Department of Computer Science and Information Systems

MSc/PGDip in Computer Science Programme Arrangements 2014–2015

Version: August 28, 2014
Contents

1 General Information ................................................. 4
  1.1 Important Contacts ........................................ 4
  1.2 Student Support ........................................... 4
  1.3 Additional Information ................................... 4

2 Important Dates .................................................. 6
  2.1 Introductory Talks ......................................... 6
  2.2 Term Dates ................................................... 6

3 Syllabus and Timetables ........................................... 7
  3.1 Syllabus ....................................................... 7
    3.1.1 Compulsory Modules ................................... 7
    3.1.2 Optional Modules .................................... 7
  3.2 Timetables ................................................... 8
    3.2.1 Part-time Students Year 1 .............................. 8
    3.2.2 Part-time Students Year 2 .............................. 8
    3.2.3 Full-time Students .................................... 9
    3.2.4 Day-release Part-time Students ......................... 9
    3.2.5 Optional Modules .................................... 10

4 Module Descriptions .............................................. 11
  4.1 Programming in Java (PiJ) ................................. 11
  4.2 Fundamentals of Computing (FoC) .......................... 13
  4.3 Information Systems (IS) .................................. 14
  4.4 Computer Systems (CS) ................................... 16
  4.5 Data and Knowledge Management (DKM) .................... 17
  4.6 Software Design and Programming (SPD) (formerly Object-Oriented Design and Programming) ................................. 18
  4.7 Data Warehousing and Data Mining (DWDM) .................. 20
  4.8 Fundamentals of Concurrent Systems (FCS) .................... 22
  4.9 Information and Network Security (INSEC) .................. 23
  4.10 Information Retrieval and Organisation (IRO) ............... 25
  4.11 Internet and Web Technologies (IWT) ....................... 26
  4.12 MSc Project ............................................... 27

5 Administration and Assessment ................................... 28
  5.1 Requirements for the Award of the MSc/PGDip .................. 28
  5.2 Announcement of Results ................................... 29
  5.3 Choosing the Optional Module ............................... 29
  5.4 Mitigating Circumstances and Deferral ....................... 29
  5.5 Retake and Reassessment ................................... 30
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.6 Re-enrolment</td>
<td>31</td>
</tr>
<tr>
<td>5.7 Examinations</td>
<td>31</td>
</tr>
<tr>
<td>5.8 Coursework</td>
<td>31</td>
</tr>
<tr>
<td>5.9 Projects</td>
<td>32</td>
</tr>
<tr>
<td>5.10 Assessment Offences and Plagiarism</td>
<td>32</td>
</tr>
<tr>
<td>6 Disability Support Services</td>
<td>34</td>
</tr>
<tr>
<td>7 Career Development</td>
<td>36</td>
</tr>
</tbody>
</table>
1 General Information

1.1 Important Contacts

Programme Director: Szabolcs Mikulás (szabolcs@dcs.bbk.ac.uk)
Programme Administrator: Liam Simmonds (pgadmin@dcs.bbk.ac.uk)
Admissions Tutor: Sergio Gutierrez-Santos (sergut@dcs.bbk.ac.uk)
Projects Tutor: Oded Lachish (oded@dcs.bbk.ac.uk)

1.2 Student Support

Every student is allocated a personal tutor in the first weeks of the programme. The personal tutor is someone students can contact to discuss any problems of a non-academic nature. These may relate to special needs or personal problems that may affect the student’s academic performance. The Department also has a disability officer whom students can contact.

Academic problems should first be addressed to the lecturer concerned. If the problem is not resolved or it does not relate to a specific module, then the Programme Director should be contacted. On the College’s MyBirkbeck site

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

students can find more details on

- information and advice (including the complaints procedure)
  http://www.bbk.ac.uk/mybirkbeck/aig

- student support services
  http://www.bbk.ac.uk/mybirkbeck/services

- student guides
  http://www.bbk.ac.uk/mybirkbeck/guides

It is expected that students familiarise themselves with these pages so that they are aware of the services and regulations.

1.3 Additional Information

More detailed and updated information about the programme is available from the

- internet page
  http://www.dcs.bbk.ac.uk/courses/msccs/

- intranet page (for enrolled students)
  http://www.dcs.bbk.ac.uk/dcswiki/index.php/MSc_CS_Intranet
It is your responsibility to familiarise yourself with the contents of both of this booklet as well as the programme’s web site, and to consult the web site on a regular basis, since additional information will be posted there during the year. You should also read your College email on a regular basis.
2 Important Dates

2.1 Introductory Talks

The programme will kick off with introductory talks to new students:

- Part-time students: 18:00, Thursday, 25 September 2014 (MAL 404);
- Full-time students: 11:00, Monday, 29 September 2014 (MAL 404).

