraries and packages.
- Demonstrate satisfactory skills of programming in Python to solve computational tasks from linear algebra and discrete probability theory.
- Understand the link between the basic knowledge acquired from the module and data science/analytics applications.

Assessment
Coursework (20%) One two hour written examination (80%).

Foundation of Data Science II

15 credits

Short name: FDSII
Lecturer: TBA
Module outline

This module covers further fundamental aspects of data science and analytics. It is a direct continuation of Foundations of Data Science I. Apart from consolidating the knowledge they acquired from FDS I, students develop further mathematical knowledge and skills needed for studies in the BSc Data Science programme, and needed by data scientists/analysts in general. These include basic elements of calculus, further topics in linear algebra, as well as continuous probability theory and further statistics. The module will show you how to use the popular and powerful language Python to solve computational tasks from these mathematical subjects. In particular, this module will get you acquainted with popular Python libraries and packages for programming to solve problems arising from calculus, probability theory and statistics.

Aims

On successful completion of this module a student will be expected to be able to:

- Demonstrate satisfactory knowledge of basic calculus.
- Demonstrate satisfactory knowledge of further linear algebra and matrix theory.
- Demonstrate satisfactory knowledge of continuous probability theory and statistics
- Demonstrate satisfactory knowledge of relevant Python libraries and packages
- Demonstrate satisfactory skills of programming in Python to solve computational tasks from calculus, linear algebra, continuous probability theory and statistics.
- Understand the link between the basic knowledge acquired from the module and data science/analytics applications

Assessment

Coursework (20%) One two hour written examination (80%).

Information Security

15 credits
COIY045H6

Lecturer: Igor Razgon

Aims. Information security is about protecting information (and information systems) against unauthorised access and tampering. Avoiding security breaches has a high priority for organisations storing and handling confidential data. This module provides students with an introduction to information security. This covers technical aspects, such as cryptography, but also extends to management aspects, such as security policies, as having the technical
infrastructure in place is only part of the solution. Students will learn how to employ technical solutions effectively in an organisation-wide context.

**Syllabus**

- Overview of Information Security
- Access Control Matrix Model
- Security Policies
- Social Engineering
- Basic Cryptography
- Identity Management
- Access Control Mechanisms
- Confinement
- Assurance and Trust
- Network Intruders and Intrusion Detection
- Firewalls and Malicious Software
- Cryptographic Protocol Concepts

**Prerequisites:** None

**Assessment**

Two-hour written examination (80%) and practical coursework (20%).

**Recommended Reading**


**Introduction to Computer Systems**

BUCI008H4

**Short name:** ICS

**Lecturer:** Steve Maybank

**Syllabus**

- history of computing
- number representations
- Boolean algebra
- data storage
- structure of a computer
- file management
- algorithms
- relational databases

**Prerequisites:** None

**Assessment:** One two-hour written examination (80%) and an in-class test (20%)
Recommended Reading

Introduction to Data Analytics using R
BUCl045H6

15 credits
Short name: IDA

Module leader: Tingting Han
Lecturer(s): Tingting Han

Online material: https://moodle.bbk.ac.uk/course/view.php?id=16458

Module outline
This module covers the principle concepts and techniques of data analytics and how to apply them to large-scale data sets. Students develop the core skills and expertise needed by data scientists, including the use of techniques such as linear regression, classification and clustering. The module will show you how to use the popular and powerful data analysis language and environment R to solve practical problems based on use cases extracted from real domains.

Aims
To study advanced aspects of big data analytics, applying appropriate machine learning techniques to analyse big data sets, assessing the statistical significance of data mining results, and using the open-source tool R to perform basic data mining tasks on big data.

Syllabus
Introduction to big data analytics: big data overview, data pre-processing, concepts of supervised and unsupervised learning.
Basic statistics: mean, median, standard deviation, variance, correlation, covariance.
Linear regression: simple linear regression, introduction to multiple linear regression.
Classification: logistic regression, decision trees, SVM.
Ensemble methods: bagging, random forests, boosting.
Evaluation and validation: cross-validation, assessing the statistical significance of data mining results.
Selection of advanced topics such as: scalable machine learning, big data related techniques, mining stream data, social networks.
Tools: R.

Prerequisites
Experience with a modern programming language.

Coursework
Several pieces practical exercises involving learning and mining big data sets using the tool R.
Assessment
Coursework (20%). Examination (80%).

Recommended reading
An Introduction to Statistical Learning: With Applications in R: Gareth James, Daniela Witten, Trevor Hastie and Robert Tibshirani.

Introduction to Programming  
BUCl007H4  
Level 4

Short name: ITP  
Lecturer: Steve Maybank

Syllabus
- context of Java  
- integrated development environment  
- variables  
- number types  
- arithmetic and Boolean operations  
- if and switch statements  
- loops  
- methods  
- arrays  
- examples of algorithms

Prerequisites: None

Assessment: One two-hour written examination (70%) and an in-laboratory test (30%)

Recommended Reading
Cay S. Horstmann Java for Everyone: compatible with Java 5, 6, and 7, Wiley, 2011.

Mathematics for Computing  
COIY040H4  
Level 4  
15 credits

Lecturer: Oded Lachish

Outline
This module covers the fundamentals of mathematics commonly applied to computing. It aims to introduce the basic elements of discrete mathematics that provide a foundation for the understanding of algorithms and data structures used in computer science.

