

Royal Holloway, University of London
Course specification for an undergraduate award
BSC MATHEMATICS AND PHILOSOPHY (GV15)

Section 1 – Introduction to your course

This course specification is a formal document, which provides a summary of the main features of your course and the learning outcomes that you might reasonably be expected to achieve and demonstrate if you take full advantage of the learning opportunities that are provided. Further information is contained in the University prospectus, and in various handbooks, all of which you will be able to access online. Alternatively, further information on the University's academic regulations and policies can be found [here](#). Further information on the University's Admissions Policy can be found [here](#).

Your degree course in BSc Mathematics and Philosophy provides progressive structures in which you will be able to gain ever-wider knowledge and understanding, and appropriate skills. The philosophy component of your course contains a combination of mandatory modules to introduce you to historical periods, to the principle literary genres, and to contemporary critical and theoretical approaches, with a range of stage two and three specialist options. In stage two and three, you are encouraged to develop your own interests through informed choice among specialist options. In stage three, you are also required to write long essays. In stage one, the Department of Mathematics seek to provide a broadly based introduction to mathematics, which will develop manipulative skills, understanding of the key concepts and the ability to construct logical arguments. In stage two, you will take modules which continue your study of abstract pure mathematics and its applications. In stage three, you take modules to the value of 60 credits and are advised on appropriate combinations and pathways depending on your interests, stage one and two options, and possible future career paths. Your course aims to equip you with a range of personal attributes relevant to the world beyond higher education (HE), allowing you to engage in lifelong learning, to consider ethics and values, and to contribute to the wider community. Your degree courses at Royal Holloway, University of London, will be delivered over three years, each of which normally involves modules to the value of 120 credits.

For joint and combined honours courses, please refer to the course specification for your secondary department's corresponding single honours course for further information on educational aims, and learning outcomes.

The following is a brief description for some of the most important terminology for understanding the content of this document:

Degree course – May also be referred to as 'degree programme' or simply 'programme', these terms refer to the qualification you will be awarded upon successful completion of your studies.

Module – May also be referred to as 'course', this refers to the individual units you will study each year to complete your degree course. Undergraduate degrees at Royal Holloway comprise a combination of modules in multiples of 15 credits to the value of 120 credits per year. On some degree courses a certain number of optional modules must be passed for a particular degree title.

Section 2 – Course details			
Date of specification update	April 2024	Location of study	Egham Campus
Course award and title	BSc Mathematics and Philosophy	Level of study	Undergraduate
Course code	3512	UCAS code	GV15
Year of entry	2024/25		
Awarding body	Royal Holloway, University of London		
Department or school	Law and Social Science	Other departments or schools involved in teaching the course	Mathematics
Mode(s) of attendance	Full-time	Duration of the course	3 years
Accrediting Professional, Statutory or Regulatory Body requirement(s)	N/A		
Link to Coursefinder for further information:	https://www.royalholloway.ac.uk/studying-here/	For queries on admissions:	https://royalholloway.ac.uk/applicationquery

Section 3 – Degree course structure

3.1 Mandatory module information
 The following table summarises the mandatory modules which students must take in each year of study

Year	Module code	Module title	Credits	FHEQ level	Module status (Mandatory Condonable MC or Mandatory Non-Condonable MNC)
1	PY1002	Introduction to Modern Philosophy	15	4	MC
1	PY1101	Problems of Knowledge	15	4	MNC
1	PY1202	Philosophical Methods	15	4	MC
1	PY1103	Introduction to Formal Logic	15	4	MC
1	MT1710	Calculus I	15	4	MC
1	MT1720	Calculus II	15	4	MC
1	MT1810	Introduction to Pure Mathematics	15	4	MC
1	MT1820	Linear Algebra I	15	4	MC
2	MT2320	Probability Theory	15	5	MC
2	MT2800	Linear Algebra II	15	5	MC

This table sets out the most important information for the mandatory modules on your degree course. These modules are central to achieving your learning outcomes, so they are compulsory, and all students on your degree course will be required to take them. You will be automatically registered for these modules each year. Mandatory modules fall into two categories: 'condonable' or 'non-condonable'.

