Year of entry: 2022/23

# Programme Specification

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|---|---|---|---|---|---|---|---|---|
| 1 | **Awarding body** | University of London | | | | | | |
| 2 | **Teaching Institution** | **Birkbeck College** | | | | | | |
| 3 | **Programme Title(s)** | **BSc Mathematics with Economics** | | | | | | |
| 4 | **Programme Code(s)** | UUBSMWEC_C (3 years full-time)<br>UBSMTWEC_C (4 years part-time) | | | | | | |
| 5 | **UCAS code** | G1L1 | | | | | | |
| 6 | **Home Department** | Economics, Mathematics and Statistics | | | | | | |
| 7 | **Exit Award(s)** | Certificate of Higher Education<br>Diploma of Higher Education | | | | | | |
| 8 | **Duration of Study** (number of years) | 3 years full-time/4 years part time | | | | | | |
| 9 | **Mode of Study** | FT | ✓ | PT | ✓ | DL | | |
| 10 | **Level of Award (FHEQ)** | 6 | | | | | | |
| 11 | **Other teaching depts or institution** | N/A | | | | | | |
| 12 | **Professional, Statutory Regulatory Body(PSRB) details** | N/A | | | | | | |
| 13 | **QAA Benchmark Statement** | Mathematics, Statistics and Operational Research | | | | | | |

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| 14 | **Programme Rationale & Aims** |
| | The BSc Mathematics with Economics aims to provide a broad education in and some of the main concepts and methods of economics. The programme concentrates on the methods and modelling techniques of mathematics, but also provides the theoretical background for these ideas. Students develop knowledge of a range of mathematical skills together with an understanding of economics.<br><br>In line with the College's mission to make high quality education available to students who are not able for whatever reason to study during the day, the programme is delivered by evening, face-to-face study and is offered both in part-time and full-time modes. |

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| 15 | **Entry Criteria** |
| | The normal entrance requirement is a UCAS tariff of at least 112 points, including a grade B, or higher, in A-level mathematics, or the equivalent.<br><br>For students who have not recently studied for qualification: A-level mathematics, or the equivalent, is desirable. Students without such a qualification are required to pass an entrance test.<br><br>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. |

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| | Students can also study this programme after successful completion of the foundation year of the BSc Mathematics with Foundation Year at Birkbeck, by transferring onto the BSc Mathematics with Economics with Foundation Year route. |

| 16 | **Learning Outcomes** |
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| | ***On successful completion of this programme a student will have attained the following learning outcomes.*** |

**Subject Specific**

LO1 Knowledge and understanding of, and the ability to use, mathematical and/or statistical techniques.

LO2 Knowledge and understanding of a range of results in mathematics and statistics.

LO3 Appreciation of the need for proof in mathematics, and the ability to follow and construct mathematical arguments.

LO4 Awareness of the use of mathematics and/or statistics to model problems in the natural and social sciences, and the ability to formulate such problems using appropriate notation.

LO5 Understand the importance of assumptions and have an awareness of where they are used and the possible consequences of their violation.

LO6 Ability to present, analyse and interpret data.

LO7 A deeper knowledge of some particular areas of mathematics.

LO8 Understanding of the basic principles of economics.

LO9 Understand and use the quantitative techniques relevant to economics.

LO10 Develop technical skills in economics.

LO11 Develop knowledge and understanding of the theory and practice of economics.

LO12 A deeper knowledge of some particular areas of economics.

**Intellectual**

LO13 Problem-solving skills, including the ability to assess problems logically and to approach them analytically.

LO14 Ability to comprehend conceptual and abstract material.

LO15 Highly developed quantitative skills.

**Practical**

LO16 Ability to use appropriate software packages.

LO17 Ability to transfer knowledge and expertise from one context to another.

**Personal and Social**

LO18 Ability to learn independently using a variety of media.

LO19 Ability to work independently with patience and persistence.

LO20 Time-management and organizational skills.

LO23 Good communication skills, including the ability to write coherently.

| 17 | **Learning, teaching and assessment methods** |
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| | Most teaching sessions are lectures or occasionally computing sessions. Lectures present both theory and worked examples. Computing sessions use either spreadsheets or a modern statistical or mathematical software package, and enable students to learn about these packages and allow them to develop a greater understanding of the course material. The computing sessions are usually self-paced and informal.<br><br>Detailed notes, problems and worked solutions are provided to accompany most lectures on each module. This facilitates the independent study necessary to understand and assimilate the material. Regular coursework and a variety of assessment methods are also designed to be formative and promote learning.<br><br>Individual tutorials are provided as required and are an integral part of the teaching provision. Students may also consult staff by email and telephone.<br><br>The methods of assessment used are:<br><br>• Unseen examinations.<br>• Assessed assignments.<br>• Essays.<br><br>For most modules 80% of the assessment comes from unseen examinations in the Summer Term. This allows time for students to assimilate the material and develop a thorough understanding of the course curriculum. The 20% contribution from coursework enables students to get practice in tackling and solving problems independently, without the time pressure of examinations, and gives staff an opportunity to give relevant feedback.<br><br>The range of assessments, and the type of questions and problems set within examinations and assignments are structured to balance theory and practice, to address the individual learning outcomes and to discriminate between different levels of achievement**.** However the assessment strategy recognizes that students may exhibit very different aptitudes and abilities in different aspects of the course and in different forms of assessment. This is particularly relevant to Birkbeck students who vary considerably in terms of academic background, prior work experience, current career and future career plans. The assessment strategy is therefore designed to: (i) ensure a good coverage of the curriculum and address the range of learning outcomes, (ii) perform an on-going formative function via the theoretical and practical assignments associated with all course modules; (iii) give all students the opportunity to demonstrate their strengths and show what they can do well.<br><br>Both the external and the second internal examiner normally scrutinize all HE level 5 and 6 examination papers before they are finalized. All examination papers are double marked. Coursework is marked by the first examiner and moderated by the second internal examiner. All marks are moderated by the External Examiner, who is invited to comment on the suitability of the assessment methods, criteria and procedures. These comments influence any changes that are recommended at the BSc review meeting. |