**Aims**
On successful completion of this course you will:

- Be competent with the basic elements of discrete mathematics
- Be familiar with algorithms
- Have an understanding of the data structures used in computer science

**Prerequisites**
Mathematical methods or equivalent

**Assessment**
Coursework (30%)
One two hour written examination (70%).

**Recommended Reading**
Lipshutz, S, Schaum’s Outline Essential Computer Mathematics

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**Project**
Level 6
Type 3: BUCIO26S6
Type 4: BUCIO27S6

**Projects Coordinator:** Oded Lachish

The project must be taken in the fourth year. There are two types of project, labelled 3 and 4. For further information, see the project briefing document on the departmental intranet at http://www.dcs.bbk.ac.uk/dcswiki/index.php/BSc_ISM_Projects.

**Recommended reading**

**Professional Issues in Computing**
Level 6

**Short name:** SOIC
**Lecturer:** Brian Gannon

**Aims.** This module aims to raise awareness about social implications, rights and duties related to actions we take in our role as computer scientists. This will be achieved by a combination of lectures and seminars given by students.

**Syllabus**
- A brief history of commercial computing
The role of IS in everyday life
Data Protection
Freedom of Information
Intellectual Property
Computer Misuse
Software Contracts
Information Services and the Law (defective software)
Employment and Career Development
E-commerce

Coursework: Essay, Presentation
Assessment: Examination (80%), Essay (10%), Presentation (10%)

Recommended Reading

Software and Programming I
COIY018H5
Short name: SP1

Lecturer: Roman Kontchakov

Aims. On successful completion of this module, students should be able to understand and explain basic procedural and object-oriented features of the Java programming language. In addition, they will be able to edit, compile and run small Java programs using the BlueJ integrated development environment.

Syllabus
- review of primitive data types and arrays
- branching and loops
- objects and classes
- methods and constructors
- instance and static variables and methods
- public and private access
- inheritance and polymorphism
- exception handling
- strings and input/output
- basic data structures and algorithms

Prerequisites: None. However, a general familiarity with computer programming is assumed and successful completion of the module Introduction to Programming would be advantageous.

Assessment: Two in-class tests (25%) and Examination (75%)

Reading list
System Analysis and Design I
COIY016H4
Short name: SADI

Lecturer: Taolue Chen

Outline. The goal of this module is to introduce the basic concepts of information systems and basic techniques for systems analysis and design.

Aims. On completion of this course a sound student will have a preliminary understanding of object oriented technology; know a process through which information systems are developed; be able to build requirements models for information systems using UML 2.

Syllabus
• What Are Information Systems
• Problems in Information Systems Development
• Avoiding the Problems
• What Is Object-Orientation
• Modelling Concepts
• Requirements Capture
• Requirements Analysis
• Refining the Requirements Model
• Object Interaction
• Specifying Operations
• System Design
• Human Computer Interaction
• Software Development Methodologies

Prerequisites: None

Coursework: Two in-class tests and one group project.

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

Recommended Reading

System Analysis and Design II
COIY019H5

Short name: SADII
Lecturer: Andrea Cali
Description. This module aims at providing a wide range of tools for information system management and design, including object-oriented design principles, database design, architecture design and project management techniques.

Aims and Objectives
On successful completion of this module a student will be expected to:

- have knowledge and understanding of object oriented design, database design, architecture design and project management
- model and design classes for object-oriented computer based systems
- develop strategies for solving design problems
- carry out a requirements analysis
- evaluate projects in terms of cost and benefits
- manage a project in its various phases
- apply several software development processes, according to the requirements
- design and manage data in an information system
- understand and design architectures in information systems
- have acquired skills in reporting, analysis and problem solving
- have knowledge and understanding of commercial and economic issues

Prerequisites: None.

Assessment: coursework (20%) in the form of in-class tests, examination (80%).

Recommended reading

Software Engineering I
Level 5
BUCI066H5

Short name: SE1
Lecturer: Taolue Chen

Aims
Software Engineering I is designed to:

- Provide an introduction to software engineering as a professional discipline.
- Provide insight and understanding of the context and constraints within which software is developed.
- Provide a clear understanding of processes, methods, activities, tools and techniques involved in professional software engineering.
- Equip students with the theory, tools and techniques for professional software development and software project management.
- Provide students with the opportunity to participate in practical software engineering tasks.
- Empower students to be able to develop software in a systematic, structured rigorous, safe and secure manner.
Learning Outcomes
On successful completion of this module a student will be expected to be able to:

- Understand the role of software engineering and its importance in software development. Understand the main reasons for success and failure in software development.
- Explain issues of professionalism related to Software Engineering. Understand the social, ethical and legal context in which software engineers work.
- Enumerate the main software development process models, specifically plan based and Agile models, and explain the applicability of these models to the development of different software types.
- Evidence a thorough understanding of software process model activities, including analysis and design, implementation, testing and software deployment. Undertake core software development activities in a structured, competent and professional manner, using industry standard techniques.
- Explain how software is tested to ensure quality. Devise a test plan that includes elements of unit testing, system testing, functional testing, acceptance testing and release testing.
- Understand how systems adapt and evolve, and how systems are maintained throughout their lifespan.
- Understand the range of software project management tasks, including planning, resource and people management, and risk management. Understand standard project management techniques and tools, and be able to apply these techniques and tools to a software development project.
- Understand the role and importance of quality management activities in the software development process, including reviews and inspections. Undertake software quality assurance activities as part of the software development process.
- Explain how software configuration management helps ensure software quality. Undertake software configuration management activities, including version management, change management and release management.
- Use industry standard tools for all areas of the software development process, including tools for all areas of software development, including analysis, design, testing, project management and configuration management.

Syllabus
- Engineering/Software/Software Engineering
- Software Process Models
- Agile Software Development Approaches
- Systems Analysis and Design
- Software Implementation and Deployment
- Software Testing
- Software Evolution
- Software Project Management
- Software Project Planning
- Quality Management and Configuration Management

Prerequisites
None.

