Programme Information		
Programme Title	Programme Code	HECoS Code
BSc Economics, Finance and Data Science	L1N3	For Registry Use Only

Award	Length of Study	Mode of Study	Entry Point(s)	Total Credits	
				ECTS	CATS
BSc	3 Academic Years	Full-time	Annually in October	180	360
DipHE	2 Academic Years	Full-time	None – exit award only	120	240
CertHE	1 Academic Year	Full-time	None – exit award only	60	120

Ownership			
Awarding Institution	Imperial College London	Faculty	Imperial College Business School
Teaching Institution	Imperial College London	Department	Imperial College Business School
Associateship	N/A	Main Location(s) of Study	South Kensington Campus & White City Campus

External Reference	
Relevant QAA Benchmark Statement(s) and/or other external reference points	QAA Subject Benchmark Statements: Economics Finance Computing UK external reference points: BSc Economics (LSE): overview, structure BSc Finance (LSE): overview, structure BSc Data Science (LSE): overview, structure BSc Computer Science and Economics (St Andrews) BA Economics (Cambridge)
FHEQ Level	BSc Levels 4-6
EHEA Level	1st Cycle

External Accreditor(s) (if applicable)			
External Accreditor 1:	AMBA		
Accreditation received:	1987	Accreditation renewal:	2023

External Accreditor 2:	EQUIS		
Accreditation received:	2006	Accreditation renewal:	2025
External Accreditor 3:	AACSB International		
Accreditation received:	2012	Accreditation renewal:	2023
Collaborative Provision			
Collaborative partner	Collaboration type	Agreement effective date	Agreement expiry date
N/A	N/A	N/A	N/A
Specification Details			
Programme Lead		Dr Pedro Rosa Dias	
Student cohorts covered by specification		2023-24 entry	
Date of introduction of programme		October 23	
Date of programme specification/revision		January 22	

Programme Overview

The BSc Economics, Finance and Data Science is set against the backdrop of increasing demand for graduates with academic training in economics and finance whose analytical skills are complemented with knowledge of data science and coding capabilities. Whilst economics and finance form the basis of rigorous undergraduate programmes in leading institutions across the sector, these have not historically included the study of data science as part of the curriculum, leaving graduates to develop these skills independently.

The BSc Economics, Finance and Data Science degree draws on the academic expertise of all Departments in Imperial College Business School (Economics and Public Policy; Finance; Analytics, Marketing and Operations; Management and Entrepreneurship) to offer students the rigorous study of economics and finance, enriched through the study of data science and its applications within these disciplines. A further dedicated sequence of modules develops the essential skills identified by employers.

Through the study of economics students will analyse how households, firms and governments behave and interact to determine income, wealth and well-being, and hence inform both business decisions and public policy design. Years 1 and 2 include a theoretical exploration at the individual level through core Microeconomics modules, and at the aggregate level through core Macroeconomics modules. The importance of evaluating frameworks against an evidence base is emphasised throughout, with students engaging in quantitative data analysis.

Through the study of finance students will develop a core understanding of financial markets, financial institutions as well as the design of financial instruments. In Accounting students will construct and interpret financial statements, while in Corporate Finance students explore how firms can maximise value through financing and investment decisions, paving the way to finance options in Year 3.

Both finance and economics interact heavily with mathematical and statistical methods. Through core Econometrics modules students develop an in-depth theoretical understanding of empirical methods relevant to economics and finance, alongside key applications enhanced by the study of data science. Students will learn to programme from the outset, which alongside modules in Machine Learning, Databases and Cloud Computing, will offer the tools with which to address a wide range of empirical questions, using both small and large datasets.

The core curriculum is further enhanced by a cross-cutting module designed to develop skills identified as essential by employers, such as strong communication and presentation skills (e.g. the ability to communicate ideas visually and verbally), effective teamwork in diverse organisations, critical thinking, design thinking and a creative mindset to problem solving. It integrates a new type of management skills training focused on Leadership, Ethics, Awareness, Diversity and Societal Impact (LEADS).

In their final year students will be able to choose from specialist electives in Economics, Finance, Data Science, in addition to electives from all academic areas within the Business School. These reflect the broad scope of expertise within the Business School, in areas such as health, energy and climate change and innovation and entrepreneurship. The final year structure is sufficiently flexible to allow students to specialise in either of the three fields through appropriate selection of Year 3 modules, so as to enable access to leading Masters programmes in either of the three disciplines. Students who prefer to continue with a mix of electives across the three areas of study can also do so.

