Royal Holloway, University of London
Course specification for an undergraduate award
BSc (Econ) Economics and Data Science (L140)

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 (Econ) Economics and Data Science is delivered in three stages, each of which comprises one year of full-time study during which the student must follow modules to the value of 120 credits. The curriculum is based around a core of mandatory modules. Stage one provides a foundation for the later stages through a grounding in mathematical and statistical techniques, and in contemporary micro and macroeconomics, and some experience of the application of mathematics to formal economic argument. In stage two, students develop their core economic knowledge further and use increasingly sophisticated analytic methods. Students also develop their statistical and data science skills further at this stage. In stage three, most students have the option to research and write an extended essay. Students also select specialist options which provide the opportunity to learn how the general theory and methods they have acquired can be applied in areas which are of specific interest to them. While Royal Holloway keeps all the information made available under review, courses and the availability of individual modules, especially optional modules are necessarily subject to change at any time, and you are therefore advised to seek confirmation of any factors which might affect your decision to follow a specific course. In turn, Royal Holloway will inform you as soon as is practicable of any significant changes which might affect your studies. 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	March 2026	**Location of study**	Egham Campus
Course award and title	BSc (Econ) Economics and Data Science	**Level of study**	Undergraduate
Course code	3673	**UCAS code**	L140
Year of entry	2026/27		
Awarding body	Royal Holloway, University of London		
Department or School	Department of Economics	**Other departments or schools involved in teaching the course**	N/A
Mode(s) of attendance	Full-time	**Duration of the course**	3 years
Accrediting Professional, Statutory or Regulatory Body requirement(s)	On completion of the course you may be able to apply for certain CIMA exemptions.		
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	EC1101	Principles of Economics	30	4	MC
1	EC1108	Data Skills for Economists	30	4	MNC
1	EC1103	Applied Economics and Policy	30	4	MC
1	EC1109	Mathematics for Economics	30	4	MNC
1	EC1107	Employability 1	0	4	MC
2	EC2202	Macroeconomics	30	5	MNC
2	EC2401	Introduction to Data Science	15	5	MNC
2	EC2402	Economic Modelling and Data Science	15	5	MC
2	EC2201	Microeconomics	30	5	MNC
2	EC2208	Econometrics 1	15	5	MNC
2	EC2209	Econometrics 2	15	5	MC
2	EC2107	Employability 2	0	5	MC
3	EC3107	Employability 3	0	6	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.

In Year 3 you must choose optional modules to the value of 120 credits from the stage 3 modules offered by the Department (see section 3.2 for a selection of optional modules that may be available). When making your selection, it is a requirement that you take:

i) at least 30 credits from the following *Statistical Inference Basket*:

- EC3133 Advanced Econometrics 1 (15 credits);
- EC3233 Advanced Econometrics 2 (15 credits, EC3133 is a pre-requisite);
- EC3335 Financial Econometrics with Data Science (15 credits);
- EC3367 Time Series for Macroeconomics with Data Science (15 credits, EC2401 is a pre-requisite),

AND

ii) at least 30 credits of modules from the following *Data Science Basket*:

- EC3364 Web-Scraping and Internet-Based Data Collection (15 credits, EC2401 is a pre-requisite);
- EC3365 Data Presentation and Visualisation (15 credits, EC2401 is a pre-requisite);
- EC3366 Machine Learning and Data Mining (15 credits, EC2401 is a pre-requisite);
- EC3367 Time Series for Macroeconomics with Data Science (15 credits, EC2401 is a pre-requisite).

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 undergraduate students are required to take and pass the non-credit bearing Moodle-based Academic Integrity module SS1001 to progress into the second year of study (unless their course includes the alternative mandatory SS1000 module). The pass mark for the module assessment is stated in the on-line Academic Integrity Moodle module. Students may attempt the assessment 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 provide training in the principles of economics and to develop an understanding of econometric skills so as to perform the analyse of data in an economic framework;
- to stimulate students intellectually through the study of economics and econometrics and to lead them to appreciate their application to a range of problems;
- to develop in students the ability to apply the knowledge and skills they have acquired to the solution of theoretical and in particular applied problems in economic policy;
- to equip students with appropriate tools for analysing data so as to inform economic policy;
- to develop, through the study of economics and econometrics, a range of transferable skills that will be of value in employment and self-employment;
- to provide students with analytical skills and an ability to develop simplifying frameworks for studying the real world;
- to provide students with the knowledge and skill base from which they can proceed to further studies in Economics and Econometrics or related areas.