These will include a short hands-on introduction to the departmental computer system. There will also be short presentations by representatives of the library and the disability office.

2.2 Term Dates

Lectures will commence in the week starting on Monday, 29 September 2014. The teaching (i.e. not including exams and project) covers two terms of eleven weeks each (autumn and spring term). The summer term is given over to revision (including revision lectures), exams, and the project.

- Autumn term: Monday, 29 September 2014 – Friday, 12 December 2014
- Spring term: Monday, 5 January 2015 – Friday, 20 March 2015
- Summer term: Monday, 20 April 2015 – Friday, 3 July 2015

See [http://www.bbk.ac.uk/about-us/term-dates](http://www.bbk.ac.uk/about-us/term-dates) for the College holiday closing times.

Students should attend lectures during term time as shown in the timetables in Section 3.2. If students are unable to attend lectures, they should arrange with lecturers or fellow-students to obtain copies of any material distributed in class.

Any student who decides to withdraw from the programme should inform the Programme Administrator, in writing or by email. Students who simply stop turning up for lectures without formally withdrawing from the programme will still be held liable for fees.

It is especially important for international students that they inform the department about any absence, see

[http://www.bbk.ac.uk/management/current-students/overseas-students](http://www.bbk.ac.uk/management/current-students/overseas-students)
3 Syllabus and Timetables

3.1 Syllabus

We give a general overview of the content of the programme here; detailed description of the individual modules is in the next section.

3.1.1 Compulsory Modules

- Programming in Java — PiJ (30 credits)
- Fundamentals of Computing — FoC (15 credits)
- Information Systems — IS (15 credits)
- Computer Systems — CS (15 credits)
- Data and Knowledge Management — DKM (15 credits)
- Software Design and Programming (formerly Object-Oriented Design and Programming) — SDP (15 credits)
- MSc Computer Science Project (60 credits)

3.1.2 Optional Modules

Students also have to choose one optional module from the following list.

- Data Warehousing and Data Mining — DWDM (15 credits)
- Fundamentals of Concurrent Systems — FCS (15 credits)
- Information and Network Security — INSEC (15 credits)
- Information Retrieval and Organisation — IRO (15 credits)
- Internet and Web Technologies — IWT (15 credits)

- A 15-credit, level 7 module offered on the Advanced Computing Technologies MSc programme. For a detailed description of these modules and the timetable, see the following web page:

  http://www.dcs.bbk.ac.uk/courses/mscact/

Please note that this programme runs on a different timetable, so you can only take these modules if you are able to fit them into your schedule. If you are interested in taking a module from the Advanced Computing Technologies MSc programme as an option, please discuss this with the MSc CS Programme Director.
Optional module availability is subject to timetabling constraints and student demand. In the event that an optional module is over subscribed, available places will be allocated on a first-come, first-served basis determined by the date you return your module choice form to the Programme Administrator.

### 3.2 Timetables

The teaching venues will be announced online: [http://www.dcs.bbk.ac.uk/courses/](http://www.dcs.bbk.ac.uk/courses/)

For an overview of the teaching venue locations, please refer to

[http://www.bbk.ac.uk/mybirkbeck/guides/help/class-information/](http://www.bbk.ac.uk/mybirkbeck/guides/help/class-information/)

Below is the timetable for the modules. Note that occasionally there might be changes (e.g. swapping of lectures between modules, or additional tutoring sessions). Please contact regularly the web pages of the modules for up-to-date information.

#### 3.2.1 Part-time Students Year 1

In the first year PT students take only compulsory modules as follows.

<table>
<thead>
<tr>
<th>First year</th>
<th>Term 1 (Autumn)</th>
<th>Term 2 (Spring)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
<td>PiJ</td>
<td>PiJ</td>
</tr>
<tr>
<td>Wed</td>
<td>IS</td>
<td>FoC</td>
</tr>
</tbody>
</table>

#### 3.2.2 Part-time Students Year 2

In the second year PT students follow the compulsory modules below, and also one optional module — see Section 3.2.5 below.