Coursework
Portfolio of completed tasks.
Assessment
20% coursework.
80% exam.

Recommended reading

Software Engineering II

15 credits
BUCI067H6

Short name: SE2
Module leader: Gordon McIntyre

Module outline
Software Engineering II covers a range of advanced topics in software engineering. The first part of the module focuses on software quality. It covers several key quality related issues, including software reliability, dependability, safety and security. The module also builds on the topic of risk management and mitigation previously introduced in Software Engineering I. The second part of the module focuses on several key topics in modern software engineering, including software reuse, distributed systems engineering, service-oriented software engineering, and software engineering for large complex systems. At the end of the module, students will be able to understand the broader landscape of the discipline of software engineering, and be able to apply advanced techniques and theory to their software development activity.

Aims
Software Engineering II is designed to:

- Introduce and explore mechanisms for building safe, reliable, resilient, secure and dependable software systems.
- Explore in detail the concept of risk, risk management and risk mitigation.
- Provide a detailed understanding of key concepts in the areas of software procurement and implementation.
- Introduce and explore several advanced topics in contemporary software engineering: notably, distributed systems engineering, service-oriented software engineering, and software engineering for large complex systems.
- Provide students with the opportunity to participate in practical software engineering tasks.
- Empower students to be able to develop software in a systematic, structured rigorous, safe and secure manner.

Learning Outcomes

- Understand how software engineering fits within the wider discipline of systems engineering. Understand the socio-technical and business context of information systems.
- Understand the key concepts of dependability and reliability in software engineering, and explain industry standard approaches for ensuring software dependability and reliability.
- Explain the concept of software safety, and understand the software engineering activities that ensure software safety.
- Understand the key concepts of cybersecurity and be able to undertake a cybersecurity risk assessment.
- Understand the software engineering processes and techniques that ensure software security and resilience. Explain how these processes and techniques are applied in industry.
• Understand risk and software engineering approaches for mitigating risk. Analyse risk and draw up risk management measures.
• Understand different approaches towards software procurement and implementation, including software reuse, COTS and bespoke software development. Explain the affordances and constraints associated with different procurement and implementation methods.
• Explain what a distributed system is. Understand the key challenges involved in creating distributed systems.
• Understand the concept of ‘software as a service’. Understand different approaches to implementing software as a service and the challenges of implementing software as a service.
• Explain the concept of ‘system of systems’. Understand the particular challenges faced in the design and implementation of system of systems software.
• Understand the concepts of embedded software and real-time systems software, and the challenges faced building embedded, real-time systems.

Syllabus
• Systems Engineering
• Software Safety, Dependability and Reliability
• Software Security and Resilience
• Risk Analysis and Management
• Cybersecurity
• Software Reuse
• Distributed Software Engineering
• Service Oriented Software Engineering
• System of Systems Engineering
• Real-time Software Engineering
• Prerequisites

Prerequisites
Software Engineering I

Coursework
Students will performed a detailed risk assessment on a case study organisation.

Assessment
20% coursework.
80% exam.

Recommended reading

4. COMMON AWARDS SCHEME (CAS)

Introduction
1. The majority of Birkbeck’s undergraduate programmes are offered as part of the College’s Common Awards Scheme. Programmes within the Scheme have common regulations, and a common structure, and this makes it possible for you to take modules from programmes across the College which are outside of your normal programme (subject to programme regulations and timetable constraints).
2. This is a brief introduction to the Common Awards Scheme. Further details on programme regulation and areas of interest are available on the Registry website:

http://www.bbk.ac.uk/mybirkbeck/services/rules

**Structure of Programmes**

3. All programmes offered as part of the Common Awards Scheme consist of modules, each of which is “credit-rated”. In order to achieve your award you will need to gain at least the following, and meet the requirements outlined in your programme specification:

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Credits needed</th>
<th>Minimum at upper level</th>
<th>Maximum at lower level</th>
<th>Number of Birkbeck modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honours Degree</td>
<td>360</td>
<td>120 level 6</td>
<td>120 at level 4 (level 4 modules are not included in the calculation for the final classification)</td>
<td>12 modules</td>
</tr>
<tr>
<td>Graduate Diploma</td>
<td>90 (some Birkbeck Graduate Diplomas require 120 credits)</td>
<td>90 level 6</td>
<td>30 level 5 (120 credit Diplomas only)</td>
<td>3/4 modules</td>
</tr>
<tr>
<td>Graduate Certificate</td>
<td>60</td>
<td>45 level 6</td>
<td>15 level 5</td>
<td>2 modules</td>
</tr>
<tr>
<td>Foundation Degree</td>
<td>240</td>
<td>90 level 5</td>
<td>120 at level 4</td>
<td>8 modules</td>
</tr>
<tr>
<td>Diploma of Higher Education</td>
<td>240</td>
<td>90 level 5</td>
<td>120 at level 4</td>
<td>8 modules</td>
</tr>
<tr>
<td>Certificate of Higher Education</td>
<td>120</td>
<td>90 level 4</td>
<td>30 at A Level or NVQ level 3</td>
<td>4 modules</td>
</tr>
<tr>
<td>Certificate of Continuing Education</td>
<td>60</td>
<td>60 level 4</td>
<td>60 level 4</td>
<td>2 modules</td>
</tr>
</tbody>
</table>

4. Each undergraduate degree programme has three levels – level 4 (certificate), level 5 (intermediate) and level 6 (honours). The Common Awards Scheme offers, for undergraduate programmes, half modules (15 credits), modules (30 credits) or double modules (60 modules).

