



Imperial College London

Faculty of natural Sciences
Department of Mathematics

MSc Mathematics and Finance

Student Handbook

2023-24

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Welcome to the College

Congratulations on joining Imperial College London, the only university in the UK to focus exclusively on science, medicine, engineering and business.

From Fleming's discovery of Penicillin to Gabor's invention of holography, Imperial has been changing the world for well over 100 years.

You're now very much a part of this community of discovery and we hope you will take this opportunity to make your own unique contribution. At Imperial, we expect all members of our community, whether students or staff, to share and demonstrate our values of respect, integrity, collaboration, innovation and excellence in all we do and strive to achieve.

The College provides a dedicated support network and a range of specialist support services to make sure you have access to the appropriate help, whether that's further training in an academic skill like note taking or simply having someone to talk to.

You'll have access to an innovative range of professional development courses within our Graduate School throughout your time here, as well as opportunities to meet students from across the College at academic and social events – see page 6 for more information.

We actively encourage you to seek out help when you need it and try to maintain a healthy work-life balance. Our choice of over 360 clubs, societies and projects is one of the largest of any UK university, making it easy to do something different with your downtime. Access to the gym and other sporting facilities will be dependent on government guidance. We are working to ensure that you have access to a variety of resources online to support your health and wellbeing if there are restrictions.

As one of the best universities in the world, we are committed to inspiring the next generation of scientists, engineers, clinicians and business leaders by continuing to share the wonder of what we do through public engagement events. Postgraduate students, alongside our academics and undergraduate students, make a significant contribution to events such as our annual Imperial Festival and our term-time Imperial Fringe events – if you're interested in getting involved then there will be opportunities for you to do so.



Our Principles

In 2012 the College and Imperial College Union agreed 'Our Principles'. This series of commitments was developed by academic and support staff in partnership with undergraduate and postgraduate students and Imperial college Union.

Imperial will provide through its staff:

- A world class education embedded in a research environment
- Advice, guidance and support
- The opportunity for students to contribute to the evaluation and development of programmes and services

Imperial will provide students with:

- Clear programme information and assessment criteria
- Clear and fair academic regulations, policies and procedures
- Details of full programme costs and financial support
- An appropriate and inclusive framework for study, learning and research

Imperial students should:

- Take responsibility for managing their own learning
- Engage with the College to review and enhance provision
- Respect, and contribute to, the Imperial community

The Imperial College Students' Union will:

- Support all students through the provision of independent academic and welfare assistance
- Encourage student participation in all aspects of the College
- Provide a range of clubs, societies, student-led projects and social activities throughout the year
- Represent the interests of students at local, national and international level



www.imperial.ac.uk/students/our-principles

Welcome from the Graduate School



Welcome to Imperial College London and the Graduate School!

The Graduate School is responsible for the postgraduate experience at the College and we work closely with Imperial College Union to ensure that when decisions are being made, which affect your time at Imperial, your voice is heard.

Another important aspect of our role is to offer you a free and exciting range of professional development opportunities which you can access wherever you are in the world.

Our team of tutors have a variety of research and other career experiences. We understand the importance of developing professional skills and our programmes will help you to progress in your academic studies and research and will prepare you for your future career. Whether you wish to pursue a career in academia, industry or something completely different, professional development training will improve your personal impact. You will also get to meet students from other Departments when attending our courses.

The Graduate School runs exciting competitions throughout the year which are an opportunity to broaden your knowledge as well as to meet other students and have fun.

Our primary way to communicate with you will be through our monthly e-newsletter and our weekly professional skills email bulletins. However, do check our website, blog and social media platforms to keep up to date with all the latest activities available to you.

Finally, Imperial College is an extremely exciting, stimulating and diverse environment in which to work, to study and to research. Do make the most of all that the College and your programme has to offer.

The Graduate School

You automatically become a member of the Graduate School when you register as a postgraduate student at Imperial.

The Graduate School has been set up to support all postgraduate students at the College through:

- Training and development courses and retreats
- Networking activities, social and academic events to encourage cross-disciplinary interactions
- Forums to represent the views of postgraduate students throughout the College


'Masterclass' professional skills courses

You can see the full range of free professional skills courses for postgraduate students on the Graduate School website: All courses can be booked online.



Contact us

 Level 3, Sherfield Building, South Kensington Campus

 020 7594 1383

 graduate.school@imperial.ac.uk

 www.imperial.ac.uk/students/academic-support/graduate-school/

1. Introduction to the Department

Welcome from Head of Department



Dear MSc Student,

Welcome to Imperial and welcome to the Department of Mathematics!

We are a diverse and world-leading research centre and a fantastic place to study – and I am delighted that you are joining us. You will be taught by outstanding academics, that themselves produce exciting new research in their fields.

I encourage you to take full advantage of the extensive resources and vibrant community that our department, Imperial and London have to offer.

Best wishes,

Professor Axel Gandy

Welcome from Director of PG Studies



Dear MSc Students,

I'd like to offer you a very warm welcome to the Mathematics Department. The Department's academic staff and administrative support team hope to make your time at Imperial as rewarding and positive as possible. This handbook contains a wealth of useful information about your MSc programme — please read on and keep a copy at hand throughout your studies. Each of our five taught MSc courses (Applied Mathematics, Pure Mathematics, Mathematical Finance, Statistics, and Machine Learning and Data Science) are truly world-class programmes. I hope that you will find both your modules and your research project to be enriching and productive experiences. I also encourage you to engage fully with your MSc course. Many students find discussing mathematics with other students to be an essential element of learning. Your course lecturers will be very happy to discuss course material during office hours. Outside of your MSc, you will find some of the Departmental seminars and colloquia, at which you are welcome, to be enriching.

I wish you a productive and enriching year,

Dr Ryan Barnett

Director of Postgraduate Studies

Welcome from the Programme Directors

Dear all,

Welcome to the MSc in Mathematics and Finance in the Department of Mathematics, Imperial College London. We hope that you will enjoy studying here and that you will take profit from all the opportunities offered by the department, and by the College as a whole.

Mathematical Finance is a subject that is both mathematically challenging and deployed every day by sophisticated practitioners on financial markets. Our objective is to provide you with all the tools you will need to get into this area at a level where you can understand and contribute to the latest advances.

To achieve this, we have designed a full-year course, consisting of lectures, problem classes, meetings with practitioners, career events and an end-of-year project. Through the modules offered during the year, you will learn the mathematical, statistical and programming tools used on financial markets, and become aware and critical of current practices in the financial industry at large: some modules concentrate on the financial aspects (option pricing, market microstructure, algorithmic trading), while others provide training in Mathematics (stochastic analysis, partial differential equations, Statistics); several modules, in particular machine learning, numerical methods and programming will allow you to test the theory against real data, and a range of elective modules to choose from will give you the opportunity to specialise yourself in some specific areas of Mathematical Finance.


The final part of the curriculum is devoted to a research project – usually as part of an internship in the Finance industry -- which culminates in an MSc thesis. In addition, a certain number of additional modules are offered by the College for your personal development, covering a range of transferable skills such as presentation, academic writing and negotiation skills.

This booklet provides an overview of the programme structure. We encourage you to read it carefully and to keep it for future reference.


Prof. Jack Jacquier and Dr Eyal Neuman

Academic and Administrative staff




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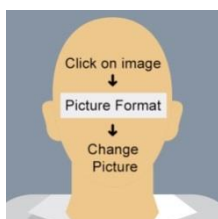
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Student Experience
Coordinator

 654 Huxley Building



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English language requirement

If you are not a native English speaker you must meet the College's English language requirements.

See the Admissions website for details:

 www.imperial.ac.uk/study/pg/apply/requirements/english

For information on English language support available while you're here, see page 27.


Attendance and absence

You must inform your Senior Postgraduate Tutor if you are absent from College for more than three days during term. If the absence is due to illness you must produce a medical certificate after seven consecutive days. If you miss an examination or the deadline for any other assessment (including lab work, in class tests, coursework or presentations) due to illness or other unforeseeable and unavoidable circumstance you must follow the College's Mitigating Circumstances Policy and Procedure. Please note that all claims for mitigation must be submitted within 10 working days of the examination or assessment deadline. If you are unable to provide evidence at the time you must submit the claim and indicate what evidence will follow and when it can be provided. Claims without evidence will normally be rejected. Please see the section on mitigation below.

The Registry will be informed of all student non-attendances as the College is obliged to report the non-attendance of students on Tier 4/Student Route visas to the Home Office.

You are required to attend all lecture meetings, problem classes and events organised by the MSc in Mathematics and Finance. In case of illness or other personal circumstances, you must produce a medical certificate within seven days. If you are ill and miss an assessment deadline (examination, presentation or coursework) you will need to make a claim for mitigating circumstances within 10 working days of the deadline. Please see the section on mitigation.

If you do not engage satisfactorily with your studies, the College will consider what action is necessary to support your continued study under the Unsatisfactory Engagement Policy:

 www.imperial.ac.uk/media/imperial-college/administration-and-support-services/registry/academic-governance/public/regulations/2022x2f23/Unsatisfactory-Engagement-Policy-and-Procedure.pdf

Key dates 2023–24

Term dates

Autumn term:	30 September 2023 – 15 December 2023
Spring term:	6 January 2024 – 22 March 2024
Summer term:	27 April 2024 – 28 June 2024

Closure dates

Christmas/New year:	23 December 2023 - 1 January 2024 (College reopens on 2 January 2024)
Easter Holiday:	28 March 2024 – 2 April 2024 (College reopens on 3 April 2024)

Early May Bank Holiday:	6 May 2024
Spring Bank Holiday:	27 May 2024
Summer Bank Holiday:	26 August 2024

Key events

Induction week:	2 - 6 October 2023
Meet Your Personal Tutor	2 – 6 October 2023
Meet Your Personal Tutor Week	20 – 24 November 2023
Examinations first term:	January 2024
Meet Your Personal Tutor Week	22 – 26 January 2024
Release of informal results	February 2024
Meet Your Personal Tutor Week	6 – 10 March 2023
Examinations second term:	May 2024
Great Exhibition Road Festival:	15 June 2024 – 16 June 2024
Release of informal results:	Mid July 2024
Project Submission Deadline	3 September 2024
Final meeting Board of Examiners:	Mid October 2024
Results released by Registry	Mid November 2024
Graduation Ceremony:	May 2025

2. Programme Information

The MSc Teaching Faculty

The Mathematical Finance group sits within the Department of Mathematics in Imperial College London and is one of the largest in the world. The research carried out by its members span a wide range of areas in the fields of stochastic analysis, probability, machine learning and statistics. Many research-related events are organised throughout the year, including seminars, conferences, colloquia, providing a deep understanding of the cutting-edge research in the area of Mathematical Finance. Most seminars and conferences are free to attend, and registration may or may not be required. You are more than welcome, and encouraged, to attend them. <http://www.imperial.ac.uk/mathematics/seminars/>

The teaching faculty of the MSc in Mathematics and Finance consists of permanent members of the Mathematical Finance group as well as visiting lecturers, leaders in their fields, both in academia and from the financial industry.