<table>
<thead>
<tr>
<th>Second year</th>
<th>Term 1 (Autumn)</th>
<th>Term 2 (Spring)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thu</td>
<td>DKM</td>
<td>DKM</td>
</tr>
<tr>
<td>Fri, 3rd week only</td>
<td>MSc Project</td>
<td>MSc Project</td>
</tr>
</tbody>
</table>
3.2.3 Full-time Students

FT students follow the compulsory modules below, and also one optional module — see Section 3.2.5 below.

<table>
<thead>
<tr>
<th>Term 1 (Autumn)</th>
<th>13:30–15:00</th>
<th>15:30–17:00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
<td>PiJ</td>
<td>PiJ</td>
</tr>
<tr>
<td>Tue</td>
<td>DKM</td>
<td>DKM</td>
</tr>
<tr>
<td>Wed</td>
<td>PiJ</td>
<td>PiJ</td>
</tr>
<tr>
<td>Thu</td>
<td>IS</td>
<td>FoC</td>
</tr>
<tr>
<td>Fri, 3rd week only</td>
<td>MSc Project</td>
<td>MSc Project</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term 2 (Spring)</th>
<th>13:30–15:00</th>
<th>15:30–17:00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tue</td>
<td>SDP</td>
<td>SDP</td>
</tr>
<tr>
<td>Wed</td>
<td>CS</td>
<td>CS</td>
</tr>
<tr>
<td>Thu</td>
<td>IS</td>
<td>FoC</td>
</tr>
</tbody>
</table>

3.2.4 Day-release Part-time Students

Day-release part-time students attend lectures with the full-time students for one day of the week and attend the other lectures with the part-time students during the evening.

<table>
<thead>
<tr>
<th>First year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon 18:00–21:00</td>
</tr>
<tr>
<td>Thu 13:30–17:00 (term 1)</td>
</tr>
<tr>
<td>Thu 13:30–21:00 (term 2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tue 13:30–17:00 (term 1)</td>
</tr>
<tr>
<td>Tue 13:30–17:00 (term 2)</td>
</tr>
<tr>
<td>Fri 18:00–21:00 (term 1), 3rd week only</td>
</tr>
</tbody>
</table>

Alternatively, students can attend the lectures in any combination of the tables above as
long as all modules are attended in the correct year (PiJ, FoC, IS, and CS in year 1 and
the remaining modules in year 2).

3.2.5 Optional Modules

Here are the times for the optional modules. You have to choose only one of them.

<table>
<thead>
<tr>
<th>Time</th>
<th>Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon 18:00–21:00 (term 1)</td>
<td>INSEC</td>
</tr>
<tr>
<td>Mon 18:00–21:00 (term 2)</td>
<td>FCS</td>
</tr>
<tr>
<td>Tue 18:00–21:00 (term 2)</td>
<td>IRO, IWT</td>
</tr>
<tr>
<td>Wed 18:00–21:00 (term 2)</td>
<td>DWDM</td>
</tr>
</tbody>
</table>
4 Module Descriptions

4.1 Programming in Java (PiJ)

Teaching Staff
Sergio Gutierrez-Santos (module coordinator) and Keith Mannock.

Online material
At the college Moodle server (i.e. at http://moodle.bbk.ac.uk/).

Aims
A substantial part of the first half of the MSc course is devoted to learning how to program. The language used is Java. Assignments are set as part of this module and all students are required to complete them. Students may do the assignments on their own computers or on one of the departmental computers.

Syllabus
- Variables, types, initialization, comments
- Flow control: branches, loops
- Source code version control
- Simple and complex data types: primitive types, strings, (multi-dimensional) arrays
- Introduction to classes and objects: initialization, methods, and constructors
- Data structures: lists, stacks, trees, maps (and iterators)
- Software testing and testing-driven development
- Generics
- More on object orientation: inheritance, polymorphism, overloading
- Recursion
- Exception Handling
- Input/Output
- Network programming
- Concurrent programming

Assessment
By 3-hour written examination and practical coursework, weighting 80% and 20%, respectively.
Reading


4.2 Fundamentals of Computing (FoC)

Teaching Staff
Michael Zakharyaschev (module coordinator), Trevor Fenner

Online material
http://www.dcs.bbk.ac.uk/~michael/foc/foc.html

Aims
Discrete mathematics, mathematical logic, and the related fundamental areas of data structures and algorithms lie at the heart of any modern study of Computer Science. Any understanding of how computers operate and how to use them effectively and efficiently, in terms of either their hardware or software, inevitably involves numerous mathematical concepts.