Learning Outcomes

Upon successful completion of FHEQ Level 4 of BSc Economics, Finance, and Data Science programme students will:

- Comprehend a range of microeconomic concepts and modelling frameworks and be able to competently apply them to analyse a range of decision problems of consumers and firms, using appropriate quantitative methods, and to evaluate the effects of economic policy on decisions and outcomes.
- Structure and solve economic and finance problems in mathematical format, as well as to interpret these mathematical solutions in terms of their “real world” economic context. Understand and utilise statistical inference to in the context of economics and finance, including probability distributions, confidence intervals, hypothesis testing and correlation analysis.
- Develop programming skills and the ability to “data wrangle” and visualise data. Understand and implement some commonly used data structures.
- Demonstrate knowledge and understanding of core macroeconomic, accounting and financial concepts and principles with reference to real life applications. Use basic statistical and computational techniques (e.g. using R or Python) to produce and analyse macroeconomic, financial and accounting data and apply basic problem-solving skills and mathematical techniques to analyse basic macroeconomic and financial models.
- Develop intellectual, cognitive and transferable skills such as communication and analysis of data, theory and evidence.
- Apply innovative and creative thinking and problem-solving skills to complex, ambiguous, uncertain, and systemic problems. Explore, define and reframe problems, and generate solutions or alternative approaches for existing ones.

Upon successful completion of FHEQ Level 5 of BSc Economics, Finance, and Data Science programme students will:

- Comprehend microeconomic modelling frameworks that relate to the interaction of decision-makers within a market and otherwise and be able to appropriately apply these to different contexts and to evaluate policy issues, interpret analytical findings, and critically evaluate these against relevant evidence.
- Demonstrate understanding of causal inference and the ability to apply econometric methods in the context of economics and finance, including randomised experiments, matching, regression analysis, instrumental variables and two-stage least squares, as well panel data and time series analysis.
- Formulate and solve different classes of optimisation problems via software. Demonstrate ability to run Monte-Carlo simulation. Understand core problems of machine learning (supervised and unsupervised learning) and to implement standard algorithms from ML. Demonstrate knowledge of data-base theory and different approaches to storing data.
- Recognise and explain the importance and practical implications of risk and uncertainty in macroeconomics and finance. Define and describe a selection of basic dynamic macroeconomic and financial models, together with their applications to asset pricing, portfolio choice and macroeconomics. Demonstrate an understanding of corporate financial decisions, such as capital structure and discounted cash flow analysis.
- Apply relevant econometric and computational methods to develop computer code designed to analyse data/models and assess the effectiveness of macroeconomic policies and financial decisions. Further develop intellectual, cognitive and transferable skills, including written and verbal communication.

- Demonstrate the ability to articulate ideas and concepts visually and verbally, embracing uncertainty and seeking new opportunities by exploration and experimentation. Understand how to communicate and perform effectively within a team and within an organisation.

Upon successful completion of FHEQ Level 6 of BSc Economics, Finance, and Data Science programme students will:

- Have developed knowledge in a number of specialised areas in microeconomics and be able to synthesise and evaluate research literature in these areas, proficiently analyse microeconomic issues using advanced analytical methods and creatively formulate and address research questions pertaining to these areas.
- Demonstrate the ability to use state-of-the-art econometrics and data science methods to address applied problems in economics and finance. This arsenal of methods may encompass panel data (static and dynamic models), fixed and random effects models, the estimation of local average and marginal treatment effects using instrumental variables, GMM, textual analysis and big data.
- Define, describe and compare dynamic macroeconomic and financial models by using appropriate econometric, machine learning and computational methods, to provide economic policy and financial guidance. Apply financial economics to selected topics, such as: asset management, derivatives, risk management, banking and financial intermediation, corporate governance, and dynamic asset pricing.
- Justify, interpret and communicate insights from the evaluation of real-world problems in finance and economics. Transfer the analytical skills developed in the context of economics to other settings. Develop system thinking and apply empathy to define solutions via leadership, ethics, awareness, diversity and societal impact (LEADS).