Teaching faculty of the MSc in Mathematics and Finance

Dr Paul Bilokon (Visiting Lecturer, CEO Thalesians)

Email: paul.bilokon01@imperial.ac.uk

Webpage: www.linkedin.com/in/bilokon/

Research Interests: machine learning, reinforcement learning, stochastic filtering, algorithmic and high-frequency trading, scientific and quantum computing

Dr Ofelia Bonesini (Research Fellow in Mathematical Finance)

Email: o.bonesini@imperial.ac.uk

Webpage: <https://it.linkedin.com/in/ofelia-bonesini-4b5515221>

Research Interests: rough volatility, mean fields, mathematical finance

Prof. Damiano Brigo (Professor in Mathematical Finance)

Email: damiano.brigo@imperial.ac.uk

Webpage: www.imperial.ac.uk/people/damiano.brigo

Research Interests: valuation and pricing, risk measurement, liquidity risk, credit and default modelling, counterparty risk, stochastic differential geometry, nonlinear filtering

Dr Jordan Cambe (Visiting Lecturer)

Webpage: <https://www.linkedin.com/in/jordan-cambe/>

Research Interests: Graph theory, complex financial networks, payment systems

Dr Thomas Cass (Professor in Mathematical Finance)

Email: thomas.cass@imperial.ac.uk

Webpage: www.imperial.ac.uk/people/thomas.cass

Research Interests: rough paths, Gaussian processes, Malliavin calculus, McKean-Vlasov-type models for large populations of interacting agents, stochastic differential geometry

Dr Ioannis Gasteratos (Research Fellow in Mathematical Finance)

Email: i.gasteratos@imperial.ac.uk

Research Interests: weak convergence, Stochastic PDEs, importance sampling

Dr Lukas Gonon (Senior Lecturer in Mathematics & Machine Learning at Imperial-X)

Email: l.gonon@imperial.ac.uk

Webpage: <https://www.imperial.ac.uk/people/l.gonon>

Research Interests: neural networks, asset pricing, reservoir computing

Dr David Itkin (Chapman Fellow in Mathematical Finance)

Email: d.itkin@imperial.ac.uk

Webpage: www.math.cmu.edu/~ditkin/index.html

Research Interests: stochastic portfolio theory, robust finance, particle systems, ergodic properties of diffusions

Prof. Antoine (Jack) Jacquier (Professor in Mathematical Finance)

Email: a.jacquier@imperial.ac.uk

Webpage: <http://www.imperial.ac.uk/people/a.jacquier>

Research Interests: asymptotics, volatility modelling, Math Finance, quantum computing

Dr Alexei Kondratyev (Visiting Professor, Quantitative R&D Lead at ADIA)

Email: a.kondratyev@imperial.ac.uk

Webpage: www.linkedin.com/in/alexei-kondratyev-5294bb/

Research Interests: quantum computing, portfolio optimisation

Dr Vladimir Lucic (Visiting Professor)

Email: v.lucic@imperial.ac.uk

Webpage: www.linkedin.com/in/vladimir-lucic-9b572290/

Research Interests: models for alternative risk premia

Dr Richard Martin (Visiting Professor)

Email: richard.martin1@imperial.ac.uk

Webpage: www.linkedin.com/in/richard-martin2/

Dr Aitor Muguruza (Visiting Lecturer)

Email: aitor.muguruza-gonzalez15@imperial.ac.uk

Webpage: <https://www.kcm.ai/our-team/aitor-muguruza>

Research Interests: machine learning, mathematical finance, option pricing, AI

Dr Johannes Muhle-Karbe (Head and Chair of Mathematical Finance)

Email: j.muhle-karbe@imperial.ac.uk

Webpage: www.ma.imperial.ac.uk/~jmuhleka/

Research Interests: market microstructure, asset pricing, transaction costs, price impact

Dr Eyal Neuman (Reader in Mathematical Finance)

Email: e.neumann@imperial.ac.uk

Webpage: <http://eyaln13.wixsite.com/eyal-neuman>

Research Interests: probability and stochastic processes, interacting particle systems, stochastic partial differential equations, mathematical finance

Dr Vladimir Piterbarg (Visiting Professor, Head of Quantitative Analytics and Quantitative Development at NatWest Markets)

Webpage: www.linkedin.com/in/piterbarg/

Research Interests: interest rates, quantitative analytics

Prof. Mathieu Rosenbaum (Visiting Professor, Professor of Mathematics, Ecole Polytechnique, Paris)

Email: mathieu.rosenbaum@polytechnique.edu

Webpage: <http://www.cmap.polytechnique.fr/~rosenbaum/>

Research Interests: high-frequency trading, market microstructure, stochastic volatility

Dr Cris Salvi (Lecturer in Mathematics & Machine Learning at Imperial-X)

Email: c.salvi@imperial.ac.uk

Webpage: <https://www.imperial.ac.uk/people/c.salvi>

Research Interests: rough paths, deep learning, kernel methods

Dr Yonatan Shadmi (Chapman Fellow in Mathematical Finance)

Email: shadmi@campus.technion.ac.il

Webpage: <https://arxiv.org/search/math?searchtype=author&query=Shadmi%2C+Y>

Research Interests: fluid limits, stochastic analysis

Dr Pietro Siorpaes (Lecturer in Mathematical Finance)

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Webpage: www.imperial.ac.uk/people/p.siorpaes

Research Interests: math finance, optimal investment, utility pricing, stochastic calculus

Dr Wolfgang Stockinger (Chapman Fellow in Mathematical Finance)

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Webpage: <https://www.imperial.ac.uk/people/d.itkin>

Research Interests: robust finance, stochastic portfolio theory, particle systems

Dr Kevin Webster (Visiting Reader in Mathematical Finance)

Webpage: <https://www.linkedin.com/in/kevin-webster-17a98421/>

Research Interest: high-dimensional statistics, high-frequency trading, alpha models

Dr Yufei Zhang (Senior Lecturer in Mathematical Finance)

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Webpage: <https://yufei-zhang.github.io/>

Research Interests: machine learning, stochastic control and games, mathematical finance

Prof. Harry Zheng (Professor of Mathematical Finance)

Email: h.zheng@imperial.ac.uk

Webpage: <http://www.imperial.ac.uk/people/h.zheng>

Research Interests: stochastic control, optimisation, financial mathematics

Personal Tutors

Each student is assigned a personal tutor from the Mathematical Finance Section, with whom a meeting is arranged during the first week of term. The tutor is the first point of contact and offers advice regarding module selection and other matters as needed. Your personal tutor is likely to be one of the people you may ask later for reference letters; it is therefore advisable that they get to know you, and you are encouraged to keep in touch with them while enrolled in the MSc and to keep them informed about any factors, such as illness, that may affect performance. Communication between a student and his/her personal tutor (and potentially the Course Directors) is treated in full confidentiality. The personal tutor is not responsible for administrative issues, and for any such matter, the MSc Programme Administrator, will be able to help you.

Should you have any difficulties contacting your personal tutor, you are strongly encouraged to contact the MSc Course Directors.

The MSc: inside out

Blackboard

Most of the information you will need during the year, from lecture notes, courseworks, past exams, to timetables and special events are available on Blackboard: <https://bb.imperial.ac.uk>. A calendar with all events and timetables can be found on your personal Blackboard.

The Alumni network

Part of the strength of the programme, apart from its academic contents, is its large network of alumni since its inception in 2000. The Imperial College Mathematics and Finance MSc Alumni Group has a LinkedIn group dedicated to alumni of the programme, and advertises job positions and events

<https://www.imperial.ac.uk/mathematics/postgraduate/msc/mathematical-finance/alumni/>

Several events will be organised throughout the year to allow you to expand your network. More information will be given in due time.

Meeting with Practitioners

Compulsory weekly meetings with practitioners are organised to familiarise yourself with the many sides of the financial industry, from quantitative research, to hedge funds, risk

management, regulators, software development. They will also help you find a project for the end of the year. You are strongly encouraged to be proactive during those lectures.

Programme Structure

To qualify for the award of a MSc degree in Mathematics and Finance, you must have:

- accumulated credit to the value of no fewer than 90 ECTS with all 7 compulsory modules and at least 5 electives,
- achieved a passing mark of 50% in all compulsory modules,
- achieved a weighted average mark of 50% in all (compulsory + elective) modules taken,
- achieved a passing mark of 50% in at least 5 elective modules,
- achieved the pass mark of 50% on the final Research Project. The Research Project cannot be compensated.

You may be compensated (mark between 40 and 49.99) in a maximum of 15 ECTS, combining compulsory and elective modules.

Autumn Term 2 October – 15 December 2023

Week 1 Induction Week: There is a refresher, non-assessed introductory short module:

- Refresher in Mathematical (Dr Gasteratos)

Weeks 2-11: The following five compulsory modules must be taken:

- Fundamentals of Option Pricing (Dr Siorpaes) **MATH70107**
- Statistical Methods for Finance (Dr Salvi) **MATH70108**
- Stochastic Processes (Dr Neuman) **MATH70109**
- Quantitative Risk Management (Dr Gonon) **MATH70110**
- Computing for Finance - Python (Dr Muguruza) **MATH70112** (compulsory/combined credit with C++): **(20 hours - Weeks 2-11)**

Elective modules available in the Autumn term: Four elective modules (each 15 hours):

- Data Science for Fintech, Regtech, Suptech (Dr Cambe) **MATH70117 (Weeks 2-6)**
- Quantum Computing (Prof. Jacquier, Dr Kondratyev) **MATH70118 (Weeks 7-11)**
- Deep Learning (Dr Gonon) **MATH70116 (Weeks 2-6)**
- Portfolio Management (Dr Bonesini) **MATH70129 (Weeks 7-11)**

Spring Term 6 January–22 March 2024

Week 1 Examinations on the Autumn Term modules.