This module introduces and develops mathematical notions, data structures and algorithms that are used in various areas of Computer Science, in particular those required for other modules of the programme.

Syllabus
- Digital logic. Arithmetic for computers.
- Elements of set theory.
- Finite state machines (automata). Nondeterministic automata.
- Regular languages.
- Context-free languages and pushdown automata.
- Data structures: representations and operations.
- Lists, stacks, queues and deques.
- Trees, forests, binary trees.
- Tree traversal and other operations; binary search trees.
- Organisation of disk storage; methods of file organisation; B-trees.
- Design and analysis of algorithms. Sorting and searching.

Assessment
By 3-hour written examination and coursework exercises, weighting 80% and 20% respectively.

Reading
4.3 Information Systems (IS)

Teaching Staff
David W. Wilson (module coordinator), Brian Gannon

Online material
At the college Moodle server (i.e. at http://moodle.bbk.ac.uk/).

Outline and Aims of the Module
The module sets the social and organisational contexts in which computing is deployed before exploring approaches, processes, methodologies and techniques commonly used for organisational information systems development. The impact of major movements, e.g. packaged approaches to information infrastructure development, outsourcing and offshoring are also explored. Students are required to demonstrate insight into professional and legal issues surrounding Information Systems development.

To empower students to appraise the environments in which information and communications technologies are effectively deployed and to make informed professional decisions about their development within fast changing socio-technical systems. Further to appraise, select or design information processing constructs including files and data schemata, programs and other coded units and the contexts to which they will be fitted. To understand the process of Information Systems development and develop powerful insights to the affects of such systems on evolving social constructs e.g. on-line markets, social structure as well as more traditional processes such as transaction processing and information reporting to management.

Syllabus

• Theories of Information, System and the Information Systems Development Life Cycle
• Project Identification and Selection
• Implementing and Sourcing Information Infrastructures
• Requirements Analysis
• Use Case Modelling
• Class Modelling and Codd’s Normalisation
• Class and Method Design
• Data Protection
• Freedom of Information
• IT Profession
• Intellectual Property Rights
• Software Contracts and Liability

Assessment
By 2-hour written examination and two in-class tests, weighting 80% and 20%, respectively.
Reading


- Bott, Professional Issues in IT, BCS, 2005 ISBN 1 902505 654 (recommended for the social and professional issues topics).

- Other supplementary readings will be advised.
4.4 Computer Systems (CS)

Teaching Staff
Szabolcs Mikulás

Module URL
http://www.dcs.bbk.ac.uk/~szabolcs/compsys.html

Aims of the Module
To learn the basics of computer architecture and organisation, and the role and mechanism of operating systems.

Syllabus
1. Introduction: Computer architecture (CA) and Operating system (OS) overview
2. Processors
3. Processes and threads
4. Concurrency
5. Memory management
6. I/O and file systems
7. Protection and security
8. Distributed and parallel processing

Assessment
By 2-hour written examination and coursework, weighting 90% and 10%, respectively.

Reading
• Recommended reading:
4.5 Data and Knowledge Management (DKM)

Teaching Staff

Nigel Martin

Online material

http://www.dcs.bbk.ac.uk/~nigel/teaching/dkm/

Aims of the Module

This module covers the principles and application of data and knowledge management technologies and languages including SQL. Students study the use of these in leading commercial database management systems as well as emerging approaches to data management.

Syllabus

- Database management software: origins and objectives.
- The relational model: algebraic and logical foundations.
- Relational algebra and calculus.
- SQL: data manipulation, host language support for SQL.
- Transaction management: recovery, concurrency.
- Relational database theory: dependencies, normal forms.
- SQL data definition, other features.
- DBMS architectures and implementations.
- DBMS storage and indexing.
- Query optimisation.
- Enhanced database capabilities: procedural extensions to SQL, database triggers, deductive databases, object DBMS.
- Non-relational DBMS, object databases, NoSQL databases.
- Distributed databases, distributed architectures and connectivity.
- Databases and the Web, Java database programming - JDBC, SQLJ, databases and XML.
- Database research topics.

Assessment

By 2-hour written examination and practical coursework, weighting 90% and 10% respectively.

Reading

4.6 Software Design and Programming (SPD) (formerly Object-Oriented Design and Programming)

Teaching Staff
Oded Lachish and Keith Mannock (module coordinator)

Online material
On the College Moodle server.

