

PROGRAMME SPECIFICATION

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|---|---|
| Name, title and level of final qualification(s) | BSc Computing (Level 6) |
| Name and title of any exit qualification(s) | Diploma of Higher Education Certificate of Higher Education Certificate of Continuing Education |
| Is the programme offered with a Foundation Year? | Yes |
| Awarding Body | University of London |
| Teaching Institution(s) | Birkbeck, University of London |
| Home Department/other teaching departments | Computer Science and Information Systems |
| Location of delivery | Central London |
| Language of delivery and assessment | English |
| Mode of study, length of study and normal start month | Full-time (3 years); Part-time (4 years); Full-time with Foundation Year (4 years) September |
| Professional, statutory or regulatory body | Not applicable |
| QAA subject benchmark group(s) Higher Education Credit Framework for England | Computing |
| UCAS code | I100, I102 |
| Birkbeck Course Code | UUBSCOMP_C (Full-time, 3 years) UUBFCOMP_C (Full-time with FY, 4 years) UBSCOMPG_C (Part-time, 4 years) |
| HECoS Code | 100366 |
| Start date of programme | Autumn 2012 |
| Date of programme approval | Summer 2011 |
| Date of last programme amendment approval | March 2023 |
| Valid for academic year and cohorts | 2024-25 |
| Programme Director | Tingting Han |
| Date of last revision to document | 30/03/2023 |

Admissions requirements

BSc Computing:

UCAS tariff: 96-128 points. The UCAS tariff score is applicable to students who have recently studied a qualification that has a UCAS tariff equivalence.

GCSES: Applicants are expected to have GCSE grade C or 4, or equivalent, in English and mathematics.

BSc Computing with Foundation Year:

UCAS tariff: 48 points. The UCAS tariff score is applicable to students who have recently studied a qualification that has a UCAS tariff equivalence.

GCSES: Applicants are expected to have GCSE grade C or 4, or equivalent, in English and mathematics.

We welcome applicants without traditional entry qualifications as we base decisions on our own assessment of qualifications, knowledge and previous work experience. We may waive formal entry requirements based on judgement of academic potential.

Applicants without traditional entry qualification who wish to enter year 1 are required to sit an admissions test that is composed of two elements: (i) a mathematics test and (ii) a test of English comprehension. A pass in the mathematics test ensures that the applicant has the required quantitative skill base to progress through the programme. A pass in the English comprehension test indicates that the applicant is competent to begin the programme.

Course aims

BSc Computing:

The BSc Computing aims to develop knowledge, technical skills and self-directed learning skills in computing, especially in areas affected by rapidly changing information technology. Final year students carry out a complex real-world computing project.

Modern computing and information systems skills often become obsolete as new technology is developed. Therefore, the programme strikes a balance between learning current skills, which are important in the marketplace, and emphasising the underlying theories, which last longer and which provide a sound basis for developing new skills, techniques and technologies, and even new theories. The social and organisational impacts of information technology are also included.

Students with a Foundation Degree in IT or an equivalent qualification such as an HND in Computing may register for year 3 of the four-year part-time programme and if successful, graduate with a BSc in Computing after two further years of part-time study.

BSc Computing with Foundation Year:

The BSc Computing with Foundation Year is designed for applicants who do not meet the entry requirements for direct entry to an undergraduate degree, who do not feel they are quite ready for an undergraduate degree, or who are returning to study after a significant break and need extra help and support with their studies.

The foundation year element of the Programme provides the core knowledge and skills required for the successful study of Computing at undergraduate level. It includes modules covering introductory, subject-specific areas such as IT, Computing and Programming. It also includes more transferable skills modules, covering approaches to study, academic writing and working in teams. Successful completion of the foundation year enables students to progress to the BSc element of the Programme.

The BSc element of the Programme aims to develop the knowledge, technical skills, and self-directed learning skills required by employers in the fast-evolving world of Computing and Information Technology. The primary focus is on developing strong programming and software engineering skills. Emphasis is also placed on exploring the socio, ethical and legal aspects of Computing. At the end of the BSc element of the Programme, students carry out a complex, real-world project.