Weeks 2-11: You must take the following three compulsory modules:

- Computing for Finance- C++ (Dr Bilokon) **MATH70112**
- Interest Rate Models with Credit Risk, Collateral, Funding Liquidity Risk and Multiple Curves (Prof. Brigo) **MATH70111**
- Simulation Methods for Finance (Dr Zhang) **MATH70113**

In addition, the following elective modules (each 15 hours) are available:

- Numerical Methods in Finance (Dr Stockinger) **MATH70119 (Weeks 2-6)**
- Convex Optimisation (Dr Shadmi) **MATH70122 (Weeks 2-6)**

- Advances in Machine Learning (Dr Bilokon) **MATH70120 (Weeks 2-6)**
- Topics in Derivatives Pricing (Dr Piterbarg) **MATH70121 (Weeks 2-6)**
- Rough Paths and Signatures in Machine Learning (Dr Salvi) **MATH70124 (Weeks 7-11)**
- Market Microstructure (Prof. Rosenbaum) **MATH70125 (Weeks 2-6)**
- Stochastic Control in Finance (Dr Itkin) **MATH70126 (Weeks 2-6)**
- Quantitative Trading and Price Impact (Prof. Muhle-Karbe, Dr Webster) **MATH70127 (Weeks 7-11)**
- Topics in Quantitative Finance (Prof. Jacquier, Dr Lucic) **MATH70128 (Weeks 7-11)**

Summer Term (for PGT) 27 April–30 September 2024

Weeks 1-2 Examinations of the Spring Term modules.

Week 3 onwards Project work begins.

Thesis submission deadline: no later than 16:00, 3 September 2024

Notes:

1. You must take examinations in all seven compulsory modules and in five elective modules. You will be asked to complete a form stating what elective examinations you plan to take.
2. Examination arrangements vary. Each module is assessed by a three-hour written examination for compulsory modules and one and a half hours for elective modules in the beginning of the following term. In most cases, a component of assessed coursework, or a small project to be completed in a limited time, will also be required. The lecturer will specify early in the term exactly what the examination arrangements will be. Previous examination papers are usually available.
3. ECTS credits: The lecture modules taken together are worth 75 ECTS (7.5 ECTS for each compulsory module (except for Computing for Finance is 5 ECTS) and 5 ECTS for each elective module), and the project is 15 ECTS.

Module Descriptions

Compulsory Modules

Fundamentals of Option Pricing (Dr Siorpaes) MATH70107

Option pricing is a fundamental part of Mathematical Finance. The module will cover both financial and mathematical concepts, such as:

- Financial markets, forwards, options and financial derivatives
- Self-financing portfolios and non-anticipative strategies
- Absence of arbitrage, the domination property and law of one price
- Complete and incomplete markets, pricing by replication
- Change of measure and the Radon-Nikodym theorem
- Linear programming, equivalent martingale measures, the fundamental theorems of asset pricing, the risk-neutral pricing formula
- Change of numeraire
- Conditional expectation: definition, properties, and computation
- Martingales and Markov processes
- Brownian motion and the Black-Scholes model

- Why Riemann integration and ordinary calculus do not apply to Brownian motion
- The stochastic integral, semimartingales and their canonical decomposition, quadratic variation, Ito's formula
- Hedging derivatives in the Black-Scholes model, delta-hedging
- The Black-Scholes PDE, the heat equation, and the Feynman-Kac formula
- Girsanov's theorem, the martingale representation theorem, Levy's characterisation of Brownian motion

Stochastic Processes (Dr Neuman) MATH70109

This module introduces probability theory, measure theory, stochastic processes and the basic tools from stochastic analysis to provide the mathematical foundations for option pricing theory. It includes an intermediate introduction to axiomatic probability theory and measure theory, explaining notions like probability spaces, measures, measurable functions, integration with respect to measures, convergence concepts for random variables, joint distributions, independence and conditional expectations. It studies stochastic processes in discrete and continuous time; mainly the random walk, Brownian motion, and their properties. These in turn involve notions like the quadratic variation, the reflection principle, the Markov property and the martingale property. We will cover the stochastic Ito integral, the Ito formula, and their mathematical applications; for example, stochastic differential equations and some references to partial differential equations.

Quantitative Risk Management (Dr Gonon) MATH70110

This module introduces the key concepts and methods of quantitative risk management, with an emphasis on market risk and volatility. We endeavour to cover the following topics:

- Risk management and stylised facts: taxonomy of risks, the regulatory framework, overview of quantitative risk management, stylised facts of asset returns.
- Basic concepts of risk management: risk factors, loss distributions, risk measures (including value-at-risk and expected shortfall), historical simulation, Monte Carlo simulation, backtesting.
- Univariate time series modelling: ARMA and GARCH models, estimation and forecasting, applications to risk measures.
- Heavy-tailed distributions and extreme value theory: characterisations of heavy-tailed distributions and examples, the distribution of maxima, modelling of threshold exceedances, applications to risk measures.
- Multivariate time series and covariance modelling: multivariate time series models, multivariate GARCH models, applications to equity portfolio risk.
- Copulas and dependence modelling: basic properties of copulas, classification of copulas with examples, measuring dependence, estimation of copulas, applications to portfolio and credit risk.
- Market microstructure and high-frequency data: market microstructure primer, market liquidity risk, volatility estimation and forecasting using high-frequency data, applications to risk measures.

Statistical Methods for Finance (Dr Salvi) MATH97108

The financial industry has changed dramatically over the past few years, and the new regulations imposed to banks require more statistical knowledge. The aim of this compulsory module is to reflect these changes, and to make students up to date with the current needs of the financial sector. This course is concerned with essential statistical methods for the analysis of financial data. Topics covered include regression methods (including ordinary and generalised least squares), Random matrices, statistical tests Bayesian analysis, parametric estimation methods (including maximum likelihood estimation and classical asymptotic theory), and non-parametric estimation methods. The various methods are illustrated by applications in Finance and tests on real data.

Computing for Finance – MATH70112

Part 1

Python (Dr Muguruza)

Python has become a key programming language today, due to its versatility, open-source nature and wide range of capabilities, from big data management to numerical analysis and visualisation tools. In and in banks. Python is now a fundamental tool to quantitative analysis, and a pre-requisite for job applications. The goal of this module is to introduce the key concepts of the Python programming language and its main characteristics, in particular:

- Programming features: Functional Programming to Object-oriented programming
- Big data analysis: Pandas, Dask,
- Statistical tools and libraries
- Web-scraping
- Visualisation tools

All these concepts will be illustrated with real data and in the context of Quantitative Finance.

Part 2

C++: Object oriented programming (Dr Bilokon)

The module gives an introduction to object-oriented programming in C++. In contrast to structured programming, where a programming task is simply split into smaller parts, which are then coded separately, the essence of object-oriented programming is to decompose a problem into related subgroups, where each subgroup is self-contained and contains its own instructions as well as the data that relates to it. Starting from the simple concept of a class that contains both data and methods relating to that data, the module will cover all the major features of object-oriented programming, e.g. encapsulation, inheritance and polymorphism. To this end, the module will address operator overloading, virtual functions and templates.

Interest rate models with credit risk, collateral, funding liquidity risk, multiple curves (Prof. Brigo) MATH70111

This is a module that deals with the theory and practice of the term structure of interest rates when including also credit risk, funding liquidity costs, collateral modelling and multiple curves. The paradigm of derivatives valuation is shifting from complex payouts designed on simple single asset class risks to simple products that are now managed by analysing previously neglected complex and interconnected nonlinear risks. The module starts by briefly putting derivatives valuation into context, in connection also with the onset of the 2007-2008 crisis that prompted many of the changes we are seeing now. The module then moves to classic

interest rate models based on a risk-free rate, on classical instantaneous forward rates, and on default free LIBOR and SWAP rates, also in presence of volatility smile. Several families of models are introduced and studied in detail, with an eye both to a rigorous theoretical derivation and to practical implementation and calibration. Following the classical part, the increasingly important issues of multiple discount curves, credit risk, credit and debit valuation adjustments, collateral modelling, gap risk and funding liquidity costs are analysed quantitatively. The related notions of CVA, DVA and FVA are analysed and criticised in detail, and their significance for the general derivatives valuation paradigm is discussed. The specific case of trading through central clearing (CCPs) is hinted at. Finally, an analysis of Risk measures for interest rate derivatives products is presented, with a case study highlighting the role of correlation and dependence in Risk measurement.

Simulation Methods for Finance (Prof. Zhang) MATH70113

This module is an introduction to simulation methods in finance and more generally to probabilistic numerical methods for PDEs. It starts with discussion of random number generators, statistical tests and moves on to cover numerical schemes for solving Stochastic Differential Equations: the Euler, Milstein and certain higher-order schemes. Properties of weak and strong convergence, consistency and numerical stability are established. It then discusses variance reduction techniques and estimation of sensitivities. The module will be concluded by studying a numerical method for American Options and non-linear PDEs, if time permits.

Elective modules: Electives are grouped in three indicative streams:

- **Derivatives Pricing Stream:** Topics in Derivatives Pricing, Selected Topics in Quantitative Finance, Numerical Methods in Finance
- **Market Microstructure Stream:** Convex Optimisation, Stochastic Control in Finance, Quantitative Trading and Price Impact, Market Microstructure, Portfolio Management
- **Machine Learning in Finance Stream:** Advances in Machine Learning, Rough Paths and Signatures in Machine Learning, Deep Learning, Data Science for Fintech, Regtech and Suptech: Methodological Foundations and Key Applications, Quantum Computing in Finance

Topics in Derivatives Pricing (Dr Piterbarg) MATH70121

Derivatives pricing is the compulsory area quantitative finance which is relevant to various roles in the industry such as quant, trader, structurer and risk manager. The goal of this module is to introduce the required theoretical tools to understand the pricing and hedging of different financial derivatives. While the exposition of the topics will be done in a theoretical manner, the module will also emphasise on the practical aspects of derivatives trading (pricing of structured products traded in real life, backtesting of hedging strategies via numerical studies).

Selected Topics in Quantitative Finance (Prof. Jacquier and Dr Lucic) MATH70128

Option markets are extremely diverse, spanning several different asset classes and many pricing and hedging strategies. The goal of this module is to complement the other option-flavoured modules, focusing on the specificities of Foreign Exchange and Fixed Income markets. For each of these markets, the module will study their specific characteristics and evolutions, develop the technical tools needed to understand the pricing of derivatives, and explain how to set up trading and hedging strategies therein. A strong emphasis will be given on the actual implementation of the models and their calibration to real data.

Numerical Methods for Finance (Dr Stockinger) MATH70119

The goal of this module is to complement the Compulsory module on Simulation Methods to investigate other techniques that are widely spread among the financial industry. We shall investigate two popular techniques, namely PDE methods and Fourier methods.

For each approach, we will start with a theoretical framework, explaining how an option pricing problem can be turned into a dynamic programming problem, a PDE or a Fourier integration. We shall then focus on the numerical methods to solve these problems. Practical implementations on real models/data will be emphasised.