Aims of the Module
The main aim of the module is to provide students with the necessary skills for developing software utilising the object-oriented and functional programming paradigms, with Java 8. This ranges from learning object-oriented concepts, designing object-oriented software using a proven methodology and tools, to learning how to program in an object-oriented and functional style. The module provides detailed examination of Software Design Patterns, and the emerging functional features of current day object-oriented programming languages.

Syllabus
- The object model and how it is realised in various object-oriented languages (e.g., Java, Ruby, and C++)
- Further development the ideas of inheritance and polymorphism (including a revision of parametric polymorphism)
- Language features: inner classes, closures, higher-order functions, meta-objects, etc.
- An introduction to Test Driven Design (TDD) and Behavioural Driven Design (BDD)
- The use of an Integrated Development Environment (IDE) for software development: e.g., editing, debugging, compilation, etc.
- Modularity, versioning and packaging, and managing the build process
- Design Patterns and Anti-Patterns and their application to software design
- The SOLID (Single responsibility, Open-closed, Liskov substitution, Interface segregation and Dependency inversion) approach to object oriented programming and design
- Code refactoring and analysis
- Graphical User Interfaces and frameworks
- Persistence Frameworks (e.g., the Java Persistence API)
- Concurrency and agents/actors
Assessment

By 2-hour written examination and coursework exercises, weighting 80% and 20% respectively.

Reading

- Design Patterns: Elements of Reusable Object-Oriented Software by E. Gamma, R. Helm, R. Johnson, and J. Vlissides, Addison Wesley, 1994.
- Head First Design Patterns by Eric Freeman, Elisabeth Robson, Bert Bates, and Kathy Sierra, O’Reilly, 2004
4.7 Data Warehousing and Data Mining (DWDM)

Aims of the Module

To study advanced aspects of data warehousing and data mining, encompassing the principles, research results and commercial application of the technologies.

This module covers the organisation, analysis and mining of large data sets to support business intelligence applications. Students study the principles and commercial application of the technologies, as well as research results and emerging architectures underpinning the analysis and mining of "big data".

Teaching Staff

Nigel Martin

Module URL

http://www.dcs.bbk.ac.uk/~nigel/teaching/dwdm/

Syllabus

- Data warehousing requirements.
- Database technology underpinning data warehousing and data mining.
- Data warehouse architectures. Data marts.
- Data warehouse logical design: star schemas, fact tables, dimensions, snowflake schemas, dimension hierarchies.
- OLAP architectures, OLAP operations. SQL extensions for OLAP.
- Data warehouse physical design: partitioning, parallelism, compression, indexes, materialized views, column stores.
- Data warehouse construction: data extraction, transformation, loading and refreshing. Data warehouse support in Oracle. Warehouse metadata.
- Specialized warehouse architectures. MapReduce and warehouse architectures: Hive.
- Data mining concepts, tasks and algorithms.
- Data mining technologies and implementations. Techniques for mining large databases.
- Data mining support in commercial systems. Data mining standards.
- Research trends in data warehousing and data mining.

Assessment

By 2-hour written examination and practical coursework involving programming and design aspects of a data warehouse. The final module mark will be the exam mark attained. Passing the practical coursework component will be compulsory in order to pass the module overall.
Reading

- Research papers will be distributed to students; students will also be directed to Web resources on the subject.
4.8 Fundamentals of Concurrent Systems (FCS)

Aims of the Module

In this module we will concentrate on concurrency (arising by the use of multithreaded programs or distributed computations). We will introduce a formal approach (labelled transition systems) for modelling concurrent programs and tools (modal and temporal logics) to reason about their behaviours. Applications include software engineering (formal specification and verification of concurrent programs) and distributed systems (reasoning about knowledge in multi-agent systems).

Teaching Staff

Szabolcs Mikulás

Module URL

http://www.dcs.bbk.ac.uk/~szabolcs/log.html

Syllabus

1. Concurrency mechanisms (semaphores, monitors, software solutions, message passing)
2. Modelling concurrent programs (labelled transition systems)
3. Basics of propositional logic (syntax, semantics, decidability)
4. Basics of modal and temporal logics (syntax, semantics)
5. Temporal logic as a specification language
6. Model checking for temporal logic
7. Verification using model checking
8. Rule-based verification
9. Other applications of modal/temporal logic (multi-agent systems, knowledge representation) — depending on student interest

Assessment

By 2-hour written examination (100%) and regular, compulsory homework (0%).