Course structure

The programme consists of modules. The syllabus for each module consists of a closely related set of topics, as indicated by the title of the module. Each module has a level, which indicates the academic level of the module, and a value in credits. Most modules are taught over one term and have a value of 15 credits. Some modules are taught over two terms and have a value of 30 credits. The final year project has a value of 30 credits. In order to graduate, it is necessary to accumulate 360 credits. Under normal circumstances, the maximum number of credits that can be accumulated in an academic year is 90 credits for the four-year part-time programme, 60 credits for the six-year decelerated part-time programme, and 120 credits for the three-year full-time programme.

Four-year part-time programme: all of the modules in years 1, 2 and 3 are compulsory. There is a mix of compulsory and optional modules in years 4. Modules in year 1 have level 4. Modules in year 2 are level 4 or 5, while modules in years 3 and 4 are either level 5 or level 6. In order to graduate, it is necessary to accumulate at least 120 credits at level 6.

An optional module can be chosen only if its prerequisites are satisfied.

Three-year full-time programme: all of the modules in years 1 and 2 are compulsory. There is a mix of compulsory and optional modules in year 3. Modules in year 1 are level 4. Modules in years 2 are level 5 and those in year 3 are level 6. In order to graduate, it is necessary to accumulate at least 120 credits at level 6.

An optional module can be taken only if its prerequisites are satisfied.

BSc Computing with Foundation Year:

The BSc Computing with Foundation Year provides a perfect route to study for those who do not meet the entry requirements for direct entry to an undergraduate Computing degree, who do not feel they are quite ready for an undergraduate degree, or who are returning to study after a significant break and need extra help and support.

The foundation year helps build confidence and provide skills to study successfully at undergraduate level. It also provides students with a strong foundation in the main subject area of Computing. Upon successful completion of the Foundation Year, students automatically progress to our three-year, full-time evening study BSc Computing. The BSc focuses on key software development skills, including algorithms and data structures, systems analysis and design, programming, software testing and project management.

| Level | Module Code | Module Title | Credit | Comp Core/ Option | Likely teaching term(s) |
|----------------------------|-------------|---|--------|-------------------|-------------------------|
| Full-time - 3 years | | | | | |
| Year 1 | | | | | |
| 4 | COIY040H4 | Mathematics for Computing | 15 | Compulsory | 1 |
| 4 | BUCI006H4 | Problem Solving for Programming | 15 | Compulsory | 1 |
| 4 | COIY016H4 | Systems Analysis and Design I | 15 | Compulsory | 2 |
| 4 | BUCI007H4 | Introduction to Programming | 15 | Compulsory | 2 |
| 4 | BUCI008H4 | Introduction to Computer Systems | 15 | Compulsory | 2 |
| 4 | COIY068H4 | Introduction to Database Technology | 15 | Compulsory | 3 |
| 4 | SSCS004H4 | Introduction to Web Authoring | 15 | Compulsory | 3 |
| 4 | BUCI087H4 | Software and Programming I | 15 | Compulsory | 3 |
| Year 2 | | | | | |
| 5 | BUCI088H5 | Software and Programming II | 15 | Compulsory | 1 |
| 5 | BUCI030H5 | Data Structures and Algorithms | 15 | Compulsory | 1 |
| 5 | BUCI066H5 | Software Engineering I | 15 | Compulsory | 1 |
| 5 | BUCI055H5 | Computer Organisation and System Software | 15 | Compulsory | 2 |
| 5 | COIY019H5 | Systems Analysis and Design II | 15 | Compulsory | 2 |
| 5 | BUCI036H5 | Computer Networking | 15 | Compulsory | 2 |
| 5 | BUCI086H5 | Professional Issues in Computing | 15 | Compulsory | 3 |
| 5 | SSCS025H5 | Web Programming using PHP | 15 | Compulsory | 3 |
| Year 3 | | | | | |
| 6 | BUCI056H6 | Software and Programming III | 15 | Compulsory | 1 |
| 6 | COIY045H6 | Information Security | 15 | Compulsory | 1 |
| 6 | BUCI067H6 | Software Engineering II | 15 | Compulsory | 2 |
| 6 | COIY028H6 | Database Management | 15 | Compulsory | 2 |
| 6 | BUCI027S6 | BSc Computing Project | 30 | Compulsory | 1-3 |
| 6 | | Option 1 | 15 | Optional | |
| 6 | | Option 2 | 15 | Optional | |
| Part-time – 4 years | | | | | |
| Year 1 | | | | | |
| 4 | COIY040H4 | Mathematics for Computing | 15 | Compulsory | 1 |
| 4 | BUCI006H4 | Problem Solving for Programming | 15 | Compulsory | 1 |
| 4 | COIY016H4 | Systems Analysis and Design I | 15 | Compulsory | 2 |
| 4 | BUCI007H4 | Introduction to Programming | 15 | Compulsory | 2 |
| 4 | COIY068H4 | Introduction to Database Technology | 15 | Compulsory | 3 |
| 4 | BUCI087H4 | Software and Programming I | 15 | Compulsory | 3 |
| Year 2 | | | | | |
| 5 | BUCI088H5 | Software and Programming II | 15 | Compulsory | 1 |
| 5 | BUCI066H5 | Software Engineering I | 15 | Compulsory | 1 |