| 18 | **Programme Description** |
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| | The first two years of the programme consist mainly of core and compulsory modules. These modules cover the body of knowledge that every student is expected to know as a key part of university level study in this area.<br><br>At level 5 there are 60 credits of compulsory modules, and 60 credits of options, while at level 6 there are 90 credits of options, allowing students to tailor their programme to suit their interests and strengths.<br><br>(Note: Students who successfully complete the foundation year of the BSc Mathematics with Foundation Year, can transfer onto the BSc Mathematics with Economics with Foundation Year route to follow the programme shown below.) |

| 19 | **Programme Structure** |
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***Full-Time programme***

***Year 1***

| Level | Module Code | Module Title | Credits | Status* |
|---|---|---|---|---|
| 4 | EMMS096S4 | Calculus 1 | 30 | Core |
| 4 | EMMS097S4 | Algebra 1 | 30 | Core |
| 4 | BUEM096S4 | Numbers, Proofs and Counting | 30 | Compulsory |
| 4 | EMEC013S4 | Introduction to Economics | 30 | Core |

***Year 2***

| Level | Module Code | Module Title | Credits | Status* |
|---|---|---|---|---|
| 5 | BUEM001S5 | Calculus 2 | 30 | Compulsory |
| 5 | BUEM107S5 | Macroeconomic Theory and Policy | 30 | Compulsory |
| 5 | | 30 credits level 5 from the indicative option list below | 30 | Option |
| 5/6 | | One level 5 or 6 *mathematics* option from indicative list below (they can do a level 6 option at the Programme director's discretion, to increase choice, and if they do this, then they do 30 credits at level 5 in Year 3 to compensate) | 30 | Option |

***Year 3***

| Level | Module Code | Module Title | Credits | *Status |
|---|---|---|---|---|
| 6 | BUEM070S6 | Microeconomics | 30 | comp |
| 6/5 | | One level 6/5 mathematics option from indicative list below (they do a level 5 option only if they did a level 6 in Year 2) | 30 | option |
| 6 | | 30 credits at level 6 from the indicative list below | 30 | option |
| 6 | | 30 credits at level 6 from the indicative list below | 30 | option |

Over the programme students must do 120 credits at level 6, including at least 60 credits of level 6 mathematics options.

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| ***Part-Time programme*** | | | | |
| ***Year 1*** | | | | |
| **Level** | **Module Code** | **Module Title** | **Credits** | **Status*** |
| 4 | EMMS096S4 | Calculus 1 | 30 | Core |
| 4 | EMMS097S4 | Algebra 1 | 30 | Core |
| 4 | EMEC013S4 | Introduction to Economics | 30 | Core |
| ***Year 2*** | | | | |
| **Level** | **Module Code** | **Module Title** | **Credits** | **Status*** |
| 4 | BUEM096S4 | Numbers, Proofs and Counting | 30 | Compulsory |
| 5 | BUEM001S5 | Calculus 2 | 30 | Compulsory |
| 5 | BUEM107S5 | Macroeconomic Theory and Policy | 30 | Compulsory |
| ***Year 3*** | | | | |
| **Level** | **Module Code** | **Module Title** | **Credits** | **Status*** |
| 5 | | 30 credits level 5 from the indicative option list below | 30 | option |
| 5 | | 30 credits level 5 from the indicative option list below | 30 | Option |
| 6 | | **EITHER** 30 credits level 6 from the indicative option list below **OR** | 30 | option |
| 6 | BUEM070S6 | Microeconomics (must be done in Year 3 or 4) | 30 | Compulsory |
| ***Year 4*** | | | | |
| 6 | | 30 credits level 6 from the indicative option list below | 30 | option |
| 6 | | 30 credits level 6 from the indicative option list below | 30 | option |
| 6 | | 30 credits level 6 from the indicative option list below | 30 | option |
| **One of these options will be replaced by Microeconomics (BUEM070S6) if not taken in Year 3** | | | | |
| Over the programme students must do 120 credits at level 6, including **at least 60 credits** of level 6 mathematics options. | | | | |
| ***Optional modules (indicative list)*** | | | | |
| 5 | EMMS098S5 | Probability and Statistics | 30 | option |
| 5 | BUEM101S5 | Algebra 2 | 30 | option |
| 5 | BUEM100S5 | Number Theory and Cryptography | 30 | option |
| 6 | BUEM102S6 | Algebra 3 | 30 | option |
| 6 | BUEM103S6 | Analysis | 30 | option |
| 6 | BUEM104S6 | Ordinary Differential Equations | 30 | option |
| 6 | BUEM105S6 | Finite Mathematics | 30 | option |
| 6 | BUEM106S6 | Approximation: Theory and Methods | 30 | option |
| 6 | BUEM003S6 | Statistics: Theory and Practice | 30 | option |
| 6 | options | Any Economics option module for which they have completed the level 4 and 5 prerequisites | 30 | option |

**Status***

*CORE – Module must be taken and passed by student; COMPULSORY – Module must be taken, mark can be reviewed at sub-exam board; OPTIONAL – Student can choose to take this module*

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| *20* | **Programme Director** | Dr Andrew Bowler |
| *21* | **Start Date** ***(term/year)*** | Autumn 2018 |
| *22* | **Date approved by TQEC** | Summer 2017 |
| *23* | **Date approved by Academic Board** | Summer 2017 |
| *24* | **Date(s) updated/amended** | February 2019 |