5. The detailed requirements for each programme are published in the relevant programme specification. Each module on a programme is designated as one of the following:
**core**  the module must be taken and passed to allow the student to complete the degree

**compulsory**  the module must be taken, and Programme Regulations must stipulate the minimum assessment that must be attempted

**option**  students may choose a stipulated number of modules from a range made available to them. Option modules are clearly identified in Programme Regulations.

**elective**  students may replace an option module with modules from another programme, subject to approval of Programme Directors, availability of places and timetable requirements.

Modules may also be designated as **pre-requisite** modules, meaning they must be taken and passed to allow for progression to a specified follow-up module.

**Degree Classification**

6. An honours classification may only be awarded for undergraduate honours programmes (single, joint and major/minor) once the programme requirements have been fulfilled. The degree classification formula is as follows:

   a) Module results at Level 4 DO NOT contribute to the determination of classification.

   b) Each module has a weighting (w) - level 5 modules have a weighting of 1, and level 6 modules have a weighting of 2.

   c) Each module has a value (v), where v= one thirtieth of the credit value of the module.

   d) Each module has a result (m), assigned by the relevant board of examiners

   e) The weighted average result will be calculated by the sum of the products (w*v*m) for all level 5 and 6 modules, divided by the sum of the products (w*v)

   f) The final degree classification is decided by the relevant board of examiners – as a guide, results are usually in line with the following:

   **First:** 70% or above for the average weighted module results  
   **Upper Second:** 60% or above for the average weighted module results  
   **Lower Second:** 50% or above for the average weighted module results  
   **Third:** 40% or above for the average weighted module results

7. If you have accumulated 300 credits and passed all the prescribed core modules, but have not fulfilled the requirements for honours then you may be eligible for a pass degree.
8. Certificates of Higher Education and Diplomas of Higher Education may be awarded with Distinction, usually where the weighted average of the modules taken exceeds 70%. Full details on how an award of distinction may be made are available in the Regulations for Taught Programmes of Study.

9. Graduate Certificates and Graduate Diplomas may be awarded with Merit or with Distinction. A Merit is usually awarded where a student has achieved an average result of between 60% and 70% for modules taken at level 6, while a Distinction is usually awarded where a student has achieved an average result of over 70% for modules taken at level 6. Full details are available in the Regulations for Taught Programmes of Study.

**Failure and Re-assessment of a Module**

10. The Regulations for Taught Programmes of Study outline how a Sub-board of Examiners should treat a failed module when considering progression and awards. However, each Sub-board of Examiners is responsible for judging, within these regulations, whether a fail can be “compensated” (i.e. whether you can be awarded credit for that module even if you have not actually passed), whether you will need to re-take the module (see paragraph 11) or whether you will be able to attempt a re-assessment (see 12).

11. For any module on an undergraduate programme, if you fail to pass a module at your first attempt then you may be “re-assessed” or you may be required to “re-take”. Re-assessment is where a student will re-attempt a failed element of a failed module; it does not require attendance at lectures and seminars. A re-take requires attendance at the module’s lectures and seminars as well as another attempt at the assessment. A decision on whether you will be permitted to be re-assessed in one or more elements of a module that has not been passed is at the discretion of the sub-board of examiners.

12. A Sub-board of Examiners may offer an alternative form of assessment for failed elements as part of a re-assessment regime.

13. The timing of any re-assessment will be at the discretion of the Sub-board of Examiners; this will normally be either at the next normal assessment opportunity or in some instances before the beginning of the next academic year.

14. You will normally be offered three attempts at passing a module (the original attempt plus two further attempts, each of which will either be a re-assessment or a re-take). After this, if the module has not been passed it will be classed either as a “compensated fail” (see 15) or a fail. In some cases this will mean that it will not be possible for you to gain the award that you have registered for; in such cases, your registration will normally be terminated.

15. If your module result is between 30 and 39% your Board of Examiners may award a “compensated fail”. This will mean that you retain the module result, but are awarded credit for that module. A Foundation Degree may be awarded to a student carrying no more than 30 credits as compensated fail, and a BA / BSc may be awarded to a student carrying no more than 60 credits as compensated fail. A core module may not be treated as a compensated fail; core modules must be passed in order to gain the award.
Common Award Scheme Policies

1. As part of the introduction of the Common Awards Scheme, the College has implemented a number of College-wide policies. The full policies can be seen at http://www.bbk.ac.uk/mybirkbeck/services/rules
   Some brief details on key policies are included here:

Late Submission of work for assessment

2. College policy dictates how Schools will treat work that is due for assessment but is submitted after the published deadline. Any work that is submitted for formal assessment after the published deadline is given two marks: a penalty mark of 40% for undergraduate students, assuming it is of a pass standard, and the ‘real’ mark that would have been awarded if the work had not been late. Both marks are given to the student on a cover sheet. If the work is not of a pass standard a single mark is given.

3. If you submit late work that is to be considered for assessment then you should provide written documentation, medical or otherwise, to explain why the work was submitted late. You will need to complete a standard pro-forma and submit it, with documentary evidence as appropriate, to your Tutor or Programme Director. The case will then be considered by the appropriate sub-board or delegated panel.

4. If no case is made then the penalty mark will stand. If a case is made and accepted then the examination board may allow the ‘real” mark to stand.

Assessment Offences

5. The College Policy on Assessment Offences incorporates the College policy on plagiarism.

6. The policy describes two stages in the process for dealing with assessment offences (which include plagiarism, collusion, examination offences and other offences). The first stage allows for a formal school investigation, of an allegation; Stage 2 involves a centrally convened panel for serious offences, dealt with under the Code of Student Discipline.

7. The College treats all assessment offences seriously. It makes strenuous efforts to detect plagiarism, including using web-based software that can provide clear evidence. If you are in any doubt as to what constitutes acceptable conduct you should consult your personal tutor or another member of academic staff. The College has a wide range of sanctions that it may apply in cases of plagiarism, including the termination of a student’s registration in the most serious cases.