Convex Optimisation (Dr Shadmi) MATH70122

The module covers both the theoretical underpinnings of convex optimisation and its applications to important problems in mathematical finance. A brief outline of the course reads as follows:

- Fundamental properties of convex sets and convex functions
- The basics of convex optimisation with special emphasis on duality theory
- Markowitz portfolio theory and the CAPM model
- Expected utility maximisation and no arbitrage
- Convexity in continuous time hedging

Stochastic Control in Finance (Dr Itkin) MATH7126

Many problems in mathematical finance (and in other areas) are essentially optimisation problems subject to random perturbations, where some controls play the role of a performance criterion. The goal of this module is to bring the main concepts and techniques from dynamic stochastic optimisation and stochastic control theory to the realm of quantitative finance. It will therefore naturally start with a theoretical part focussing on required elements of stochastic analysis, and with a motivation through several examples of control problems in Finance. We will then turn to the classical PDE approach of dynamic programming, including controlled diffusion processes, dynamic programming principle, the Hamilton-Jacobi-Bellman equation and its verification theorem. We will finally see how to derive and solve dynamic programming equations for various financial problems such as the Merton portfolio problem, pricing under transaction costs, super-replication with portfolio constraints, and target reachability problems.

Quantitative Trading and Price Impact (Prof. Muhle-Karbe and Dr Webster) MATH7127

The increase in computer power over the last decades has given rise to prices being quoted and stocks being traded at an ever-increasing pace. Since humans are not able to place orders at this speed, algorithms have replaced classical traders to optimise portfolios and investments. In this module, we will study specificities of this market, and in particular, we shall develop the mathematical tools required to develop such algorithms in this high-frequency framework. The module will start with a short review of stochastic optimal control, which forms the mathematical background. We shall then move on to study optimal execution, namely how and when to place buy/sell orders in this market, both assuming continuous trading and in the context of limit and market orders. The last part of the module will be dedicated to the concept of market making and statistical arbitrage in high-frequency settings.

Market Microstructure (Prof. Rosenbaum) MATH70125

The goal of the module is to develop thorough understanding of how form, information is aggregated, and trades occur in financial markets. The main market types will be described as well as traders' main motives for why they trade. Market manipulation and high-frequency trading strategies have received a lot of attention in the press recently, so the module will illustrate them and examine recent developments in regulations that aim to limit them. Liquidity is a key theme in market microstructure, and the students will learn how to measure it and to recognise the recent increase in liquidity fragmentation and hidden, "dark" liquidity. The Flash Crash of 6 May 2010 will be analysed as a case study of sudden loss of liquidity.

Portfolio Management (Dr Bonesini) MATH7129

This module gives students a foundation for quantitative portfolio management and for understanding market price determination. Key concepts include risk measurement, risk-reward trade-offs, portfolio optimisation, benchmarking, equilibrium asset pricing, market efficiency, and pricing anomalies. Specific portfolio management tools include mean-variance optimisation, CAPM and APT asset pricing, factor models (e.g., Fama-French), momentum strategies, and performance evaluation. The course will present essential theories and formulas and will also review important institutional and empirical facts about equity, bond, and commodity markets.

Advances in Machine Learning (Dr Bilokon) MATH70120

The module introduces the latest advances in machine learning. We start with reinforcement learning and demonstrate how it can be combined with neural networks in deep reinforcement learning, which has achieved spectacular results in recent years, such as outplaying the human champion at Go. We also demonstrate how advanced neural networks and tree-based methods, such as decision trees and random forests, can be used for forecasting financial time series and generating alpha. We explain how these advances are related to Bayesian methods, such as particle filtering and Markov chain Monte Carlo. We apply these methods to set up a profitable algorithmic trading venture in cryptocurrencies using Python and kdb+/q (a top technology for electronic trading) along the way.

Rough Paths and Signatures in Machine Learning (Dr Salvi) MATH70124

Rough path theory was developed in the 1990s in order to understand the response of a nonlinear system to highly oscillatory input signal. A key element of this theory so-called signature transform which gives an economical way to represent and extract information from high dimensional ordered data, such as a complex financial time series. Over the last decade it has been used to achieve state-of-the-art outcomes in several data science challenges. This short module will give an overview of the mathematical properties of the signature, explain how it can be used as a feature set in machine learning application with a particular emphasis on problems inspired by finance. Topics covered will include:

- Key mathematical properties of the signature transform
- The use of the signatures as a feature set in machine learning. Two examples will be developed in detail to illustrate this: (a) learning a solution to a stochastic differential equation, and (b) learning a high-frequency trading strategy. Computational methods. Other examples will be explored in the coursework and as time permits.
- Recovering information about a data stream from the signature, the asymptotic analysis of the signature.
- Signatures and kernel methods. Using signatures in neural networks.

Deep Learning (Dr Gonon) MATH70116

Deep learning is subfield of Machine Learning that applies deep neural nets to represent and predict complex data. It has recently revolutionised several areas such as image recognition and artificial intelligence and it is currently gaining traction also in the financial industry. The module will first introduce the multi-layer neural nets and explain their universal approximation property. Subsequently, the module proceeds to the training of neural nets, starting from the derivation of the gradient of a neural net and its evaluation through backpropagation, culminating in the stochastic gradient descent and related modern optimisation methods. Techniques to avoid overfitting in training are also elucidated. The remainder of the module focuses on the practical implementation and training of deep neural nets using Keras and TensorFlow, with examples in computational and statistical finance. Time permitting, elements of recurrent neural nets are also sketched.

Data Science for Fintech, Regtech and Suptech: Methodological Foundations and Key Applications (Dr Cambe) MATH70117

Advances and innovations in computational technology have allowed data scientists to explore and understand increasingly complex financial problems. However, emerging opportunities require financial professionals to update their analytical skills and embrace new technologies, methods, and data sources. The goal of this module is to provide students with an interest in quantitative finance an overview of the evolution of data science in the context of Fintech, RegTech and Suptech, as well as to equip them with the skills to apply new analytical techniques to real world challenges. The emphasis will be on practical applications; and to this end, the module will be led by industry experts and include regular hands-on exercises involving the use of advanced data analytics.

Quantum Computing in Finance (Prof. Jacquier and Dr Kondratyev) MATH70118

Quantitative Finance is a rapidly changing environment, and the financial industry is always on the lookout for new techniques and new technologies able to harness the rise of big data and the availability of computing power. Quantum computing, though not a recent field, has gained huge popularity in the past few years with the development of small-scale quantum computers and quantum annealers. These have in turn pushed for new algorithms, hybrid between classical and quantum, and tailored for such computers. The financial industry is now looking at such developments and there is a common agreement that this will be one of the leading advances in the coming decade.

The goal of this Elective (so far not given in any similar MSc programmes around the world) is to introduce students to this new technology and these new algorithms and show them how they can be used to solve financial problems, in particular

- For portfolio optimisation,
- For data generation,
- For Machine learning and neural network.

The module will strike a fair balance between theoretical concepts of Quantum Computing, their implementation (in Python using IBM's Qiskit framework) and their application to real financial problems.

Placements and project

The College defines a placement as:

“work experience, assessed project work, a period of course-based study or a period of research (for which academic credit is awarded and/or where the student remains subject to College student regulations during the relevant period) and where there is a transfer of direct supervision of the student to a third party (i.e. where a member of staff at the third party acts as the day-to-day supervisor/manager) for a period of two weeks or more.”

Academic departments are responsible for managing any study or work placement which forms part of your degree programme. It is expected that you will contribute to the process of planning your placement.

For guidance on this, see the College’s Placement and Learning Policy and associated good practice:

 www.imperial.ac.uk/about/governance/academic-governance/academic-policy/placement-learning

Your Departmental Placement Coordinators:

 Mrs Rula Murtada

 Prof. Antoine Jacquier

The Careers Service is available to provide students with additional support in sourcing placement opportunities and preparing to apply for placement opportunities:

 www.imperial.ac.uk/careers/jobs-and-experience/work-experience/

For general information on undertaking a placement visit the Placements website:

 www.imperial.ac.uk/placements

If you are considering/planning a placement outside the UK, you should also refer to the Placement Abroad Handbook:

 www.imperial.ac.uk/placements/information-for-imperial-college-students

Overview

The project is a substantial component of the MSc in Mathematics and Finance, occupying up to four months of the MSc programme. It is a piece of original work undertaken by you under the direction of an academic project supervisor and in most cases also an external supervisor. Our intention is that most projects will be carried out in association with a bank, finance house, hedge fund, consultancy, or systems provider in the finance industry, and we endeavour to arrange suitable placements. The project may be an ‘internship’, where you work at the bank full time, or a collaborative arrangement where you work in the College and visit the company on a regular basis to discuss the project. In either case you will be assigned an academic project supervisor who will be a member of staff of the Mathematical Finance Section.

Arranging placements is a complex process where we are ultimately dependent on the goodwill of our industrial partners and on market conditions. Students must also bear in mind that they must pass companies’ own assessment processes before being offered a placement. It cannot be guaranteed that everybody will get exactly what he or she wants, but every effort

will be made to achieve reasonably satisfactory arrangements. If you have your own contacts in the industry, or specific ideas as to your project topic, you should discuss these with your tutor at the earliest possible time, so that these can be taken into consideration.

More guidance will be made available to you during the year. Below are some of the methods in which we allocate placements.

Company presentations

From October there will be weekly lectures of Careers in Quantitative Finance series given by our industry partners. These events provide an opportunity for students to find out more about companies and offer the chance to network with employees in an informal environment. You will be invited to apply to their internship programmes after attending the events.

CV Book

Before starting the course, you will be asked to provide us with your CVs. These are collated into a CV book which is distributed to our industry partners, who may get in touch with students directly with internship opportunities.

Student referral

While most project allocations take place between February and April, it is strongly recommended that students apply as early as October since banks tend to start interviewing then. Opportunities will be advertised, and students will be invited to express an interest in applying. The Programme team will shortlist students based on how well the specified criteria is met. Companies then select who they wish to invite for interview. Alongside our referrals, we also expect students to be proactive in applying for placements and finding their own opportunities. Only MSc students who have achieved an acceptable level of academic competence will be offered as candidates to an external sponsor.

Placement requirements

When you seek your own placement, the duration should be at least 10 weeks and the topic of project should be quantitative in nature. You may also choose to pursue an internship or job opportunity incompatible with an MSc project, in which case we will offer you an internal project with a member of academic staff at Imperial. We, however, urge you to discuss this first with your course adviser or Programme Director, as successfully combining an MSc project with an unrelated internship tends to be challenging.

Project theses must be submitted electronically as a PDF on Blackboard by **16.00 on 3 September 2024**. The length of the thesis is usually around 50 typed pages, and it must be typed in LaTeX following a provided template.