Reading

The textbook is


and there will be additional reading material/notes distributed.
4.9 Information and Network Security (INSEC)

Aims of the Module

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.

The main aim of this module is to provide broad coverage of the field of information security. This course covers the technical as well as the management side of security in information systems. Despite being an essential part of security, technical methods such as cryptography are not enough to guarantee a high level of security. They have to be embedded into a wider context in order to make them more effective. Users of technology have to understand the underlying principles and follow certain policies to avoid security breaches. This module introduces the fundamental approaches to security engineering and includes a detailed look at some important applications.

Teaching Staff

David Weston

Online material

http://www.dcs.bbk.ac.uk/~dweston/

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
- Authentication
- Key Exchange
- Economics of Information Security

Assessment

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

4.10 Information Retrieval and Organisation (IRO)

Aims of the Module

Due to the explosive growth of digital information in recent years, modern Information Retrieval (IR) systems such as search engines have become more and more important in almost everyone's work and life (e.g. see the phenomenal rise of Google). IR is one of the hottest research areas in academia as well as industry. The aim of this module is to introduce IR concepts and techniques, from basic text indexing to advanced text mining. Both theoretical and practical aspects of IR systems will be presented and the most recent issues in the field of IR will be discussed. This will give students an insight into how modern search engines work and are developed.

Teaching Staff

Dell Zhang (module coordinator), Mark Levene

Online material

http://www.dcs.bbk.ac.uk/~dell/teaching/ir/

Syllabus

- Boolean Retrieval
- The Term Vocabulary & Postings Lists
- Dictionaries & Tolerant Retrieval
- Index Construction & Compression
- Scoring, Term Weighting & the Vector Space Model
- Computing Scores in A Complete Search System
- Evaluation in Information Retrieval, Relevance Feedback & Query Expansion
- Probabilistic Information Retrieval
- Language Models for Information Retrieval
- Text Classification, Naive Bayes & Vector Space Classification
- Flat & Hierarchical Clustering
- Advanced Topics in IR

Assessment

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

Reading

4.11 Internet and Web Technologies (IWT)

Aims of the Module

To provide students with an understanding of how network protocols work, particularly those used on the Internet, and the ability to present and manipulate information on the World Wide Web, with an emphasis on XML.

Teaching Staff

Peter Wood

Online material

http://www.dcs.bbk.ac.uk/~ptw/teaching/IWT.html

Syllabus

- Introduction to the Internet and its applications
- Web languages (e.g. HTML, XHTML, XML)
- Languages for defining Web document types (e.g. DTDs)
- Web query and transformation languages (e.g. XPath, XSLT)
- Client-side processing (e.g. using Javascript, DOM)
- Server-side processing (e.g. using CGI, Perl and PHP)
- The transport layer (e.g. TCP, UDP)
- The network layer (e.g. IP, DHCP, ICMP)
- The link layer (e.g. Ethernet, ARP)

Assessment

By 2-hour written examination and coursework exercises, weighting 80% and 20% respectively.

Reading

4.12 MSc Project

Aims of the Module

In the MSc project students will be able to demonstrate their skills in organising and completing a task that goes beyond a typical coursework assignment. This includes planning and executing a major piece of programming work appropriate to the MSc programme and presenting existing approaches in the problem area (placing the student’s own approach in the wider context).

Students are encouraged to come up with their own ideas for projects. In order to arrange supervision for the project a student should discuss possible projects with the Projects Tutor, Programme Director, or with the lecturer who seems the most appropriate for the topic.

Teaching Staff

Supervisor of the project, Projects Tutor

Online material

http://www.dcs.bbk.ac.uk/dcswiki/index.php/MSc_CS_project

Syllabus

The main part of the module will be done by the student on his or her own (supported by the supervisor). There is a small taught part of the module in which the students are acquainted with

- how to formulate the objectives/aims of an MSc project
- how to write a project proposal
- how to organise and plan the project
- how to research literature
- how to write a project report.

Assessment

Written project proposal (of about 2000-3000 words) and written project report (of about 10,000 words), weighting 20% and 80%, respectively.

Reading

- As recommended by the supervisor.
5 Administration and Assessment

For detailed College rules and regulations see

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

and, in particular,

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

Below we summarise the most relevant rules for the MSc/PGDip CS.

5.1 Requirements for the Award of the MSc/PGDip

Each taught module (all modules except the project) is assessed by a written exam and, in most cases, by additional coursework. The project module is assessed by the project proposal document (20%) and the project report (80%).