In the case of mandatory 'non-condonable' (MNC) modules, you must pass the module before you can proceed to the next year of your course, or to successfully graduate with a particular degree title. In the case of mandatory 'condonable' (MC) modules, these must be taken but you can still progress or graduate even if you do not pass them. Please note that although Royal Holloway will keep changes to a minimum, changes to your degree course may be made where reasonable and necessary due to unexpected events. For example: where requirements of relevant Professional, Statutory or Regulatory Bodies have changed and course requirements must change accordingly, or where changes are deemed necessary on the basis of student feedback and/or the advice of external advisors, to enhance academic provision.

3.2 Optional modules

In addition to mandatory modules, there will be a number of optional modules available during the course of your degree. Although Royal Holloway will keep changes to a minimum, new options may be offered or existing ones may be withdrawn. For example, where reasonable and necessary due to unexpected events, where requirements of relevant Professional, Statutory or Regulatory Bodies (PSRBs) have changed and course requirements must change accordingly, or where changes are deemed necessary on the basis of student feedback and/or the advice of External Advisors, to enhance academic provision. There may be additional requirements around option selection; please contact the Department for further information.

Year 2

Students must take options to the value of 30 credits from Stage 2 modules offered by the Department of **Mathematics**, and options to the value of 60 credits from Stage 2 modules offered by the Department of **Philosophy**. For **Philosophy**, students must choose **at least** 30 credits from the following options basket:

PY2001 Kant (15 credits)

PY2002 Mind and World (15 credits)

PY2202 Empiricism and Rationalism (15 credits)

PY2900 Race, Gender and Queer Philosophy (15 credits)

Year 3

Students must choose 60 credits of options from the list of **Stage 3** modules offered by the Department of **Mathematics** and 60 credits of options from the list of stage 3 modules offered by the Department of **Philosophy**

Section 4 - Progressing through each year of your degree course

For further information on the progression and award requirements for your degree, please refer to Royal Holloway's [Academic Regulations](#).

Progression throughout the year/s is monitored through performance in summative or formative coursework assignments. Please note that if you hold a Student Visa and you choose to leave (or are required to leave because of non-progression) or complete early (before the course end date stated on your CAS), then this will be reported to UKVI.

All first year students on single, joint or combined honours courses offered all or in part by the School of Humanities, School of Performing and Digital Arts, or department of Politics, International Relations and Philosophy are required to pass a Moodle-based writing skills quiz in order to progress into the second year of study. The pass mark for the test is 60%.

Students may attempt the quiz as often as they wish with no penalties or capping. Students who meet the requirements for progression as stipulated in the [Academic Taught Regulations](#) but fail to pass the Moodle-based Academic Integrity module will not be permitted to progress into their second year of academic study.

Section 5 – Educational aims of the course

The aims of this course are:

- to expose you to a broad and coherent philosophical curriculum that draws on both the European and Anglo-American traditions;
- to present an appreciation of philosophy that stresses its pertinence to other areas of intellectual inquiry;
- to provide you with sufficient choice to allow you to pursue your philosophical interests where possible;
- to engender a range of subject-specific and general intellectual skills through a variety of learning activities geared to the study and practice of philosophy;
- to learn technical manipulative skills, the ability to read and write in the compressed language of mathematics, and the ability to distil a problem into a mathematical description of its essential detail;
- to gain an appreciation of, and interest in, the logical structure of mathematics, and its use as an analytical and predictive tool in applications;
- to provide a curriculum that draws on recent staff scholarship and a broader research culture of intellectual enquiry and debate