The Careers Service is available to provide students with additional support in sourcing placement opportunities and preparing to apply for placement opportunities: <http://www.imperial.ac.uk/careers/opportunities/internships/>

For general information on undertaking a placement visit the Placements website:

 www.imperial.ac.uk/placements

If you are considering/planning a placement outside the UK, you should also refer to the Placement Abroad Handbook:

 www.imperial.ac.uk/placements/information-for-imperial-college-students

MSc Prizes

The Stochastic Analysis Prize is awarded to the best performance in stochastic analysis. The Bayforest Prize is awarded for the best performing student in machine learning. Furthermore, we have a strong track record of [Natixis Prize](#) awards.

Imperial Mobile app

Don't forget to download the free Imperial Mobile app for access to College information and services anytime, anywhere, including your programme timetable, College emails and a library catalogue search tool.

 www.imperial.ac.uk/imperialmobile

Welcome to Imperial app

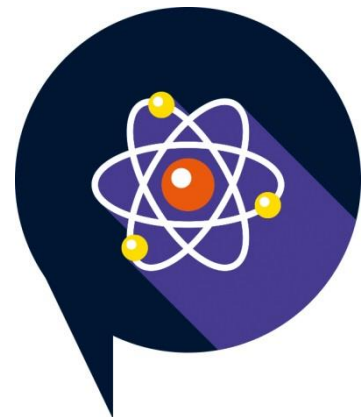
The College has a Welcome to Imperial app which contains important information about campus operations, aspects of student life, a schedule of welcome activities and information about life in halls. All new students should download this guide to ensure they have the most up to date information and event schedule for the start of term.

You can download the App from the Apple or Google App Stores.

Imperial Success Guide

The Imperial Success Guide is an online resource with advice and tips on the transition to Master's level study. More than just a study guide, it is packed with advice created especially for Imperial Master's students, including information on support, health and well-being and ideas to help you make the most of London.

 www.imperial.ac.uk/success-guide



3. Assessment

Within your programme of study you will have different types of assessment which may include, coursework, examinations, timed remote assessment, presentations, labs or other forms of practical assessment.

Degree Classification

Pass

A student must:

- Achieve a mark of 50% on all modules offered.
- Achieve a passing mark of 50% on at least 10 modules.
- Achieve an overall average mark greater than or equal to 50% but less than 60%.
- You may be compensated (mark between 40 and 49.99) in a maximum of 15 ECTS, combining compulsory and elective modules.

Merit

A student must:

- Pass all taught modules offered as described above, at the first attempt.
- Achieve an overall average of 60% but less than 70% in the taught component.
- Achieve a mark of 60% or more for the project thesis.

Distinction

A student must:

- Pass all taught modules offered as described above, at the first attempt.
- Achieve an overall average of 70% or more in the taught component.
- Achieve a mark of 70% or more for the project thesis.

Classification of Postgraduate Taught Awards

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

1. Distinction: The student has achieved an overall weighted average of 70% or above across the programme.
2. Merit: The student has achieved an overall weighted average of above 60% but less than 70%.
3. Pass: The student has achieved an overall weighted average of 50% but less than 60%.

Exit Award: award of a Postgraduate Diploma (PG Dip)

To qualify for the award of the PG Dip in Mathematics and Finance you must have accumulated credit to the value of no fewer than 60 credits at Level 7, including at most 10 credits as Compensated Pass from compulsory or elective modules. The Research Project is not a compulsory module in this programme, but its credit cannot be regarded as a Compensated Pass.

Overall weighted averages 0.5% from the degree borderlines will be automatically rounded up in accordance with item 13.19 in the 2021-2022 regulations. The board of examiners will consider other borderline cases, as they are defined in items 13.20–13.22 of the Regulations for Taught Programmes of Study 2021-2022.

Notes:

Taking an extra elective – please read carefully

To meet the requirements of the degree, students must take five elective modules. Students are permitted to take an exam for an extra elective (so six electives in total) and the elective with the lowest mark will not be counted when deciding the final degree award. Before you decide to take an extra elective, please keep in mind the following:

- The extra module will be listed on your transcript, regardless of what grade you get. It will be marked as N/A whilst the modules that do count towards your degree will be marked as Pass/Fail.
- However, if you simply do not turn up to an exam and there are no mitigating circumstances to explain your absence, that module will be marked as a **fail** on your transcript, though it will not count towards the calculation of your final degree. There will be a “grace period” where you will be permitted to change your mind about which electives you want to take without penalty. If after the end of the grace period you decide to drop an elective or if you do not turn up to the exam without prior explanation, you will be regarded as having failed that module. The module will be marked as a 0 on your transcript and it will be marked as fail.
- The MSc in Mathematics and Finance is a difficult programme already, with students having to take 12 modules. Think carefully whether you will have the time to prepare for an extra module.
- A lot of preparation is required to organise the exams and if students continually change their minds this wastes a lot of time. If you are not sure which modules to take, seek advice from your lecturer, course adviser, the Programme Director or your peers.

Assessed coursework must be submitted by the announced deadline. See *Late Submission section*.

If you do not achieve the above criteria, you cannot receive the MSc degree at the end of the academic year, but you have the option to retake examinations (and/or the project thesis) at the next available opportunity, only once. You can only retake examinations you have failed, and—at the discretion of the lecturer—any coursework satisfactorily completed the first time may be carried forward. No fees, apart from an examination re-entry fee, are payable in September resits (for more information see the website <http://www.imperial.ac.uk/student-records-and-data/for-current-students/undergraduate-and-taught-postgraduate/exams-assessments-and-regulations/resitting-examinations/>). Marks for resit examinations are capped at the pass mark (50%).

Interruption of studies: It sometimes happens that a student’s studies are interrupted for personal reasons (illness, etc.). Another thing that has occasionally happened in the past is that a student is hired by a company and obliged to start work before the completion of the MSc (e.g. to participate in the company’s induction training programme). If something of this sort happens to you tell the MSc Programme Administrator straight away. It is important, for anything more than a brief absence, to apply to the College via My Imperial for an “interruption

of studies”, which essentially “stops the clock” while you are away. This interruption cannot exceed two years. See also: <https://www.imperial.ac.uk/students/success-guide/pgt/getting-started/breaks-in-study/>

Mitigating circumstances (e.g. illness) can affect your academic performance, examinations and projects; if you feel they should be taken into consideration, you should inform the Student Experience Coordinator as soon as possible who will guide you on the process. For more information see Mitigating Circumstances section.

Award and classification: they will be decided mid to late October 2024 by the examination board, which has the final authority in these matters. The board will also consider borderline cases and take into account mitigating circumstances. The final results are released by Registry by mid-November. During the year you will receive indications of your results in the form of letter grades, which are provisional and still subject to confirmation by the examination board in October.

The coding used is A+=85+, A=70-84, B=60-69, C=50-59, D=40-49, F=39-0.

Please note that D mark is considered condoned pass (CP). As such where a student has been awarded a compensated pass, they cannot re-attempt that module unless they are required to in certain situations by the programme. 15 ECTS CP are allowed to graduate. The mark achieved will be recorded against the module and used for the calculation of the year and programme weighted averages,

[https://www.imperial.ac.uk/media/imperial-college/administration-and-support-services/registry/academic-governance/public/regulations/2022x2f23/Regulations for Taught Programmes 2022 23.pdf](https://www.imperial.ac.uk/media/imperial-college/administration-and-support-services/registry/academic-governance/public/regulations/2022x2f23/Regulations%20for%20Taught%20Programmes%202022%2023.pdf)

Academic and Examination regulations can be found at

<https://www.imperial.ac.uk/about/governance/academic-governance/regulations/>

Marking criteria MSc thesis

A thesis in the distinction range (70-100) is a sustained, coherent contribution that:

- demonstrates broad understanding of the subject
- demonstrates a high level of independent and/or critical thinking
- demonstrates evidence of effective synthesis of ideas
- demonstrates thorough investigative research, high level problem-solving and creative performance
- demonstrates the ability to critically evaluate one's own research in the context of existing literature
- may demonstrate originality in topic, method, theoretical development, creative practice or findings and conclusions (this would be expected at A+ level)
- may include material of publishable quality (this would be expected at A+ level)
- is presented to a consistently high standard

More specifically, the following subdivision applies:

- 90-100: written to publishable standards – contains good original work, with a significant result, explained very well, with very good account of references to existing work. Presentation excellent.
- 80-89: written to almost publishable standard – containing good original work, with interesting well-explained results, with good account of the existing literature. Good presentation.

- 70-79: good original work, completing a new well-explained result, linked to existing literature.

Merit theses (60-69) are sound and compelling and demonstrate evidence of critical thinking and an understanding of a significant body of knowledge. Work at this level also:

- provides a logical overall argument
- selects and applies suitable methods
- gathers original data (where applicable) and analyses it in a careful and coherent manner
- provides evidence which clearly supports its findings and arguments
- may in parts be more descriptive than evaluative or synthesised
- may not fully realise the possibilities of the research data/findings
- includes discussions / conclusions which show some appreciation of the significance of the findings
- may make fewer or weaker links to existing research, theoretical concepts or creative practice than would be expected in Distinction level work
- is presented to a generally high standard but may contain noticeable errors in referencing, punctuation, grammar and/or spelling

More specifically, the following subdivision applies:

- 65-69: some good original ideas, developed independently, but not far enough to complete a significant result; the work still explained well and with good account of and references to existing work. Close to Distinction but not quite there.
- 60-64: some good ideas, developed independently, but not far enough to reach a significant result; fair explanation of the work and with some account of and references to existing work.

A thesis in the pass range (50-59):

- demonstrates understanding and analytical ability at a level clearly beyond undergraduate level
- presents an overall argument, but may not be fully developed or consistent in its application
- outlines a research plan and applies appropriate methods
- demonstrates competence in the formulation, conduct and analysis of independent research
- is generally sound but may be uneven or limited in some respect
- may demonstrate limited evidence of synthesis and critical engagement with literature
- is likely to focus more on description than analysis of findings
- has appropriate, but limited, evidence in the support of its findings and arguments
- is competent in its presentation, but may have numerous, obvious errors of referencing, punctuation, spelling and/or grammar.

More specifically, the following subdivision applies:

- 55-59: an explanation of the problem and the work of others on it, but without much independent work of the candidate's own.
- 50-54: as above but in some way defective – for example one from: few references, some unclear text, poorly presented; however still showing some understanding.

A thesis in the D-F range (0-49) demonstrates serious deficiencies in one or more elements:

- may present research literature, theory or methods ineffectively, inaccurately or unreflectively
- may lack an overall argument
- lacks breadth and depth
- lacks cohesion across the thesis
- contains limited or inappropriate evidence
- interpretation may be minimal or flawed
- poor presentation poor with many errors of referencing, punctuation, spelling, grammar.