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|---|-----------|---|----|------------|-----|
| 5 | COIY019H5 | Systems Analysis and Design II | 15 | Compulsory | 2 |
| 4 | BUCI008H4 | Introduction to Computer Systems | 15 | Compulsory | 2 |
| 4 | SSCS004H4 | Introduction to Web Authoring | 15 | Compulsory | 3 |
| 5 | SSCS025H5 | Web Programming using PHP | 15 | Compulsory | 3 |
| Year 3 | | | | | |
| 6 | BUCI056H6 | Software and Programming III | 15 | Compulsory | 1 |
| 5 | BUCI030H5 | Data Structures and Algorithms | 15 | Compulsory | 1 |
| 6 | COIY028H6 | Database Management | 15 | Compulsory | 2 |
| 5 | BUCI055H5 | Computer Organisation and System Software | 15 | Compulsory | 2 |
| 5 | BUCI036H5 | Computer Networking | 15 | Compulsory | 2 |
| 5 | BUCI086H5 | Professional Issues in Computing | 15 | Compulsory | 3 |
| Year 4 | | | | | |
| 6 | BUCI027S6 | BSc Computing Project | 30 | Compulsory | 1-3 |
| 6 | COIY045H6 | Information Security | 15 | Compulsory | 1 |
| 6 | BUCI067H6 | Software Engineering II | 15 | Compulsory | 2 |
| 6 | | Option 1 | 15 | Optional | |
| 6 | | Option 2 | 15 | Optional | |
| Full-time with Foundation Year – 4 years | | | | | |
| Foundation Year (0) | | | | | |
| 3 | CASE002S3 | Fundamentals of Study: Learning through the Global City | 30 | Core | 1 |
| 3 | BUCI075H3 | Teamwork | 15 | Core | 1 |
| 3 | BUMN166H3 | Mathematics for Business | 15 | Core | 2 |
| 3 | BUCI089H3 | Introduction to Information Technology | 15 | Core | 2 |
| 3 | BUCI085H3 | Programming Logic | 15 | Core | 2 |
| 3 | BUCI084H3 | IT Tools and Techniques | 15 | Core | 3 |
| 3 | BUCI076H3 | Computing Foundation Year Project | 15 | Core | 3 |
| Year 1 | | | | | |
| 4 | COIY040H4 | Mathematics for Computing | 15 | Compulsory | 1 |
| 4 | BUCI006H4 | Problem Solving for Programming | 15 | Compulsory | 1 |
| 4 | COIY016H4 | Systems Analysis and Design I | 15 | Compulsory | 2 |
| 4 | BUCI007H4 | Introduction to Programming | 15 | Compulsory | 2 |
| 4 | BUCI008H4 | Introduction to Computer Systems | 15 | Compulsory | 2 |
| 4 | COIY068H4 | Introduction to Database Technology | 15 | Compulsory | 3 |
| 4 | SSCS004H4 | Introduction to Web Authoring | 15 | Compulsory | 3 |
| 4 | BUCI087H4 | Software and Programming I | 15 | Compulsory | 3 |
| Year 2 | | | | | |
| 5 | BUCI088H5 | Software and Programming II | 15 | Compulsory | 1 |
| 5 | BUCI030H5 | Data Structures and Algorithms | 15 | Compulsory | 1 |
| 5 | BUCI066H5 | Software Engineering I | 15 | Compulsory | 1 |
| 5 | BUCI055H5 | Computer Organisation and System Software | 15 | Compulsory | 2 |