Mitigating Circumstances

8. The College Policy on Mitigating Circumstances determines how Sub-boards of examiners will treat assessment that has been affected by adverse circumstances. Mitigating Circumstances are defined as unforeseen, unpreventable circumstances that significantly disrupt your performance in assessment. This should not be confused with long term issues such as medical conditions, for which the College can make adjustments before assessment (for guidance on how arrangements can
be made in these cases please see the College’s Procedures for Dealing with Special Examination Arrangements).

9. A Mitigating Circumstances claim should be submitted if valid detrimental circumstances result in:
   a) the late or non-submission of assessment;
   b) non-attendance at examination(s);
   c) poor performance in assessment.

10. For a claim to be accepted you must produce independent documentary evidence to show that the circumstances:
    a) have detrimentally affected your performance or will do so, with respect to 9a, 9b and 9c above;
    b) were unforeseen;
    c) were out of your control and could not have been prevented;
    d) relate directly to the timing of the assessment affected.

11. Documentation should be presented, wherever possible, on the official headed paper of the issuing body, and should normally include the dates of the period in which the circumstances applied. Copies of documentary evidence will not normally be accepted. If you need an original document for another purpose, you should bring the original into the Departmental Office so that a copy can be made by a member of College staff. (Where a photocopy is made by a member of staff they should indicate on the copy that they have seen the original).

12. Discussing your claim with a member of staff does not constitute a submission of a claim of mitigating circumstances.

13. You are encouraged to submit your claim for mitigating circumstances in advance and at the earliest opportunity. The final deadline for submission of a claim is normally 1 week after the final examination unless otherwise stated by your Department. Where possible, claims should be submitted using the standard College Mitigating Circumstances claim form (available from your Department office) which should be submitted in accordance with the procedure for submission published by your Department. Claims should always be supported by appropriate documentary evidence.

14. You should be aware that individual marks will almost never be changed in the light of mitigating circumstances. Assessment is designed to test your achievement rather than your potential; it is not normally possible to gauge what you would have achieved had mitigating circumstances not arisen. Where mitigating circumstances are accepted, and it is judged by an examination board that these circumstances were sufficiently severe to have affected your performance in assessment the usual response will be to offer you another opportunity for assessment without penalty, at the next available opportunity.

15. Guidance on what may constitute acceptable mitigating circumstances is available as an appendix to the policy, available from http://www.bbk.ac.uk/mybirkbeck/services/rules or your Departmental office; you should note that this is not an exhaustive list, and that each case will be treated on its merits by the relevant sub-board or delegated body.

Break-in-Studies Policy
16. The Common Awards Scheme regulations allow you to suspend studies for a maximum of two years in total during your programme of study. This may be for one period of two years, or for non-consecutive shorter periods (see 17) that add up to a total of two years or less.

17. Any break-in-studies on an undergraduate programme would normally be for a minimum of one year; breaks may also be permitted for a period of one or two terms, dependent on the structure of the programme.

18. Any application for a break-in-studies should be made in writing to your programme director or personal tutor. If you are applying for an approved break-in-studies, you should give details of the length of the proposed break and the reasons for the application.

19. You will not be liable for fees while on an approved break-in-studies. If you have attended for part of a term you will normally be liable for the fees due in that term.

20. If you are on a break-in-studies you will not have access to the Library or ITS unless you make an application and pay the appropriate fee to use these facilities. Applications must be made directly to the Library and/or ITS.

21. If you do not re-enrol after having completed two years of break-in-studies you will be deemed to have withdrawn from your programme. If you wish to resume your programme after having been withdrawn, you will normally be required to re-apply for admission.

Other Policies

22. In addition to the policies above, other College academic-related policies include:
   Accredited Prior Learning
   Termination of Registration
   Procedures for Dealing with Special Examination Arrangements
   Suspension of Regulations
   The Operation of Boards and Sub-Boards of Examiners
   The Role of External & Intercollegiate Examiners
   Marking and Moderation
   Feedback on Assessment

   To see these policies, please see the Common Awards Scheme website:

   http://www.bbk.ac.uk/reg/regs

23. The College also operates a Procedure for Appeals Against Decisions of Boards of Examiners; this is also available from this website.

5. IT SERVICES (ITS)
ITS is an academic service department responsible for the central communications and IT infrastructure of the College. We provide a wide range of network services to support the teaching & learning, research and administrative activities of College staff and students.

ITS facilities and services include:

- Extensive campus data network providing high speed connectivity to the Internet
- Purpose-built computer classrooms equipped with up-to-date networked PCs and high-quality printers (at least one open 24 hours a day)
- Wide range of general software applications (e.g. word-processing, email, web) and specialist packages
- Wireless connectivity to the College network from your laptop or other personal computer equipment
- Facilities for students with special needs, including technical support and advice on the use of assistive technologies to help with specific disabilities
- Service Desk for general computing queries
- Practical, hands-on training workshops on general applications and self-training materials to enable you to work at your own pace
- Remote access to College electronic resources and services
- Moodle (an online electronic course management system to support learning)

You can find out more about these services and others by visiting the 'My Birkbeck' website.

Access to all IT services is via a username and password (issued by email) and includes personal storage space on a networked server

You need to provide and maintain an email address that can be used for all College correspondence. Alternatively, you can apply for a web-based Birkbeck email account (hosted by Google). You are expected to access your ‘My Birkbeck Profile’ to update your email address and other personal details and to access information about your programme of study.

We offer support Monday to Friday, the Service Desk is located in the Student Centre (and open when the Student Centre is open), email and telephone support is available 9am – 6pm in vacations, and 9am – 8pm during term time.