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 (*)*)

Theme	Course learning outcome	Level 4	Level 5	Level 6
Knowledge and Understanding	**Demonstrate understanding** of subject-specific theories, paradigms, concepts and principles, and **in-depth knowledge** of a range of specialised areas	Recall key economic concepts, principles and tools; Restate key economic theories, interpretations and modelling approaches; Operate with basic theoretical and empirical economic models and tools.	Describe and use basic and advanced economic concepts, principles and tools; Discuss a wide variety of economic theories, interpretations and modelling approaches; Link theoretical to empirical predictions.	Use advanced economic, statistical and data tools; Apply a wide variety of statistical and data modelling and visualisation approaches; Demonstrate proficiency in quantitative methods and computing techniques; Apply modelling techniques and methods effectively across a range of economic problems.
	Conduct independent, extensive, and rigorous investigation, analysis, and/or **research** to professional standards	Reproduce basic quantitative methods and computing techniques; Appreciate the contexts in which these techniques and methods are relevant.	Routinely use basic and more advanced quantitative methods and computing techniques; Match appropriate methods to the contexts in which they are relevant; Justify appropriateness of alternative methods of analysis over others using basic arguments.	Routinely use advanced and professionally recognised economic modelling and data science techniques; Apply appropriate quantitative methods in authentic workplace settings; Justify appropriateness of alternative methods of analysis over others.
	Critically evaluate previous work and arguments in the field, with a goal to advance the existing debate	Recollect different approaches to addressing economic problems with a basic awareness of the limits of these approaches as well as their contributions.	Process different approaches to addressing economic problems with an excellent awareness of the applicability and limits of these approaches; Discuss the contributions of previous work in a field of study.	Systematically consider, critically evaluate and synthesise a wide range of views and information; Outline limitations of existing knowledge and/or ways to develop contributions in a specific field of study.

Cognitive Skills	**Devise and sustain arguments** using theories discussed in class for a wide variety of problems	Recognise contrasting viewpoints on a certain economic problem; Distil advantages and disadvantages in the approaches taken in solving an economic problem.	Associate an economic problem to its historical, political, institutional, international, social, cultural or environmental contexts in which economic analysis is applied; Integrate theory and data for a coherent message for both professional and non-professional audiences.	Demonstrate an ability to select, consider, evaluate, comment on and synthesise a broad range of research, primary sources, views and information and integrate references; Abstract a complex problem and frame it into an environment where economic and data science models can be applied.
	Solve problems using the frameworks discussed in class	Be familiar with solution algorithms for basic economic problems; Apply mathematical methods to find equilibria in a variety of modelling frameworks; Apply basic statistical and econometric techniques to illustrate relationships between variables and form expectations about their behaviour.	Manipulate a variety of economic models using mathematical, statistical and econometric techniques; Use the expected behaviour of variables to formulate policy implications in a variety of microeconomic and macroeconomic contexts.	Demonstrate independent problem-solving using both theory and data and devise predictions about the expected behaviour in the data; Formulate policy implications based on independently conducted research.
	Demonstrate creativity and originality	Develop an ability to ask questions with potentially impactful answers; Justify the importance of asking policy-relevant questions; Show signs of independent thinking in distinguishing between own project goals and results achieved by others.	Review arguments presented by others and describe ways to advance those arguments; Manage small-scale research projects with some feedback and supervision, with a view of distilling contribution to a certain field of study.	Show high level of creativity and originality throughout their work, with a view of making a justifiably positive impact in their workplace, industry, research fields or the wider economy; Distinguish between contributions done in previous field work and potential contributions through independently conducted research.