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|----------------|-----------|--|----|------------|-----|
| 5 | COIY019H5 | Systems Analysis and Design II | 15 | Compulsory | 2 |
| 5 | BUCI036H5 | Computer Networking | 15 | Compulsory | 2 |
| 5 | BUCI086H5 | Professional Issues in Computing | 15 | Compulsory | 3 |
| 5 | SSCS025H5 | Web Programming using PHP | 15 | Compulsory | 3 |
| Year 3 | | | | | |
| 6 | BUCI056H6 | Software and Programming III | 15 | Compulsory | 1 |
| 6 | COIY045H6 | Information Security | 15 | Compulsory | 1 |
| 6 | BUCI067H6 | Software Engineering II | 15 | Compulsory | 2 |
| 6 | COIY028H6 | Database Management | 15 | Compulsory | 2 |
| 6 | BUCI027S6 | BSc Computing Project | 30 | Compulsory | 1-3 |
| 6 | | Option 1 | 15 | Optional | |
| 6 | | Option 2 | 15 | Optional | |
| Options | | | | | |
| 6 | BUCI028H6 | Cloud Computing Concepts | 15 | Optional | 1 |
| 6 | BUCI045H6 | Introduction to Data Analytics using R | 15 | Optional | 2 |
| 6 | BUCI046H6 | Mobile Computing | 15 | Optional | 3 |
| 6 | BUCI034H6 | Artificial Intelligence and Machine Learning | 15 | Optional | 3 |

Core: Module must be taken and passed by student

Compulsory: Module must be taken but can be considered for compensated credit (see CAS regulations paragraph 24)

Option: Student can choose to take this module

How you will learn

Foundation Year:

Instruction will be predominantly via lectures. Lectures will be augmented with group and individual tutorial work and practical lab work. Instructional material will also be made available online. Assessment will be through a mix of exam, coursework (test, essay, practical task, presentation) and project work.

BSc Degree Lecturing

Lecturing is a major method for knowledge transfer. However, most modules mix other activities with lectures on any particular evening. Mature students can be highly interactive and staff are encouraged to obtain student feedback about areas that may need deeper attention.

Group Tutorials

Several modules mix lectures with work in small groups, in which higher levels of student interaction are possible. This works particularly well with complicated topics.

For the majority of the programming modules we adopt a 'flipped classroom' approach, where you watch short videos and perform appropriate reading before the class, making this an active rather than passive learning experience.

How we will assess you

The course will use a variety of assessment methods. Assessment is used to enhance your learning rather than simply to test it. For most of the modules associated with this course, your assessment will be through the following types of assessment.

Written Exercises (Essays):

Feedback from written essays encourages students to develop appropriate formal and precise writing habits. It leads students to express themselves in a structured manner in writing.

Laboratory Based Exercises:

Computing laboratory exercises are used to give the students hands-on experience in developing information systems artifacts such as systems analysis and design models and computer programs. Some of these exercises are assessed.

Group Exercises:

Group exercises are used in certain modules to improve students' social interactions and their ability to work in teams.

Presentations:

Presentations are a powerful learning experience. Students giving presentations develop their powers of information discovery, equip themselves with a deep understanding of the topics to be presented and transfer some of their knowledge to their peers who at the same time acquire skills in verbal academic discourse.

Final Year Project:

Projects require the students to take an integrative approach to a major piece of work. They are required to set a boundary for the work, formulate their aims and objectives, gather information, analyse information, reflect on their work and produce a substantial report.