<table>
<thead>
<tr>
<th>IT Service Desk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In Person:</strong></td>
</tr>
<tr>
<td><strong>Email:</strong></td>
</tr>
<tr>
<td><strong>Telephone:</strong></td>
</tr>
</tbody>
</table>

6. LIBRARY SERVICES
Although lectures and computing sessions are essential elements of your programme, success in learning depends largely on the reading and research that you undertake. Most items on module reading lists can be found in Birkbeck Library and it is important that you familiarise yourself with the Library as soon as you can. You may also find it useful to use other libraries during your studies.

The entrance to Birkbeck Library is on the ground floor of the main building in Malet Street. Your College ID card gives you automatic access to the Library. There is no need to register. The opening times of the Library are designed to meet the needs of part-time students in full-time work. During term-time, the Library is open 7 days a week, 8.30am – 11.45pm.

The Library is fully staffed for most of the above hours but self-service machines allow you to take out and return books when the Library is not staffed:

- Before 10.00am every day.
- After 10.30pm week days.
- After 6.00pm on Saturdays and Sundays.

You can borrow up to 10 items and they can be renewed as long as no-one else requests them. Most books can be borrowed for 3 weeks. Some books, videos and DVDs can be borrowed for 1 week. A few items can only be issued for 1 day. There is also a Reading Room Collection with reference access to key course readings.

The Library welcomes considerate users. Please remember to renew your items in good time, or return them if other users have requested them. You can find out more about borrowing, renewing and making requests at http://www.bbk.ac.uk/lib/about/borrowing/.

You can access a whole host of electronic journals and databases from any PC in College. These resources can also be accessed from outside College with your IT Services (ITS) username and password.

The Library website is at http://www.bbk.ac.uk/lib. As well as giving comprehensive information about the Library’s services and collections, you can also:

- Search the Library catalogue, renew your books and place reservations on items that are out on loan.
- Read articles in over 25,000 electronic journal titles and newspapers.
- Search databases to help you find out what has been written about the subject you are researching, including the ACM Digital Libraries, Business Source Premier, IEEE Magazines, Nexis UK and the Science and Social Sciences Citation Index (also see the subject guide for further information: http://www.bbk.ac.uk/lib/subguides/business/compsci).
- Access past exam papers.
- Work through LIFE – an online tutorial to help you make the most of the Library.

Birkbeck students can also use a range of other libraries. Students have reference access to most University of London college libraries. In addition, part-time students can join the SCONUL Access Scheme which allows limited borrowing rights at most other higher education libraries. See the Library web site for more information.

If a book you need is not available in the Library or you require any assistance using the resources or finding information, please ask at the Help Desk. Telephone: 020 7631 6063. Alternatively, contact your Subject Librarian, Aidan Smith, directly. Telephone: 020 7631 6062. Email
7. STUDENTS’ UNION

You are automatically a member of the Birkbeck Students’ Union, the University of London Union and NUS upon taking up the offer of a place to study at Birkbeck. NUS cards are available online (NUS Extra) or from the Union Office, Malet Street. Application can be made to become a member of the International Students’ Association by completing a form that can also be obtained from their shop.

Location and Telephone: Offices on the 4th Floor of the extension building in Malet Street. General Union Office is in Room 456, Tel: 020 7631 6335. Enquiries: administrator@bcsu.bbk.ac.uk. Visit the website at http://www.birkbeckunion.org/.

Counselling
The Students’ Union offers counselling free of charge.

8. DISABILITY

At Birkbeck there are students with a wide range of disabilities including dyslexia, visual or hearing impairments, mobility difficulties, mental health needs, medical conditions, respiratory conditions. Many of them have benefited from the advice and support provided by the College’s Disability Office.

8.1. The Disability Office
The College has a Disability Office located in room G12 on the ground floor of the Malet Street building. We have a Disability Service Manager, Mark Pimm, a Disability Administrator, John Muya and a Mental Health Advisor, Elizabeth Hughes. We will shortly be appointing an SpLD Advisor.

All enquiries should come to the Disability Office, who will determine the appropriate referral to specialist staff. They can provide advice and support on travel and parking, physical access, the Disabled Students Allowance, special equipment, personal support, examination arrangements etc. If you have a disability or dyslexia, we recommend you come to our drop in session where we can discuss support and make follow up appointments as necessary. The drop-in sessions are between 4pm and 6pm Monday to Thursday.

The Disability Office can also complete an Individual Student Support Agreement form with you, confirming your support requirements and send this to your School and relevant Departments at the College so they are informed of your needs.

8.2. Access at Birkbeck
Birkbeck's main buildings have wheelchair access, accessible lifts and toilets, our reception desks have induction loops for people with hearing impairments and we have large print and tactile signage. Disabled parking, lockers, specialist seating in lectures and seminars and portable induction loops can all be arranged by the Disability Office.

8.3. The Disabled Students' Allowance
UK and most EU students with disabilities on undergraduate and postgraduate courses are eligible to apply for the Disabled Students' Allowance (DSA). The DSA usually provides thousands of pounds worth of support and all the evidence shows that students who receive it are more likely to complete
their courses successfully. The Disability Office can provide further information on the DSA and can assist you in applying to Student Finance England for this support.

8.4. The Personal Assistance Scheme
Some students need a personal assistant to provide support on their course, for example a note-taker, sign language interpreter, reader, personal assistant, disability mentor or dyslexia support tutor. Birkbeck uses a specialist agency to recruit Personal Assistants and they can assist you with recruiting, training and paying your personal assistant. Please contact the Disability Office for information on this scheme.