The College has policies and procedures to support the setting, sitting, marking and moderation of all assessment. These can be found within the Regulations and College Policies at:



www.imperial.ac.uk/about/governance/academic-governance/regulations/



www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Instruction to Candidates for Examinations

Students who are candidates for examinations are asked to note that all examinations are conducted in accordance with the College Regulations. The relevant set of regulations will depend on your programme and year of entry, please see our Regulations webpage to determine which apply to you:



www.imperial.ac.uk/about/governance/academic-governance/regulations/

Instructions for exam candidates can be found here:



www.imperial.ac.uk/media/imperial-college/administration-and-support-services/registry/academic-governance/public/academic-policy/exam-arrangements-and-re-sits/Instructions-to-candidates-for-examinations.pdf

Academic Integrity and Academic Misconduct

As your programme of study continues, you will be taught the concept of academic integrity and how you can ensure that any work that you complete now, or in the future, conforms to these principles. This means that your work acknowledges the ideas and results of others, that it is conducted in an ethical way and that it is free from plagiarism. Academic integrity is fundamental to learning, teaching and research and it is important to understand what it means you and the international community of research that you are joining.

Academic misconduct is the attempt to gain an academic advantage, whether intentionally or unintentionally, in any piece of assessment submitted to the College. This includes plagiarism, self-plagiarism, collusion, exam offences or dishonest practice. Full details of the policy can be found at:



www.imperial.ac.uk/student-records-and-data/for-current-students/undergraduate-and-taught-postgraduate/exams-assessments-and-regulations/plagiarism-academic-integrity--exam-offences/

Definitions of the main forms of academic misconduct can be found below:

Plagiarism


Plagiarism is the presentation of another person's thoughts, words, images, research or diagrams as though they were your own. Another form of plagiarism is self-plagiarism, which involves using your own prior work without acknowledging its reuse. Plagiarism may be intentional, by deliberately trying to use another person's work by disguising it or not citing the source, or unintentional where citation and/or referencing is incorrect.

Plagiarism must be avoided, with particular care on coursework, essays, reports and projects written in your own time but also in open and closed book written examinations. You can support your understanding of proper referencing and citation by using the resources available from the College such as the Library learning support webpages at:

 www.imperial.ac.uk/admin-services/library/learning-support/plagiarism-awareness/

For group work, all members have responsibility for the integrity of the work submitted. Therefore, if plagiarism (or another form of academic misconduct) is proven, all group members may be liable for any penalty imposed.

The College requires you to complete mandatory training on plagiarism awareness. You can access this training online via the Graduate School's website.

 www.imperial.ac.uk/students/academic-support/graduate-school/students/masters/professional-development/plagiarism-online/

TurnitinUK is an online text matching service which assists staff in detecting possible plagiarism. The system enables institutions and staff to compare students' work with a vast database of electronic sources. Your programme team will explain how it is used in your programme

 www.imperial.ac.uk/admin-services/ict/self-service/teaching-learning/turnitin/

Collusion

This is the term used for work that has been conducted by more than one individual, in contravention of the assessment brief. Where it is alleged that there has been collusion, all parties will be investigated initially under the Academic Misconduct procedure.

You should note that whilst the College encourages students to support each other in their studies you should be careful to ensure that you do not exceed any assessment brief with regards to individual work, always acknowledge the contributions of others in your work, and do not leave yourself open to allegations that you have supplied answers to enable another student to commit academic misconduct.

Exam offences

Exam offences fall into two categories. These are offences that may be disruptive in the exam venue or those that are considered an attempt to cheat. Examples of disruptive behaviour includes causing a disturbance in the exam room, having an electronic device that has not been fully turned off or talking in the exam room. Behaviour that may be considered an attempt to cheat includes bringing unauthorised material into an exam (such as notes, unauthorised books or other material), attempting to communicate with others apart from the invigilator, or trying to remove examination material without permission. You must ensure that you follow all reasonable instructions of the invigilators.

Dishonest practice

This is the most serious category under the procedure. Examples of dishonest practice include bribery, contact cheating (buying work from an essay mill (which is illegal in the UK) or other individual to submit as your own), taking an exam for someone else or getting someone else to take an exam for you, attempting to access exam papers before the exam, making a false claim for mitigating circumstances or providing fraudulent evidence, falsifying documentation or signatures in relation to assessment or a claim for mitigating circumstances.

4. Board of Examiners

Board of Examiners

This includes the Programme Director, all faculty involved in lecturing or supervising an MSc project in the MSc in Mathematics and Finance.

External Examiners



Dr Tiziano de Angelis

Associate Professor (Probability and Mathematical Statistics)

School of Management & Economics (Dept. ESOMAS)

University of Turin

An External Examiner is normally an experienced member of academic staff from another Higher Education Institution who acts as a critical friend to your programme of study. For some programmes, one of the External Examiners could be an industry expert to provide the professional expertise needed to support the programme. External examining is an essential part of the College's quality assurance and enhancement process, ensuring that academic standards are maintained. The knowledgeable and independent views of external examiners are invaluable in certifying that the College's awards are appropriate and comparable as well as highlighting good practice and potential areas of enhancement.

During your programme you may be invited to meet your external examiners to discuss how you have found the. It is not appropriate however, for you to seek to submit complaints or representations directly to external examiners or to seek to influence them other than by giving feedback in a meeting. Inappropriate communication towards an examiner would make you liable for disciplinary action. If there is a specific issue that needs to be resolved, please see the Student Complaints Policy and Procedure.

A summary of External examiners reports from the previous academic year can be found here:



www.imperial.ac.uk/about/governance/academic-governance/academic-policy/external-examining/

5 Location and Facilities

Imperial has a number of campuses in London and the South East. All have excellent travel links and are easily accessible via public transport.

Your main location of study will be:

South Kensington Campus
Huxley Building, 180 Queen`s Gate, London - SW7 2AZ

Facilities

Level 2

MSc Student computer room/ Common Room - 215

Level 4

Mathematics Learning Centre – 416 contains 64 computers, two study desks fitted out with audio-visual facilities for project presentations, two printers and a range of additional study areas.

MSc Silent Study Room – 413 Given the current situation the room will not be used until safety guidance changes.

Level 6

The printing room is located opposite the lifts.

Lockers: There is a (limited) number of lockers on Level 1 of the Huxley building.

Please note that the building has maximum safe occupancy limits to assist with social distancing and some of these facilities might not be accessible during the autumn term.

The Mathematical Finance Section is in Weeks Building.

MSc Programme Coordinator`s office is in Huxley, 6th floor, room 627

MSc Programme Administrator`s office is in Huxley, 6th floor, room 627.

Library Services

The Central Library at South Kensington is open 24 hours for study space, and further space is available to all students in GoStudy on levels 4 and 5 of the Chemistry Building.

Make sure you find out who your subject librarian is as they`ll be able to help you find books and online resources for your assignments. Also, don`t forget to check out the Library`s range of training workshops and our other campus libraries for access to specialist medicine and life sciences resources. You can borrow up to 40 books and, whether you`re working on or off site, you`ll be able to access e-books, e-journals and databases from our collection of almost 400,000 titles. If we don`t have what you need, we can get it for you, simply ask us to buy it or request a copy through our free Document Delivery service.

For any questions our staff will be happy to help, simply chat with us online or contact us via email, phone or social media, just check our website for details:

 www.imperial.ac.uk/library

Maps

Campus maps and travel directions are available at:

 www.imperial.ac.uk/visit/campuses

Accessibility

Information about the accessibility of our South Kensington Campus is available online through the AccessAble access guides:

 www.accessable.co.uk/organisations/imperial-college-london

Smoke-Free Policy

All Imperial campuses and properties are smoke-free. This means that smoking by staff, students or visitors is not permitted on or within 20 metres of College land. The policy covers all College properties, including student accommodation and sports grounds.

 www.imperial.ac.uk/smoke-free

SafeZone

SafeZone is a College app through which you can quickly and directly contact the Security team whenever you need them. Whether you're in an emergency situation, in need of First Aid or want to report an incident on campus, SafeZone allows you to be immediately put in touch with a member of our Security team and, at the touch of a button, can share your location and personal profile so that they can respond quickly and effectively to your specific needs. It also allows the entire College community to stay informed in the event of a major incident in London or wherever you may be in the world. Safezone also provides information on other services, such as real-time updates on the College shuttle bus.



SafeZone is optional to register for and is now available to download on the Apple and Android App stores. Visit www.imperial.ac.uk/estates-facilities/security/safezone/ for more details about SafeZone.

All existing phone numbers for the Security team are still operational. In the event of an emergency, you can still call 4444 from any internal College phone. In the event of a wider incident in London, you can now also call 0300 131 4444, Imperial's Emergency Recorded Message Line, which will point you in the direction of up-to-date information and advice.

Changes due to Coronavirus (COVID-19)

The College will keep you informed about any further changes that may affect you due to the impact of coronavirus (COVID-19). The COVID-19 FAQs on the website are a repository of helpful information and the latest guidance can be found at:

 www.imperial.ac.uk/about/covid-19/

6.Placements

The College defines a placement as:

“work experience, assessed project work, a period of course-based study or a period of research (for which academic credit is awarded and/or where the student remains subject to College student regulations during the relevant period) and where there is a transfer of direct supervision of the student to a third party (i.e. where a member of staff at the third party acts as the day-to-day supervisor/manager) for a period of two weeks or more.”


Academic departments are responsible for managing any study placement or work placement which forms part of your degree programme. It is expected that you will contribute to the process of planning your placement.

For guidance on this, see the College’s Placement and Learning Policy and associated good practice:

 www.imperial.ac.uk/about/governance/academic-governance/academic-policy/placement-learning

Your Departmental Placement Manager:

 Rula Murtada

 Huxley Building, 6th floor, room 627.

 r.murtada@imperial.ac.uk

The Careers Service is available to provide students with additional support in sourcing work placement opportunities and preparing to apply for work placement opportunities:

 www.imperial.ac.uk/careers/jobs-and-experience/work-experience/

For general information on undertaking a study or work placement visit the Placements website:

 www.imperial.ac.uk/placements

If you are considering/planning a placement outside the UK, you should also refer to the Placement Abroad Handbook:

 www.imperial.ac.uk/placements/information-for-imperial-college-students

7. Working While Studying

If you are studying full time, the College recommends that you do not work part-time during term time. If this is unavoidable we advise you to work no more than 10–15 hours per week, which should be principally at weekends and not within normal College working hours.

Working in excess of these hours could impact adversely on your studies or health.

If you are here on a Tier 4/Student Route visa you can work no more than 20 hours a week during term time. Some sponsors may not permit you to take up work outside your studies and others may specify a limit.

If you are considering part-time work during term time you are strongly advised to discuss this with your supervisor or Personal/Senior Personal Postgraduate Tutor. If you are on a Tier 4/Student Route visa you should also seek advice from the International Student Support team regarding visa limitations on employment.