The Imperial Graduate Attributes are a set of core competencies which we expect students to achieve through completion of any Imperial College degree programme. The Graduate Attributes are available at: www.imperial.ac.uk/students/academic-support/graduate-attributes

Entry Requirements	
Academic Requirement	**A-levels:** A*AA with an A* in Mathematics. Further Mathematics is useful, but not required. Further Mathematics is acceptable for entry in combination with Mathematics and one other A-level from traditional subjects. **IB Diploma:** Minimum **39** points including **7** in Mathematics at higher level, with **6** in two further subjects at higher level. Either Mathematics Analysis and Approaches or the Applications and Interpretation syllabi will be accepted at higher level with no preference **Or equivalent comparable qualifications recognised by the College.**
Non-academic Requirements	N/A
English Language Requirement	Higher requirement (UG) IELTS score of 7.0 overall (minimum 6.5 in all elements)
Admissions Test/Interview	All applicants will be required to take an admissions test. Selected applicants may be invited to an interview, either in person or online.

Exemptions from some Chartered Institute of Management Accountants (CIMA) professional examinations are possible through the Accredited degree accelerated route.

Key CIMA contact:
Jason Nye Manager, Student Recruitment — Management Accounting Association | AICPA | CIMA M: +44 (0) 7595 565 443 jason.nye@aicpa-cima.com
The Helicon, One South Place, London, EC2M 2RB CIMA: cimaglobal.com/Contact-us/

Learning & Teaching Approach

Scheduled Learning & Teaching

Students are taught through a combination of lectures, tutorials, as well as computing labs. Tutorials enable students to discuss and apply their understanding of topics covered in lectures in interactive small group sessions. Students develop coding skills through computing lab sessions, which are used in activities and projects throughout the degree.

The Virtual Learning Environment (VLE) serves as a repository for all teaching materials including recordings of all lectures, lecture slides, problem sets etc, while students have the opportunity to interact with their peers and teachers through online discussion forums. Learning technologies support teaching activities, such as in-class polling and online self-diagnostic quizzes.
No one set of teaching and learning activities or methods is uniquely suitable for the study of modules taken on the BSc Economics, Finance and Data Science. The approach to teaching in the Business School is student-focused and our multi-mode approach accounts for the diverse background and aspirations of students. The design of teaching and learning activities will strike the appropriate balance between developing theoretical understanding and experiential learning through applications, enhanced through digital innovation.

Diverse teaching methods will be adopted and enhanced, as appropriate for each discipline and module, through the use of digital media, in-class activities such as classroom games, or flipped teaching approaches. Combined with extra-curricular opportunities and the vibrant environment of the Business School, students can expect an enriching student experience.

Independent Learning
Students are expected to spend significant time on independent study outside of in person and online contact time, while supported and guided by academic staff. Independent study is both a crucial determinant of academic performance, as well as important for developing autonomy, self-motivation and self-confidence, all of which prepare students for professional practice where they will be expected to manage their own continued professional development.

Students can also expect to spend part of independent study interacting with their peers for the development of group projects, as well as working within study groups. This will serve to make the degree experience more engaging, whilst also embedding important teamwork and leadership skills that will prepare students for their professional practice and which are valued by employers.

Independent learning activities that students are expected to undertake will typically include studying teaching and learning resources on the VLE, reviewing lecture recordings and developing notes, working through problem sets, engaging with coding activities, reading books, reports and journal articles, undertaking research, working on individual and group projects, working on coursework assignments and revising for examinations.

Overall Workload
Students' overall workload on the BSc Economic, Finance and Data Science consists of scheduled teaching and learning sessions and independent learning.

At Imperial, each ECTS credit taken equates to an expected total study time of 25 hours. Therefore, the expected total study time is 1500 hours per academic year. While contact hours may vary depending on the specific modules taken, students can expect to spend around 25% of study time on lectures, seminars and other scheduled activity (around 400 hours) and around 75% of study time on independent study (around 1100 hours). In the final year, students who select a quantitative project can expect to spend more time engaging in research and data analysis.

Assessment Strategy

Assessment Methods

A variety of assessment methods will assess students' understanding. Assessments are grouped as formative and summative.

Formative assessments do not contribute to the module mark but provide information on students' progress and are opportunities for feedback and student reflection that guides future learning. This enables students to improve their understanding as well as their skills, in order to achieve a better performance in summative

assessments, which do count towards module marks. Formative assessments also provide feedback for teaching staff, which enables teaching and assessment to evolve and improve.