8.5. Support in your School
The provision which can be made for students with disabilities by Schools is set out in the Procedures for Students with Disabilities. This is available from the Disability Office and on the disability website (see below).

As mentioned above your School will receive a copy of your Individual Student Support Agreement from the Disability Office. This will make specific recommendations about the support you should receive from the School. Whilst we anticipate that this support will be provided by the Programme Director, tutors and School Administrator. The School of Arts also has a Student Disability Liaison Officer. If you experience any difficulties or require additional support from the School then they may also be able to assist you. They may be contacted through the School Office or the Disability Office.

8.6. Support in IT Services and Library Services
There is a comprehensive range of specialist equipment for students with disabilities in IT Services. This includes software packages for dyslexic students (e.g. Claroread and Inspiration), screen reading and character enhancing software for students with visual impairments, specialist scanning software, large monitors, ergonomic mice and keyboards, specialist orthopaedic chairs etc. For advice and assistance please contact Disability IT Support. There is also a range of specialist equipment in the Library including a CCTV reading machine for visually impaired students as well as specialist orthopaedic chairs and writing slopes. The Disability Office refers all students with disabilities to the Library Access Support service who provides a comprehensive range of services for students with disabilities.

8.7. Specific Learning Difficulties (Dyslexia)
Mature students who experienced problems at school are often unaware that these problems may result from their being dyslexic. Whilst dyslexia cannot be cured, you can learn strategies, which make studying significantly easier. If you think you may be dyslexic you should contact the Disability Office who can screen you and where appropriate refer you to an Educational Psychologist for a dyslexia assessment. These assessments cost £225. Some students can receive assistance in meeting this cost from their employer. In exceptional cases students may receive assistance from the Access to Learning Fund.

8.8. Examinations
Students with disabilities and dyslexia may be eligible for special arrangements for examinations e.g. extra time, use of a word processor, amanuensis, enlarged examination papers etc. In order to receive special arrangements a student must provide medical evidence of their disability (or an Educational Psychologists report if you are dyslexic) to the Disability Office. For School examinations you should contact your Programme Director to request special arrangements at least 2 weeks before the examination. For main College summer examinations you are given the opportunity to declare that you require special provision on your assessment entry form. Students who require provision should then attend an appointment with the Disability Office to discuss and formalise the appropriate
arrangements. The closing date for making special examination arrangements in College examinations is the 15th March and beyond this date consideration will only be given to emergency cases.

8.9. Further information
Full information on disability support can be found at:
http://www.bbk.ac.uk/mybirkbeck/services/facilities/disability
For further information or to make an appointment to see the Disability office, please call the Student Centre on 020 7631 6316 or email disability@bbk.ac.uk. Alternatively you can go to the Disability Office in room G12 between 4pm and 6pm Monday – Thursday for during their drop-in hours.

9. CAREER GUIDANCE

Please see
http://www.bbk.ac.uk/mybirkbeck/services/facilities/careers/individual-and-group-careers-support

10. EXAMINATIONS

Most examinations take place over a three week period (it can be slightly longer) beginning at about the middle of May of each year and are held during the day (not in the evening). Examinations for some but not all modules taught by the Department of Management are held in the autumn or the spring terms, and may be examined in the evening. Students need to ensure that they are able to attend the examinations for each module they are taking. The timetable for the summer examinations is usually available in late March or early April.

Examinations Regulations will be received from Registry prior to the examinations and must be strictly followed. Students should take care not to place themselves under suspicion in any way during examinations. Such care should include divesting themselves of all revision notes before entering the examination venue. Students who are found cheating will be severely dealt with.

10.1. Marking

All examination scripts are double marked. They are marked first by an examiner, usually the person who initially set the examination, and secondly by another examiner, usually someone else in the Department. The scripts are then approved by an external examiner (someone from outside the College, e.g. from another university). The external examiner is able to look at every script but generally only reviews a selection of scripts to see if the standard of marking is consistent with other universities.

10.2. Past Examination Papers

Past papers are available in electronic form via the library web site at http://www.bbk.ac.uk/lib/elib/exam.

10.3. Examination Entry Forms

As an enrolled student on the programme, you are not automatically entered for examinations. It is your responsibility to enter for the appropriate examinations each year. To enter you must fill in an Examination Entry Form on the MyBirkbeck web pages. The Examinations Office will contact
students by email, to ask for confirmation of the modules in which they are to be examined. In cases of difficulty, advice should be sought from the Programme Director. Late submission of the Examination Entry Form may result in you being excluded from the Examination Halls.

If you have been advised to re-take a module there may be a timetable clash. In such cases you should discuss your situation with the Programme Director who will normally advise that you "knock forward" the module displaced by the re-take. The Programme Director may withdraw a module from your examinations if these rules are breached.

10.4. Results

Detailed examination results can only be communicated by the Registry. You should not ask the module lecturers, Programme Administrator or Programme Director about your examination marks. Module lecturers may supply coursework marks but these cannot be taken as the final coursework marks. Each student will receive a written statement of their module marks each year from the Registry and these should be preserved carefully. You will also be written to by the Programme Director to inform you of the decision of the Progression Board as to whether you can proceed to the next year of study. If your results are poor then you may be excluded from the programme. Please note that if you have a debt with the College you will not be informed of your examination results or of your progression until the debt is paid. You will not be allowed to proceed with the programme. Delays may occur if you have not returned books to the library.

11. OTHER INFORMATION

11.1 Organisation of Terms

Birkbeck College operates a term system with three terms per academic year. Normally, teaching takes place in the autumn and the spring terms, but note that some modules are taught in the summer term. Modules that are taught in the autumn term, and that have a summer term examination, are revised in the first two weeks of the summer term. Modules that are taught in the spring term and that have a summer term examination are revised in weeks three and four of the summer term. The summer term revision classes are usually on the same week day as in the earlier terms. These rules may vary, for example if there is a clash with a bank holiday.