Section 6 - Course learning outcomes			
In general terms, the courses provide opportunities for students to develop and demonstrate the following learning outcomes. (Categories – Knowledge and understanding (K), Skills and other attributes (S), and Transferable skills (*))			
Course learning outcome	Level 4	Level 5	Level 6
1: Gain knowledge and understanding of mathematical concepts, methods and structures, and of the core questions, theories and specialist terminology in philosophy.	1.4.1: Develop knowledge and understanding of mathematical methods. 1.4.2: Gain knowledge and understanding of mathematical concepts such as number and function. 1.4.3: Recall information about philosophical theories and understand the relevant terminology.	1.5.1: Embed knowledge and understanding of mathematical methods. 1.5.2: Discuss core philosophical questions and theories.	1.6.1: Extend knowledge and understanding of mathematical methods. 1.6.2: Explain the key issues in philosophical debates and theories.
2: Grow an understanding of results from a range of areas of mathematics, and critically evaluate philosophical ideas from both historical and contemporary sources.	2.4.1: Develop the ability to take theoretical knowledge gained in one area of mathematics and apply it elsewhere. 2.4.2.: Begin to appreciate both the strengths and weakness of philosophical ideas.	2.5.1: Develop knowledge and understanding of some results from a range of major areas of mathematics, statistics or operational research. 2.5.2.: Recognize strengths and weakness of philosophical ideas.	2.6.1: Develop knowledge and understanding of at least one major area of applications in which the mathematics is used in a serious manner and is essential for proper understanding. 2.6.3.: Explain fully the strengths and weakness of philosophical ideas.
3: Develop skills of numeracy, manipulation of mathematical expressions, and the analytic approach to solving problems.	3.4.1: Apply a high level of numeracy. 3.4.2: Develop the ability to manipulate and analyse complex mathematical expressions accurately.	3.5.1: Grow the ability to manipulate and analyse complex mathematical expressions accurately. 3.5.2: Develop a general ethos of numeracy and of analytical approaches to problem solving.	3.6.1: Develop the ability to provide accurate analysis of a situation, the factors involved and possible approaches to solution.
4. Identify and analyse arguments made in a variety of contexts, both theoretical and practical.	4.4.1: Recognize an argument and understand the difference between good and bad arguments.	4.5.1.: Assess the quality of arguments as used in a wide range of contexts.	4.6.1.: Deploy arguments effectively and explain why poor arguments are ineffective.
5: Develop the ability to argue logically, and to understand the role of formal proofs.	5.4.1: Develop the ability to make a sequence of logical steps and reflect on the result.	5.5.1: Develop the ability to understand the role of logical mathematical argument and deductive reasoning, including formal proof.	5.6.1: Embed the ability to understand the role of logical mathematical argument and deductive reasoning, including formal proof.

<p>6: Develop the ability to formulate problems mathematically, to solve the resulting mathematical problems, and to interpret the results.</p>	<p>6.4.1: Begin to develop the ability to formulate problems in mathematical or statistical form using appropriate notation.</p> <p>6.4.2: Begin to develop the ability to solve equations or inequalities arising from a problem analytically or numerically, and to interpret the results.</p>	<p>6.5.1: Develop the ability to formulate problems in mathematical or statistical form using appropriate notation.</p> <p>6.5.2: Develop the ability to solve equations or inequalities arising from a problem analytically or numerically, and to interpret the results.</p>	<p>6.6.1: Grow the ability to formulate problems in mathematical or statistical form using appropriate notation.</p> <p>6.6.2: Grow the ability to solve equations or inequalities arising from a problem analytically or numerically, and to interpret the results.</p>
<p>7: Interpret complex philosophical texts, paying attention to different modes of argumentation and the variety of literary forms that philosophical writing can take.</p>	<p>7.4.1.: Appreciate the variety of literary forms in which philosophy has and can be written.</p>	<p>7.5.1.: Understand the different criteria used to assess the claims made in different types of philosophical text.</p>	<p>7.6.1.: Critically assess a variety of different types of philosophical text and understand the strengths and weakness of different genres of writing.</p>
<p>8: Gain the ability to work as a team, and to communicate mathematical results and philosophical ideas clearly and precisely to others.</p>	<p>8.4.1: Start the journey towards gaining the ability to communicate mathematical results clearly.</p> <p>8.4.2: Work together with others as a team.</p> <p>8.4.3: Understand the importance of clarity and precision in philosophical discussion and writing.</p>	<p>8.5.1: Develop the ability to communicate mathematical results clearly.</p> <p>8.5.2: Continue to work together with others as a team.</p> <p>8.5.3: Deploy well-formed arguments in discussion and written work.</p>	<p>8.6.1: Extend the ability to communicate mathematical results clearly, to both mathematicians and lay persons.</p> <p>8.6.2: Extend team-working skills.</p> <p>8.6.3: Effectively argue for or against a view in a wide variety of contexts, both orally and in written work.</p>
<p>9: Gain and apply skills of time-management and develop a career plan.</p>	<p>9.4.1: Learn and apply general skills of time-management and organization.</p> <p>9.4.2: Develop the skill of personal motivation and start the process of planning a career path.</p>	<p>9.5.1: Develop general skills of time-management and organization.</p> <p>9.5.2: Develop employability skills, including personal motivation and the planning of a career path.</p>	<p>9.6.1: Further develop general skills of time-management and organization.</p> <p>9.6.2: Continue to improve employability skills, and the planning of a career path.</p>
<p>10: Gain familiarity with computer methods in mathematics, and develop IT skills, including word-processing and use of the internet.</p>	<p>10.4.1: Introduce computer methods in mathematics and statistics.</p> <p>10.4.2: Develop IT skills, including word-processing and use of the internet.</p>	<p>10.5.1: Gain familiarity with computer methods in mathematics and statistics.</p> <p>10.5.2: Embed IT skills, including word-processing and use of the internet.</p>	<p>10.6.1: Extend the use of computer methods in mathematics and statistics.</p> <p>10.6.2: Extend IT skills, including mathematical word-processing and use of the internet.</p>