For each module, a Pass requires at least 50% of the available marks (computed according to the corresponding weights of the parts of the assessment). Up to 30 credits of the taught modules with a mark between 40% and 49% can be compensated (assuming that the total weighted average mark is above 50%) on the MSc (note that College regulations do not allow compensation on PGDip and PGCert). Additionally, there is a 60 credit project module.

To gain an award the following is required:

- Postgraduate Certificate (PGCert): pass the 30-credit module Programming in Java and two additional compulsory 15-credit modules.

- Postgraduate Diploma (PGDip): pass all compulsory taught modules and one optional taught module.

- Master of Science (MSc): requirements for PGDip and pass the project.

The final grade is computed by taking the weighted average (according to the credits) of the module assessment marks. The following has to be satisfied:

- Pass requires at least a 50% weighted average pass mark

- Merit requires at least a 60% weighted average pass mark

- Distinction requires at least a 70% weighted average pass mark and, normally, at least 70% on the project.
5.2 Announcement of Results

The Examination Board meets in July to consider the results of the written exams and coursework, and in November to consider the results of the projects and to award degree.

Shortly after the meeting of the exam board you will receive a letter from the Department about your results. Your results and grades will be officially confirmed by the College on your MyBirkbeck profile.

Students who have not paid their fees are given no information at all about their examination results.

5.3 Choosing the Optional Module

You will receive a form from the Programme Administrator at the beginning of the relevant term to indicate your choice of the optional module. You have to return this form by the specified deadline so that your chosen module can be listed among the modules that you wanted to be assessed that year.

Optional module availability is subject to timetabling constraints and student demand. In the event that an optional module is over-subscribed, available places will be allocated on a first-come, first-served basis determined by the date you return your module choice form to the Programme Administrator.

5.4 Mitigating Circumstances and Deferral

A Mitigating Circumstances claim should be submitted if valid detrimental circumstances result in:

- the late or non-submission of assessment;
- non-attendance of examination(s);
- poor performance in assessment.

If a student feels their circumstances warrant consideration by the Board of Examiners they should notify the Programme Director, in writing, in advance, at the earliest opportunity (within 7 days of the assessment deadline or examination) using a Mitigating Circumstances Claim Form, which can be downloaded from MyBirkbeck:

http://www.bbk.ac.uk/mybirkbeck/services/administration/assessment/exams/mitigating-circumstances

In the form, students should state whether the circumstances relate to non-attendance at an examination or late submission of an assignment and should include supporting evidence (e.g. a medical certificate giving the nature and duration of any illness). They may inform their personal tutor, in confidence, of any problem they may not wish to disclose in writing. They should also complete late submission of coursework forms. If
they discover subsequently that there are circumstances they could not report in advance, these should be notified to the Programme Director in writing as soon as possible. Students should be aware that discussing their claim with a member of staff does not constitute a submission of a claim of mitigating circumstances.

For a claim to be accepted a student must produce independent documentary evidence to show that the circumstances:

- have detrimentally affected their performance/submission/attendance in assessment or will do so;
- were unforeseen;
- were out of their control and could not have been prevented;
- relate directly to the timing of the assessment affected.

For further information, students may consult the document on mitigating circumstances through MyBirkbeck:

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

In exceptional cases, students may be permitted to defer the written exams and/or the project to the following year. They must apply by filling in a Mitigating Circumstances Claim Form. Students have to do this before 1 May for exams and by 1 September for the project. A student who defers an element of assessment normally has to enter for that element the following year; usually no further deferrals are permitted.

Simply not turning up for an exam or failing to submit a coursework or project, without permission to defer, will be considered to be the same as failing it, in the sense that it will count as one of the two attempts that you are permitted to make at passing that element.

5.5 Retake and Reassessment

One reassessment (but only one) is allowed for each element. You maybe reassessed in a failed coursework, written exam or the project if your marks for that module are below 50%. If your marks are below 40%, then you have to retake the whole module (i.e., attend lectures and be reassessed in each element of the module, including coursework and exam).\(^1\)

There are no special resit exams; students resit alongside the other candidates in May/June the following year. They normally do so a year after their first attempt. Where the syllabus has changed, we set a paper that is suitable for resit candidates, providing alternative questions where necessary. Note, however, that we do this only for candidates from the previous year, not from further in the past.