Summative assessments are used to assess student learning against the intended module learning outcomes and contribute towards the achievement of the programme learning outcomes, detailed above. There is summative assessment during and/or at the end of each module and these assessments contribute towards mark for each year, and thus towards degree classification.

No one set of assessment methods is uniquely suitable for assessing student learning against learning outcomes for the BSc Economics, Finance and Data Science. Students will broadly be assessed through a mix of individual and group coursework activities as well as unseen examinations. While in most modules the weighting of unseen examination constitutes the majority, some modules may be entirely or largely coursework-based.

Examples of assessed Coursework

- Problem sets
- Project reports
- Oral presentations
- Poster presentations

Examples of Examinations

- In class or online tests
- Final unseen examination

Academic Feedback Policy

Timely feedback will be provided in one of many formats, including:

- Oral (during or after class, personally or within a group)
- Personal (discussion with academics during office hours, meetings with Personal Tutors)
- Interactive (problem solving with GTAs & study groups, peer feedback)
- Written (solutions/guideline answers to coursework, feedback on submitted work)
- Online (results of online tests with correct answers provided)
- Self-reflective (through class discussion and other activities)

In each case the date when feedback will be available by will be communicated to students.

Individual feedback will not be provided on written examinations. However, feedback on the general performance of the cohort will be given. Numerical results will be published after the meeting of the final Board of Examiners.

The College's Policy on Academic Feedback and guidance on issuing provisional marks to students is available at:
www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Re-sit Policy

The College's Policy on Re-sits is available at: www.imperial.ac.uk/student-records-and-data/for-current-students/undergraduate-and-taught-postgraduate/exams-assessments-and-regulations/

Mitigating Circumstances Policy

The College's Policy on Mitigating Circumstances is available at: www.imperial.ac.uk/student-records-and-data/for-current-students/undergraduate-and-taught-postgraduate/exams-assessments-and-regulations/

Additional Programme Costs

This section should outline any additional costs relevant to this programme which are not included in students' tuition fees.

Description	Mandatory/Optional	Approximate cost
n/a	n/a	n/a

Important notice: The Programme Specifications are the result of a large curriculum and pedagogy reform implemented by the Department and supported by the Learning and Teaching Strategy of Imperial College London. The modules, structure and assessments presented in this Programme Specification are correct at time of publication but might change as a result of student and staff feedback and the introduction of new or innovative approaches to teaching and learning. You will be consulted and notified in a timely manner of any changes to this document.

Programme Structure[1]					
Year 1 – FHEQ Level 4 **Students study all compulsory modules.**					
Code	Module Title (all titles subject to change)	Core/ Elective/ Compulsory	Group	Term	Credits (TBC)
TBA	Mathematical Foundations	Core		AU	7.5
TBA	Statistics	Core		AU	7.5
TBA	Introduction to Data Science	Core		AU	7.5
TBA	Big Issues in Economics, Finance, and Business	Compulsory		AU	5
TBA	Accounting	Compulsory		AU	5
TBA	Microeconomics 1	Compulsory		SP	7.5
TBA	Macroeconomics 1	Compulsory		SP	7.5
TBA	Data Structures and Algorithms	Compulsory		SP	7.5
TBA	Essential Skills 1: Creative Problem Solving	Compulsory		AU/SP/SU	5
				Credit Total	60
Year 2 - FHEQ Level 5 **Students study all compulsory modules.**					
Code	Module Title (all titles subject to change)	Core/ Elective/ Compulsory	Group	Term	Credits
TBA	Microeconomics 2	Compulsory		AU	7.5
TBA	Econometrics 1	Compulsory		AU	7.5
TBA	Machine Learning	Compulsory		AU	7.5
TBA	Corporate Finance and Capital Markets	Compulsory		AU	7.5
TBA	Macroeconomics 2	Compulsory		SP	7.5
TBA	Econometrics 2	Compulsory		SP	5
TBA	Operations Research	Compulsory		SP	7.5
TBA	Databases and Cloud Computing	Compulsory		SP	5
TBA	Essential Skills 2: Emotional Intelligence in the Workplace	Compulsory		AU/SP	5
				Credit Total	60

[1] **Core** modules are those which serve a fundamental role within the curriculum, and for which achievement of the credits for that module is essential for the achievement of the target award. Core modules must therefore be taken and passed in order to achieve that named award. **Compulsory** modules are those which are designated as necessary to be taken as part of the programme syllabus. Compulsory modules can be compensated. **Elective** modules are those which are in the same subject area as the field of study and are offered to students in order to offer an element of choice in the curriculum and from which students are able to select. Elective modules can be compensated.