<p>11: Develop the skill to work independently and gather, organise, and deploy evidence using a variety of resources, assessing its nature and value.</p>	<p>11.4.1: Develop the ability to learn independently, using a variety of media including books, and online resources.</p> <p>11.4.2: Know how to identify and locate scholarly literature relevant to a given research topic.</p>	<p>11.5.1: Grow the skill to learn independently, using a variety of media including books, learned journals, the internet, and so on.</p> <p>11.5.2: Organize and assess sources of information relevant to a research topic.</p>	<p>11.6.1: Extend the skill to work independently with persistence and patience, pursuing the solution of problems to their conclusion.</p> <p>11.6.2: Critically assess and make effective use of previous literature on a research topic in their own work.</p>
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Section 7 - Teaching, learning and assessment

Teaching and learning on your course is closely informed by the active research of staff, particularly in the areas of Mathematics. In general terms, the course provides an opportunity for you to develop and demonstrate the learning outcomes detailed herein.

Teaching and learning is by lectures, small group tutorials or seminars, written and oral feedback on coursework, guided independent study and oral presentation. Assessment of knowledge and understanding is typically by formal examinations, coursework, examined essays, exercises, online tests and exercises, oral presentations and the dissertation or long essay. In addition, students may be involved in workshops and may produce various forms of creative work.

Contact hours come in various forms and may take the form of time spent with a member of staff in a lecture or seminar with other students. Contact hours may also be laboratory or, studio-based sessions, project supervision with a member of staff, or discussion through a virtual learning environment (VLE). These contact hours may be with a lecturer or teaching assistant, but they may also be with a technician, or specialist support staff.

The way in which each module on your degree course is assessed will also vary. Assessments designated as 'summative' will receive a mark which will count towards your overall mark for the module, and potentially your degree classification, depending on your year of study. On successful completion of the module you will gain the credits listed.

More detailed information on modules, including teaching and learning methods, and methods of assessment, can be found via the online [Module Catalogue](#). The accuracy of the information contained in this document is reviewed regularly by the university, and may also be checked routinely by external agencies.

Section 8 – Additional costs
There are no single associated costs greater than £50 per item on this degree course.
These estimated costs relate to studying this particular degree course at Royal Holloway. General costs such as accommodation, food, books and other learning materials and printing etc., have not been included, but further information is available on our website.

Section 9 – Indicators of quality and standards	
QAA Framework for Higher Education Qualifications (FHEQ) Level	4-6
Your course is designed in accordance with the FHEQ to ensure your qualification is awarded on the basis of nationally established standards of achievement, for both outcomes and attainment. The qualification descriptors within the FHEQ set out the generic outcomes and attributes expected for the award of individual qualifications. The qualification descriptors contained in the FHEQ exemplify the outcomes and attributes expected of learning that results in the award of higher education qualifications. These outcomes represent the integration of various learning experiences resulting from designated and coherent courses of study.	
QAA Subject benchmark statement(s)	http://www.qaa.ac.uk/quality-code/subject-benchmark-statements
Subject benchmark statements provide a means for the academic community to describe the nature and characteristics of courses in a specific subject or subject area. They also represent general expectations about standards for the award of qualifications at a given level in terms of the attributes and capabilities that those possessing qualifications should have demonstrated.	

Section 10– Intermediate exit awards (where available)		
You may be eligible for an intermediate exit award if you complete part of the course as detailed in this document. Any additional criteria (e.g. mandatory modules, credit requirements) for intermediate awards is outlined in the sections below.		
Award	Criteria	Awarding body
Diploma in Higher Education (DipHE)	Pass in 210 credits of which at least 90 must be at or above FHEQ Level 4 and at least 120 of which must be at or above FHEQ Level 5	Royal Holloway and Bedford New College

Certificate in Higher Education (CertHE)	Pass in 120 credits of which at least 90 must be at or above FHEQ Level 4	Royal Holloway and Bedford New College
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