\(^1\) Any student awarded a reassessment opportunity in 2014/15 or before will not be subject to a cap for a reassessment taken in 2015/16. However, students who fail an assessment in 2015/16 and awarded a reassessment opportunity will have their reassessment subject to a cap of 50% for the reassessed element. The cap does not apply to a retake of a whole module.
5.6 Re-enrolment

Repeat students, i.e. students who have to retake some modules (and are not taking any new modules) will be charged pro-rata based on the number of credits they retake.

Assessment only students, i.e. those students who

- are being reassessed for coursework and/or examinations only
- have deferred their examinations and are not taking any new modules
- have deferred the project and do not require supervision (resubmitting only)

pay a reduced fee that will allow them access to College facilities (Library and workstation rooms). While deferred students are classed as assessment only they are allowed to attend lectures for revision purposes. They should formally seek the permission of module tutors to ensure classes are not oversubscribed.

Dissertation only students, i.e. students who retake the project with supervision, pay one third of full fees. Note that

- a student who has to resubmit the dissertation and be reassessed for examination or coursework will be progressed as dissertation only
- a student who has to resubmit the dissertation and also repeat modules will be progressed as repeat and fees are based pro-rata on the number of credits.

5.7 Examinations

Please consult the programme’s intranet web page (for enrolled students):

http://www.dcs.bbk.ac.uk/dcswiki/index.php/MSc_CS_Intranet

5.8 Coursework

A number of modules require students to submit coursework as part of the assessment. Please consult the web page of the relevant module or contact the teaching staff of the module for particular details.

Submitted coursework must always be the students own work, except where explicitly noted. Students are required to confirm in writing or via e-mail that each item of coursework submitted is indeed their own work. The Department and College have strict guidelines and penalties associated with plagiarism, and routinely submit students’ work to plagiarism detection services. More details are given in the section “Assessment Offences and Plagiarism” of this booklet.

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 but before the cut-off date (normally ten working days after the deadline) is given two marks: a penalty mark of 50% for postgraduate 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.

If you submit late work that is to be considered for assessment, then you should submit a mitigating circumstances form, see above, and provide written documentation, medical or otherwise, to explain why the work was submitted late. The case will then be considered by the appropriate sub-board or delegated panel of the Board of Examiners.

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

5.9 Projects

Please consult the programme’s intranet web page (for enrolled students):

http://www.dcs.bbk.ac.uk/dcswiki/index.php/MSc_CS_Intranet

5.10 Assessment Offences and Plagiarism

See at MyBirkbeck

http://www.bbk.ac.uk/mybirkbeck/services/administration/assessment/offences

for the College Policy on Assessment Offences.

One particular assessment offence is plagiarism that is defined as “copying a whole or substantial parts of a paper from a source text (e.g., a web site, journal article, book or encyclopedia), without proper acknowledgement; paraphrasing of another’s piece of work closely, with minor changes but with the essential meaning, form and/or progression of ideas maintained; piecing together sections of the work of others into a new whole; procuring a paper from a company or essay bank (including Internet sites); submitting another student’s work, with or without that student’s knowledge; submitting a paper written by someone else (e.g., a peer or relative), and passing it off as one’s own; representing a piece of joint or group work as one’s own”. Also, a “student who knowingly assists another student to plagiarise (for example by willingly giving them their own work to copy from) is committing an examination offence.”

The College considers plagiarism a serious offence, and as such it warrants disciplinary action. This is particularly important in assessed pieces of work where plagiarism goes so far as to dishonestly claim credit for ideas that have been taken by someone else.

The College also provides learning support for exams and assessments, see

http://www.bbk.ac.uk/mybirkbeck/get-ahead-stay-ahead/academic-support

and guidelines on plagiarism
http://www.bbk.ac.uk/mybirkbeck/get-ahead-stay-ahead/academic-support/plagiarism

and
http://www.bbk.ac.uk/mybirkbeck/services/administration/assessment/offences/plagiarism
6 Disability Support Services

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 Colleges Disability Office.

The Disability Office

The College has a Disability Office located in room G12 on the ground floor of the Malet Street building. 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.

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.

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.

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.
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 in 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.

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.

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.

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.

**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.

### 7 Career Development

Most students are interested in developing their careers, either within their current field of work or in a completely new direction. The Careers Group, University of London, http://www.thecareersgroup.co.uk/, offers great expertise and experience in working with students and graduates of all ages and at all stages of career development. See also http://www.bbk.ac.uk/mybirkbeck/services/facilities/careers for more details.