Revision sessions are very important, and you are strongly advised to attend them.

11.2 Returning to Study

Some new students will not have studied for some time, perhaps since school, and returning to education can prove difficult. The necessary study skills have sometimes been lost (or perhaps never obtained). For some these skills are easily developed but others need to study how to study. There are a number of books and guides on the subject which should prove helpful.

The following study guides are in the College library.  

The following book, which is also in the College library, covers essay writing,

The College offers learning support and skills training. See http://www.bbk.ac.uk/mybirkbeck/services/facilities/support

### 11.3 Communication and email

Information is communicated to students in a number of ways, including

- announcements in classes and on lecturers’ home pages;
- Moodle virtual learning environment;
- student e-mail.

**E-mail**

All BSc students will be connected to the College e-mail system upon registration with IT Services (ITS) (Note ITS registration is not the same as College Registration/Enrolment.) Access to the e-mail software and your messages is made from the PCs in the various laboratories.

Because of the part-time nature of the degree much use is made of e-mail and the programme web site, including the circulation of important information about the programme and administrative arrangements. You should, therefore, regularly look at your e-mail messages. We make an assumption that you will do so. **Failure to read your e-mail is not a legitimate excuse for being unaware of information which has been circulated.** We find that students tend to look at their e-mail on a regular basis when they are undertaking a module that involves logging on to the PCs but they tend to forget when their modules do not involve use of the PCs. You should make sure that you regularly check your e-mail.

If you wish to send a message to another BSc Computing student, then you should address the e-mail to username@students.bbk.ac.uk. To send a message to a member of staff see their e-mail addresses which are available from http://www.dcs.bbk.ac.uk/dept/staff05.asp

### 11.4. The Programme Web Site

The Programme home page, from which all the other BSc Computing pages can be reached easily, is http://www.dcs.bbk.ac.uk/courses/bsccomp/. Information which pertains to one module only, e.g. the times of in-class tests and coursework deadlines, is the responsibility of the module tutor and is likely be announced in class or posted on Moodle. It is the responsibility of the student to find out the times for in-class tests. A list of useful web pages is included as the last item in this booklet.

### 11.5. Submission of coursework

Most modules include course work assessments which contribute to the overall mark for the module. Coursework should be handed in on time. The mark for coursework handed in after the deadline but within two weeks of the deadline will be capped at 40% unless a claim for mitigation has been
accepted. Submission of coursework may be paper based or it may be electronic, via the Moodle virtual learning environment, as stipulated by the module tutor.

All paper based coursework for DCSIS modules should be prefaced with a completed copy of the form available at http://www.dcs.bbk.ac.uk/dcswiki/index.php/BSc_ISM_Intranet
A list of received coursework or of the marks for the coursework may be displayed in Moodle. It is your responsibility to ensure that receipt of your coursework has been logged.

Some items of coursework are received in electronic form e.g. program source code, web pages etc. The responsibility of ensuring receipt of such items still rests with the student. Students must also submit an appropriate coursework form even for electronically submitted coursework.

Coursework policies vary across the College. The above policies apply to modules taught by the DCSIS.

11.6. Personal Tutors

At the beginning of the autumn term new students will be allocated a Personal Tutor. Birkbeck College is committed to helping students achieve their full potential and the Personal Tutor is an important element of this commitment. The Personal Tutor is the first port of call for general advice and information. Specific difficulties should be discussed with the Personal Tutor and any illness or personal problems that may affect students' performance should be communicated to the Personal Tutor. Questions and issues relating to a particular module would in the first instance normally be directed to the lecturer concerned with that module.

11.7. Financial Difficulties

Students who encounter financial difficulties should see the Programme Director to discuss a way forward. Students who fail to pay their fees are ineligible to continue the programme in any way and are ineligible to sit examinations. Any student who has a debt to the College at the end of the academic year will not be informed of his or her marks until the debt has been cleared. This may result in a delay in progression or a delay in the award of a degree.

11.8. Staff/Student Exchange Committees

Student representatives of each year of the degree programme sit on the Staff/Student Exchange Committee which usually meets once in the autumn term and once in the spring term. The Committee is a forum for an exchange of views, suggestions, feedback and the discussion of any problems, in relation to the degree programme and the various modules.

11.9. Locations

MAIN BUILDING (MB) is the main College building in Malet Street. This houses the Library, some lecture rooms and the computer laboratories.

The CLORE MANAGEMENT CENTRE (CMC) is where the Department of Management is located. It is in Torrington Square behind the Main Building.

GORDON SQUARE is situated north of Malet Street towards Euston Station.

RUSSELL SQUARE is to the east of Senate House.
UCL. The Roberts building is opposite Waterstones on Torrington Place. Foster Court is off Malet Place which is North of Malet Street, The Rockefeller building is on the corner of Gower Street and University Street opposite the Cruciform building. See map available at:  www.ucl.ac.uk/maps.

11.12. Contacts

Department of Computer Science and Information Systems

BSc Programme Administrator, 020 7631 6724, bscadmin@dcs.bbk.ac.uk
Adam Towner, Assistant School Manager, adam@dcs.bbk.ac.uk
Igor Razgon, BSc Computing Programme Director, 7631 6700, igor@dcs.bbk.ac.uk

Useful Web Pages

Programme home page: http://www.dcs.bbk.ac.uk/courses/bsccomp/
Staff (Computer Science): http://vili.dcs.bbk.ac.uk/dept/staff05.asp

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<th>Department of Computer Science and Information Systems</th>
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<td>Birkbeck, University of London</td>
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