3. Practical Skills	**3.1. Apply** discipline-specific specialist skills	Develop awareness of not only theoretical and empirical models but also their applications in policy analysis and everyday business practices; Use existing policy debates to illustrate the usefulness of basic theoretical and empirical models.	Discuss policy implications stemming from theoretical and empirical frameworks; Distinguish and compare viewpoints in the economic reasoning behind specific policy proposals; Formulate policy measures based on previous research using guidance and/or supervision.	Design policy implications from theoretical and empirical frameworks discussed in class; Critically evaluate economic reasoning behind policy proposals; Independently formulate policy measures based on own research, consistent with the results of that research.
	3.2. Present research findings and ideas in a variety of formats and outlets	Take part in individual and/or group presentations distilling main messages from previous work or independently conducted research; Present in a synchronous or asynchronous environment; Write a policy brief or a non-technical summary of a professionally written article.	Present own work and the work of others in synchronous and asynchronous settings; Reflect on critical feedback and use it to improve own work.	Communicate ideas, problems and solutions to an accomplished level using verbal and written media; Engage with live audiences by asking for and responding to critical comments; Tailor the main message from independently conducted work to a variety of professional and non-professional audiences, in both verbal and written form.
	3.3. Gather, process, and interpret a wide range of data	Classify sources and content of economic data and evidence; Identify methods that might be appropriate for the analysis of such data; Apply basic regression modelling to test simple hypotheses that may or may not be rooted in a theory model.	Identify field-specific sources of economic data in widely known fields; Use methods that might be appropriate for the analysis of such data; Apply basic and more advanced regression modelling to test theory-based hypotheses.	Identify sources and content of economic data in most fields of the economics profession; Routinely use methods for appropriate analysis of such data; Present data and results in an engaging way for a wide variety of audiences.

Transferrable Professional Skills	**4.1. Recognise equality, diversity, and inclusion (EDI) issues** in the workplace or wider society and propose methods to address them	Be aware of ways Economics and related disciplines have dealt with EDI issues.	Recall models used to understand discrimination in the workplace and inequality in society overall.	Apply theoretical and empirical models of EDI to real-world scenarios and situations, allowing them to address EDI issues in the workplace and propose specific policy measures, such as: widening participation initiatives and policies countering under-representation.
	4.2. Make decisions with a high degree of autonomy, in complex and unpredictable environments.	Manage learning with some external incentives, and work with little supervision; Make first steps in critical self-reflection.	Manage learning with increasing independence and confidence, and work without supervision; Self-reflect critically with some external help on own work.	Systematically shift between learning environments; Multitask using a variety of appropriate professional methods and techniques; Self-reflect critically and independently on their work.
	4.3. Mobilise a wide range of **technical, creative, and problem-solving skills** to successfully manage self- and workplace improvement	Contribute to group-level discussions and/or projects, which may be individual or group-level; Plan activities to complete a project and show initiative.	Take advantage of peer-level discussions for independent improvement and make occasional valuable contributions to group work with a view of developing teamwork and leadership skills.	Make clear, authoritative, and useful contributions to group-level discussions and/or project work, with demonstrable teamwork and/or leadership skills.

Section 7 - Teaching, learning and assessment
Teaching and learning in the course are closely informed by the active research of staff. Teaching is mostly by means of lectures and seminars, the latter generally providing a forum for students, with the support of their instructors, to work through problem sets and applications in a smaller and more interactive setting. Learning is through participation in lectures and seminars, designated reading and completion of problem sets and online exercises. Essays and short written answers ensure that the skills of exposition and critique are developed and evaluated. At the end of the course and if the extended essay is undertaken, most students will apply the knowledge and skills they have acquired in the conduct of a piece of original research under the close supervision of a member of staff. It is expected that students with an interest in research will develop the relevant skills for future use. Assessment of knowledge and understanding is typically by formal, unseen written examination, although continuous assessment in the form of unseen tests features in the assessment of a number of modules. 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 Royal Holloway Curriculum 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