Learning outcomes (what you can expect to achieve)

'Learning outcomes' indicate what you should be able to know or do at the end of your course. Providing them helps you to understand what your teachers will expect and also the learning requirements upon which you will be assessed.

At the end of this course, you should be able to:

Foundation year specific:

1. To provide students with the subject specific skills and knowledge required to study Computing at undergraduate level.
2. To provide students with the generic skills and knowledge required to study computing at undergraduate level.

BSc Programme as a whole:

Subject Specific

3. Computer literacy
4. Ability to discuss various forms and levels of information
5. Structured techniques for information systems analysis and design
6. Number systems, computer architectures, data structures, algorithms, software engineering fundamentals
7. Web programming
8. Knowledge of the technology underlying web-based commercial activity
9. Knowledge of the current social and organisational issues surrounding the deployment of information technology.

10. Understanding of database concepts and in particular relational database technology.
An understanding of the systems and context of IS projects.
11. Knowledge of computer networking
12. Knowledge of information security

Intellectual

1. Critically evaluate arguments and evidence.
2. Construct and present theoretical and empirical arguments.
3. The ability to write and present substantial reports arguing a case.

Practical

1. Make informed decisions.
2. Develop models within which problems can be solved, for example database models.
Plan, implement and test solutions.
3. Code an algorithm into a programming language; design, test and evaluate programs.
4. Write a substantial report.
5. Search for information.
6. Argue a case.

Personal and Social

1. Work under pressure.
2. Communicate using appropriate interpersonal skills.
3. Work in teams.
4. Take responsibility for own learning and time management.

Careers and further study

You will find computing graduates in the following kinds of roles: programmer, software engineer, database administrator, systems administrator, testing and software quality engineer.

Birkbeck offers a range of careers support to its students. You can find out more on [the careers pages of our website](#).

Academic regulations and course management

Birkbeck's academic regulations are contained in its [Common Award Scheme Regulations](#) and Policies published by year of application on the Birkbeck website.

You will have access to a course handbook on Moodle and this will outline how your course is managed, including who to contact if you have any questions about your module or course.

Support for your study

Your learning at Birkbeck is supported by your teaching team and other resources and people in the College there to help you with your study. Birkbeck uses a virtual learning environment called Moodle and each course has a dedicated Moodle page and there are further Moodle sites for each of your modules. This will include your course handbook.

Birkbeck will introduce you to the Library and IT support, how to access materials online, including using Moodle, and provide you with an orientation which includes an online Moodle module to guide you through all of the support available. You will also be allocated a personal

tutor and provided with information about learning support offered within your School and by the College.

Please check our website for more information about student support services. This covers the whole of your time as a student with us including learning support and support for your wellbeing.

Quality and standards at Birkbeck

Birkbeck's courses are subject to our quality assurance procedures. This means that new courses must follow our design principles and meet the requirements of our academic regulations. Each new course or module is subject to a course approval process where the proposal is scrutinised by subject specialists, quality professionals and external representatives to ensure that it will offer an excellent student experience and meet the expectation of regulatory and other professional bodies.

You will be invited to participate in an online survey for each module you take. We take these surveys seriously and they are considered by the course team to develop both modules and the overall courses. Please take the time to complete any surveys you are sent as a student.

We conduct an annual process of reviewing our portfolio of courses which analyses student achievement, equality data and includes an action plan for each department to identify ongoing enhancements to our education, including changes made as a result of student feedback.

Our periodic review process is a regular check (usually every four years) on the courses by department with a specialist team including students.

Each course will have an external examiner associated with it who produces an annual report and any recommendations. Students can read the most recent external examiner reports on the course Moodle pages. Our courses are all subject to Birkbeck Baseline Standards for our Moodle module information. This supports the accessibility of our education including expectations of what information is provided online for students.

The information in this programme specification has been approved by the College's Academic Board and every effort has been made to ensure the accuracy of the information it contains.

Programme specifications are reviewed periodically. If any changes are made to courses, including core and/or compulsory modules, the relevant department is required to provide a revised programme specification. Students will be notified of any changes via Moodle.

Further information about specifications and an archive of programme specifications for the College's courses is [available online](#).

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