The College's examination boards will not normally consider as mitigating circumstances any negative impact that part-time work during term-time may have had on your performance in examinations or in other assessed work. Examinations or vivas cannot be rescheduled to accommodate your part-time working arrangements.

8. Health and Safety

Keeping you safe is a top priority for us. Since 1 April 2022, the UK Government removed all restrictions on public areas, including Universities and education settings. Imperial College London still encourages students to wear face coverings in crowded areas, to get fully vaccinated, to cover your coughs and sneezes, and to respect others' personal space. All staff and students are advised to stay at home if you are feeling ill or have any symptoms of respiratory disease.

The latest Imperial College guidance to students can be seen at:

 www.imperial.ac.uk/about/covid-19/

The College's Health and Safety Policy can be found at:

 www.imperial.ac.uk/safety/safety-by-topic/safety-management/health-and-safety-policy-statement/

Your Departmental safety contact is:

 Martin Cooper
 131 Huxley Building
 020 7594 8544
 martin.cooper@imperial.ac.uk

You may be required to complete inductions and attend training sessions to safely complete this course.

There is also a wide range of [eLearning micro-learning modules](#) focused on specialised topics and designed to raise awareness of hazards and control measures for working safely in hazardous areas (i.e., laboratories and workshops) across the College.

The College Safety Department

The [Safety Department](#) offers a range of [specialist advice](#) on all aspects of safety. This includes anything which you feel might affect you directly, or which may be associated with teaching, research or support service activities.

The College's activities range from the use of hazardous materials ([biological agents](#), [chemicals](#), [cryogenes](#), [gases](#) and [ionising/non-ionising radiation](#)) to field work, heavy or awkward lifting, driving, and working alone or late.

All of the College's activities are covered by general health and safety regulations, but higher risk activities will have additional requirements.

The Safety Department helps departments and individuals ensure effective safety management systems are in place throughout the College to comply with specific legal requirements.

Sometimes the management systems fail, and an accident or a near-miss incident arises; it is important that we learn lessons from such situations to prevent recurrence and the Safety Department can support such investigations. All accidents and incidents should be reported online at:

 www.imperial.ac.uk/safety/safety-by-topic/accidents--incidents/

To report concerns or to ask for advice you should contact your programme director, academic supervisor or departmental safety officer in the first instance. You may also contact the [Safety Department](#) directly.

Occupational Health Requirements

The College Occupational Health Service provides services to:

- protect health at work
- assess and advise on fitness for work
- ensure that health issues are effectively managed

The Service promotes and supports a culture where the physical and psychological health of staff, students and others involved in the College is respected, protected and improved whilst at work.

 www.imperial.ac.uk/occupational-health

9. College Policies and Procedures

Student Academic Regulations


All registered students of the College are subject to the College Regulations. The relevant set of regulations will depend on your programme and year of entry, please see our Regulations webpage to determine which apply to you:

 www.imperial.ac.uk/about/governance/academic-governance/regulations


 www.imperial.ac.uk/students/terms-and-conditions

Academic Feedback Policy

We are committed in providing you with timely and appropriate feedback on your academic progress and achievement, enabling you to reflect on your academic progress. During your study you will receive different methods of feedback according to assessment type, discipline, level of study and your individual need. Further guidance on the Policy of Academic Feedback can be found on the Academic Governance website:


 www.imperial.ac.uk/media/imperial-college/administration-and-support-services/registry/academic-governance/public/academic-policy/academic-feedback/Academic-feedback-policy-for-taught-programmes.pdf

Please note that your examination scripts once completed belong to the College under the GDPR legislation. Please see the College GDPR webpages for further information at:

 www.imperial.ac.uk/admin-services/secretariat/information-governance/data-protection/guidance/guide-2---exam-records/


Provisional Marks Guidance

Provisional marks are agreed marks that have yet to be ratified by the Board of Examiners. These results are provisional and are subject to change by the Board of Examiners. The release of provisional marks is permitted except in certain circumstances. Further information can be found in the Guidelines for Issuing Provisional Marks to Students on Taught Programmes:

 www.imperial.ac.uk/media/imperial-college/administration-and-support-services/registry/academic-governance/public/academic-policy/mark-and-moderation/Guidelines-for-issuing-provisional-marks-to-students-on-taught-programmes.pdf

Late Submission Policy

You are responsible for ensuring that you submit your coursework assessments (including time remote assessments) in the correct format and by the published deadline (date and time). Any piece of assessed work which is submitted beyond the published deadline (date and time) would be classed as a late submission and will incur a penalty (a cap at the pass mark, or it is classed as a fail). Further guidance on Late Submission of Assessments can be found on the Academic Governance website:

 www.imperial.ac.uk/media/imperial-college/administration-and-support-services/registry/academic-governance/public/academic-policy/mark-and-moderation/Late-submission-Policy.pdf

If you submit late due to mitigating circumstances, you may be able to make a claim that means that the cap on your mark is lifted. Please see below.

Mitigating Circumstances

During your studies you may be affected by sudden or unforeseen circumstances. You should always contact your personal tutor for advice and support. If this happens at the time of, or immediately preceding, your assessments you may be able to make a claim for mitigating circumstances. If successful this claim enables the Board of Examiners when reviewing your marks at the end of the year to have greater discretion with regards to offering repeat attempts (either capped or uncapped), a repeat year, or with your progression or final classification. Please note, the Board are not permitted to amend the marks that you were awarded, only to take your claim into account making decisions.

All claims must be supported by independent evidence and submitted within 10 working days of the assessment deadline. Any claim made after this deadline is likely to be rejected unless there is a good reason (such as you were still unwell) until the point of submitting the claim. Details of the College's Mitigating Circumstances procedure can be found under the Mitigating Circumstances tab on the page below:

 www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Through the procedure you may also be able to request an extension deadline to some forms of assessment. Wherever possible it is expected that this is used as it will enable to you complete your studies within the same College year (rather than over the summer holiday or in the next year).

Your department will have specific instructions for making a claim for mitigation or for requesting an extension.

For making a claim for mitigation claims, please contact the Student Experience Coordinator, Olivia Adu-Bofour.

For requesting an extension please contact the MSc Administrator.

Support for ongoing or long-term conditions, or for registered disabilities would not normally fall under the remit of mitigating circumstances and students should be supported through their studies with additional examination arrangements. More details can be found at:

 www.imperial.ac.uk/disability-advisory-service/current-students/support-available/adjustments-and-support/

Academic Misconduct Policy and Procedures


As has been highlighted under the Academic Integrity section, it is important that you learn how to properly attribute and acknowledge the work, data and ideas of others. Any proven form of academic misconduct is subject to penalties as outlined in the College's Misconduct Policy and Procedures.

 www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Unsatisfactory Engagement

Unfortunately, for a variety of reasons, sometimes students struggle to meet the College's expectations with regards to their engagement with their studies. The College has a process to identify and support students by reaffirming these expectations with an action plan. If a student does not engage satisfactorily engage with these supportive measures, they can be

withdrawn from their studies. The full details of this process, and the appeals procedure relating to it can be found at:

 www.imperial.ac.uk/about/governance/academic-governance/academic-policy/complaints-appeals-and-discipline

Mutual Expectations


The mutual expectations document provides a suggested starter list of expectations that master's students and their project supervisors might expect from each other. It is designed to facilitate conversations to establish effective partnerships and it is recommended that the document is discussed at the first meeting between a main project supervisor and a new student. It should be noted that this is not exhaustive and that Departments may have variations in roles and responsibilities; supervisors should be aware of any such variations and will feed this into their discussions with students. Further, it is recognised that supervisors may not always be best placed to meet all the expectations laid out in the document, but should be aware of who, in their department, can. Students and project supervisors are encouraged to discuss, tailor and personalise the document further to suit. It is also recommended that students and their project supervisors re-visit the document throughout the duration of the project.

The Mutual Expectations document is available here:

 www.bb.imperial.ac.uk/bbcswebdav/xid-12494962_1

Academic Appeals Procedure

We have rigorous regulations in place to ensure assessments are conducted with fairness and consistency, claims for mitigating circumstances have been considered reasonably and in line with the regulations of the College, and that the decisions of the Boards of Examiners maintain the integrity of our academic awards. Should you believe that you have grounds to appeal these decisions, we have laid out clear and consistent procedures through which appeals can be investigated and considered:

 www.imperial.ac.uk/about/governance/academic-governance/academic-policy/complaints-appeals-and-discipline

Arithmetic Marks Check


If you consider that there may have been an error in the adding up of your marks, you may request an arithmetic mark check. Please note that this must be requested within 10 working days of the official notification of your results from the Results team in Registry. You may not request a marks check for a previous year of study. Please note that a marks check is not a remark of your work, but an administrative check that the marks have been accurately recorded.

Student Complaints

The College strives to ensure that all students are well supported in their studies and receive a good experience of their programme and the wider College activities. If you feel that your experience has not lived up to these expectations the College has an agreed Student Complaints process through which your concern can be investigated and considered.


If you have any concerns about your experience at the College and have been unable to address these informally, you should contact Student Complaints who can provide advice about what is the appropriate way to seek to resolve this at:

 student.complaints@imperial.ac.uk

 www.imperial.ac.uk/about/governance/academic-governance/academic-policy/complaints-appeals-and-discipline

Student Disciplinary Procedure

The College has the right to investigate any allegation of misconduct against a student and may take disciplinary action where it decides, on the balance of probabilities, that a breach of discipline has been committed. The general principles of the Student Disciplinary Procedure are available on the College website:

 www.imperial.ac.uk/about/governance/academic-governance/academic-policy/complaints-appeals-and-discipline/

Intellectual Property Rights Policy

For further guidance on the College's Intellectual Property Rights Policy is available on the College website:

 www.imperial.ac.uk/research-and-innovation/research-office/research-policies/research-related-policies/ip-policy/

Further information about the Imperial Enterprise Lab can be found at:

 www.imperial.ac.uk/students/enterprising-students

 www.imperialenterpriselab.com/support/experts-in-residence

Use of IT Facilities


View the Conditions of Use of IT Facilities:

 www.imperial.ac.uk/admin-services/ict/self-service/computers-printing/conditions-of-use-of-it-resources/

General Data Protection Regulation (GDPR)

All staff and students who work with personal data are responsible for complying with GDPR. The College will provide support and guidance but you do have a personal responsibility to comply.

In line with the above please see the College's privacy notice for students which form part of the terms and conditions of registration with the College.

 www.imperial.ac.uk/media/imperial-college/administration-and-support-services/registry/academic-governance/public/academic-policy/admissions/Privacy-Notice-for-Students-and-Prospective-Students.pdf

10. Wellbeing, Support and Advice

In your department

Your department has a system of academic and pastoral care in place to make sure you have access to the appropriate support throughout your time at Imperial.