Year 3 - FHEQ Level 6 **Students select 6 Electives from all academic areas, including specialised in Economics, Data Science or Finance**					
Code	Module Title (all titles subject to change)	Core/ Elective/ Compulsory	Group	Term	Credits
TBA	Laboratory of Methods in Economics, Finance and Data Science	Compulsory		AU&SP	10
TBA	Final Project	Compulsory		SP&ST	10
TBA	Essential Skills 3	Compulsory		AU&SP	5
TBA	I-Explore	Compulsory		AU/SP	5 or 7.5
TBA	Industrial Organisation	Elective		AU	5
TBA	Game Theory	Elective		AU	5
TBA	Energy Economics	Elective		SP	5
TBA	Health Economics	Elective		SP	5
TBA	Public Economics	Elective		SP	5
TBA	Monetary Economics	Elective		AU	5
TBA	Applied Econometrics	Elective		AU	5
TBA	Advanced Machine Learning	Elective		AU	5
TBA	Text-Mining in Economics and Finance	Elective		SP	5
TBA	Marketing Analytics	Elective		SP	5
TBA	Organisational Behaviour	Elective		SP	5
TBA	Innovation and Entrepreneurship	Elective		AU	5
TBA	Asset Pricing	Elective		AU	5
TBA	Advanced Corporate Finance	Elective		AU	5
TBA	Risk Management	Elective		SP	5
TBA	Advanced Macroeconomics	Elective		AU	5
TBA	Climate Change and Finance	Elective		SP	5
TBA	Project Management	Elective		SP	5
				Credit Total	60

Important notice: The range of electives available in a given year is dependent on staff availability (influenced by sabbaticals, retirements and resignations). Where possible, you will be given notice of the available options ahead of making module choices.

Progression and Classification

Progression

In order to progress to the next level of study, you must have passed all modules (equivalent to 60 ECTS) in the current level of study at first attempt, at resit or by a compensated pass.

The overall weighted average for each year must be 40.00%, including where a module(s) has been compensated, in order for you to progress to the next year of the programme.

Classification

The marks from modules in each year contribute towards the final degree classification.

In order to be considered for an award, you must have achieved the minimum number of credits at the required levels prescribed for that award and met any programme specific requirements as set out in the Programme Specification.

Your classification will be determined through:

i) Aggregate Module marks for all modules
ii) Year Weightings

For this award, Year One is weighted at 7.50%, Year Two at 35.00% and Year Three at 57.50%.

The College sets the class of undergraduate degree that may be awarded as follows:

i)	First	70.00% or above for the average weighted module results
ii)	Upper Second	60.00% or above for the average weighted module results
iii)	Lower Second	50.00% or above for the average weighted module results
iv)	Third	40.00% or above for the average weighted module results

Programme Specific Regulations

N/A

Supporting Information
The Programme Handbook is available at: TBC
The Module Handbook is available at: TBC
The College's entry requirements for postgraduate programmes can be found at: www.imperial.ac.uk/study/pg/apply/requirements
The College's Quality & Enhancement Framework is available at: www.imperial.ac.uk/registry/proceduresandregulations/qualityassurance
The College's Academic and Examination Regulations can be found at: www.imperial.ac.uk/about/governance/academic-governance/regulations
Imperial College is an independent corporation whose legal status derives from a Royal Charter granted under Letters Patent in 1907. In 2007 a Supplemental Charter and Statutes was granted by HM Queen Elizabeth II. This Supplemental Charter, which came into force on the date of the College's Centenary, 8th July 2007, established the College as a University with the name and style of "The Imperial College of Science, Technology and Medicine". www.imperial.ac.uk/admin-services/secretariat/college-governance/charters/
Imperial College London is regulated by the Office for Students (OfS) www.officeforstudents.org.uk/advice-and-guidance/the-register/
This document provides a definitive record of the main features of the programme and the learning outcomes that a typical student may reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities provided. This programme specification is primarily intended as a reference point for prospective and current students, academic and support staff involved in delivering the programme and enabling student development and achievement, for its assessment by internal and external examiners, and in subsequent monitoring and review.

Modifications			
Description	**Approved**	**Date**	**Paper Reference**
New programme	Programmes Committee	31/03/22	PC.2021.12