Your Personal Tutor

Your Personal Tutor is your first point of contact for pastoral support and advice. You can arrange to have a meeting with them at any time during your studies (although most Personal Tutors will have set office hours or may require you to make an appointment).

If necessary, they will direct you to an appropriate source of support.

Mathematics Department Postgraduate Senior Tutor

Dr Gunnar Pruessner

6M32 Huxley Building

020 7594 8534

g.pruessner@imperial.ac.uk

Departmental Disability Officers

Departmental Disability Officers are the first point of contact in your department for issues around disability. They can apply for additional exam arrangements on your behalf and will facilitate support within your department.

Your Departmental Disability Officer is Olivia Adu-Bofour - o.adu-bofour@imperial.ac.uk

If you have a disability or if you feel you may have disability please contact [Disability Advisory Service \(DAS\)](#) for an assessment. Once you meet with a disability adviser, a Suggested Reasonable Adjustments Document (SRAD) will be created. This will list what support you are eligible to receive.

More information on Departmental Disability Officers is available at:



www.imperial.ac.uk/disability-advisory-service/about-us/departmental-disability-officers/

More information about how to request additional arrangements for exams if you have a disability is available at:



www.imperial.ac.uk/student-records-and-data/for-current-students/undergraduate-and-taught-postgraduate/exams-assessments-and-regulations/additional-exam-arrangements-in-respect-of-disability

Postgraduate Coaching

As well as professional development opportunities, the Graduate School has a dedicated coaching programme designed to help you through challenging times. The **Postgraduate student coaching programme** has been established to provide an opportunity to talk, independently from your academic department, about challenges you may be experiencing during the course of your studies. The programme primarily focuses on building effective working relationships and there may be other self-development issues that you can explore with a trained coach.

 www.imperial.ac.uk/students/academic-support/graduate-school/community-support/coaching/

Attributes and Aspiration Short Course

Attributes and Aspirations (AA) is an online short course that supports you to develop career planning and transferable skills. AA is flexible, has no assessments and can be accessed whenever you need it allowing you to proactively plan for your future. You can also use AA to develop key skills such as critical thinking, problem solving and time management. These will help you be a better student and are essential for your future - whether you choose to move to further study or to a job in industry.

AA is designed specifically for Imperial master's students. The Postgraduate Education Team worked with the Careers Service to design AA so that it works for you. We researched and talked to organisations that hire master's students, PhD course coordinators and alumni to make sure the skills and techniques taught in AA are those that you really need for your professional future. For further information, please see the [AA web pages](#).

 www.imperial.ac.uk/students/attributes-and-aspirations

Your Union

All Imperial students automatically become members of Imperial College Union when they register at the College. The Union provides a range of independent support.

Imperial College Union Advice Service

The ICU Advice Service delivers free, confidential, and impartial advice covering academic issues, complaints and disciplinaries, College accommodation, and internal and external signposting. Contact advice@imperial.ac.uk and complete the registration form to speak with a member of the team.

 www.imperialcollegeunion.org/advice

Student representatives

Imperial College Union operates two Representation Networks of over 600 elected student representatives – the Academic Representation Network and the Wellbeing Representation Network. Reps represent the voice of students and can direct you to internal and external support services. The Union's Liberation Officers also work to make sure that the views of under-represented and interest groups are heard at the College.

If you have any feedback about issues in your department relating to academic or wellbeing issues, you can speak to one of your student representatives.

 www.imperialcollegeunion.org/your-union/your-representatives/a-to-z

Student Hub

At the Student Hub, you can access advice about accommodation, admissions and financial support and get help with international student enquiries, questions about student records, and exams.

 www.imperial.ac.uk/student-hub

Student Support Zone

If you have moved home to take up your place at Imperial you will need to register with a new doctor (also known as a General Practitioner or GP) so that you can access NHS healthcare. It's important that you register with a doctor soon after you arrive – don't wait until you are sick, as this could delay your access to treatment.





Student Support Zone has lots of information about the resources available at Imperial and beyond to help you to stay healthy and happy. It's a great place to start when you're looking for some support – it covers advice about housing and money, health, wellbeing and maintaining a good work-life balance, and provides the details of who you can contact if you need some extra support.

 www.imperial.ac.uk/student-support-zone




Useful support contacts

Health and wellbeing

Imperial College Health Centre

 40 Prince's Gardens, South Kensington Campus
 020 7584 6301
 imperialcollege.hc@nhs.net
 www.imperialcollegehealthcentre.co.uk




Imperial College Dental Centre

 Prince's Gardens, South Kensington Campus
 020 7589 6623
 www.imperialcollegedental.co.uk

Student Counselling and Mental Health Advice Service

 020 7594 9637
 counselling@imperial.ac.uk
 www.imperial.ac.uk/counselling

Multi-Faith Chaplaincy Service

 15 Prince's Gardens, South Kensington Campus
 chaplaincy@imperial.ac.uk
 www.imperial.ac.uk/chaplaincy

Disability Advisory Service

 Room 566, Level 5, Sherfield Building, South Kensington Campus
 020 7594 9755
 disabilities@imperial.ac.uk
 www.imperial.ac.uk/disability-advisory-service

Centre for Academic English

The goal of the Centre for Academic English is to ensure you develop both the ability and the confidence to excel as a communicator on your degree programme as well as in the

workplace. From the very beginning of your degree and all the way through, we're here to help you realise your potential.

To achieve this, we've designed a flexible academic STEM communication programme enabling you to create your own personalised learning pathway. As you build your pathway, you'll have the freedom to select the language resources you need wherever you need them. These resources are the result of close collaborations with departments and so will meet your communication needs for Imperial written and spoken course assignments.

To find out more about what is available for you, visit the Centre for Academic English website. Centre for Academic English



Level 3, Sherfield Building, South Kensington Campus



english@imperial.ac.uk



www.imperial.ac.uk/academic-english

International Student Support team



020 7594 8040



www.imperial.ac.uk/students/international-students/

Careers

Careers Service



Level 5, Sherfield Building, South Kensington Campus



020 7594 8024



careers@imperial.ac.uk



www.imperial.ac.uk/careers

ICT and software

ICT Service Desk



Central Library, South Kensington Campus



020 7594 9000



www.imperial.ac.uk/ict/service-desk

Software shop



www.imperial.ac.uk/admin-services/ict/self-service/computers-printing/devices-and-software/

11. Student Administration

The Student Administration Team are responsible for the administration and maintenance of the student records for all students studying at the College. This includes enrolments, programme transfers, interruption of studies, withdrawals and processing of examination entry for research degree students. The team also use this information to fulfil reporting duties to the Student Loans Company and Transport for London , as well as other external bodies.



The Team is responsible for the processing of student results and awards on the student record system as well as the production and distribution of academic transcripts and certificates of award.

The 'My Documents' online portal allows you to access your documents, including proof of enrolment and award documentation. You can then digitally share these documents with third parties such as an employer or university.



Each document has a unique QR code with the official University watermark, making it easier for employers and others to verify your credentials. This online document sharing is a legitimate service, introduced and authorised by Imperial College London.

We would like to encourage you to use this online service in place of paper-based documentation. You can access the 'My Documents' portal here: <https://student-edocuments.imperial.ac.uk/Account/LoginViaAzure>

Student Records

 +44 (0)20 7594 7268
 student.records@imperial.ac.uk

Degree certificates

 +44 (0)20 7594 7267
 certificates@imperial.ac.uk

12. Work-life Balance

The pace and intensity of study at Imperial can be demanding so it's important to find time for outside interests.

Imperial College Union

The Union's range of 360+ student-led clubs, societies and projects is one of the largest of any UK university, opening up lots of ways for you to enjoy your downtime.

 www.imperialcollegeunion.org/about-us

Move Imperial

Imperial College has a wide range of sports and activities on offer that cater for all experience levels and abilities. We have a recreational activity offer, competitive sports teams and an elite sport programme. We are dedicated to ensuring we have a diverse, inclusive and exciting offer for all.

More information about Imperial student memberships and updates to our services can be found at:

 www.imperial.ac.uk/ethos/memberships/students

With an annual fee of £55 you will get use of the gym and swimming facilities on our campuses.

 www.imperial.ac.uk/sport

We have a huge collection of online resources, home workout videos, healthy recipes and playlists available to all as part of our MoveMore campaign, more information can be found at:

 www.imperial.ac.uk/sport/move-more/

13. Student feedback and representation

Feedback from students

The College and Union is committed to continually improving your education and wider experience and a key part of this is your feedback. Feedback is thoroughly discussed by your student representatives and staff.

Student representation

Student Representatives are recruited from every department to gather feedback from students to discuss with staff. More information about the role, and instructions on how to become an academic representative, are available on the Imperial College Union website.



www.imperialcollegeunion.org/your-union/your-representatives/academic-representatives/overview

Staff-Student Committee

Staff-Student Committees are designed to strengthen understanding and improve the flow of communication between staff and students and, through open dialogue, promote high standards of education and training, in a co-operative and constructive atmosphere. College good practice guidelines for staff-student committees are available here:



www.imperial.ac.uk/about/governance/academic-governance/academic-policy/student-feedback

14. Student Surveys

Your feedback is important to your department, the College and Imperial College Union. Whilst there are a variety of ways to give your feedback on your College experience, the following surveys give you regular opportunities to make your voice heard:

- **Module Evaluation Questionnaire (MEQ)**

The MEQ is your chance to tell us about the modules you have attended. The questionnaire is open to students across all years of study and runs at the end of the autumn, spring and summer terms.

- **Postgraduate Taught Experience Survey (PTES)**

The PTES is a national survey which asks you to rate a range of elements related to your student experience such as teaching, assessment, support and resources. Results of this national survey are made publicly available.

The Union's "You Said, We Did" campaign shows you some of the changes made as a result of survey feedback:

 www.imperialcollegeunion.org/you-said-we-did

The Union's response to surveys can be found here:

 www.imperialcollegeunion.org/your-union/your-representatives/responses

If you would like to know more about any of these surveys or see the results from previous surveys, please visit:

 www.imperial.ac.uk/students/academic-support/student-surveys/pg-student-surveys

15. And finally

Alumni Services

When you graduate you will be part of a lifelong community of over 190,000 alumni, with access to a range of alumni benefits including:

- discounts on further study at the College and at Imperial College Business School
- alumni email service
- networking events
- access to the Library and online resources
- access to the full range of careers support offered to current students for up to three years after you graduate
- access to our Alumni Visitor Centre at the South Kensington Campus, with free Wi-Fi, complimentary drinks, newspapers and magazines, and daytime left luggage facility

Visit the Alumni website to find out more about your new community, including case studies of other alumni and a directory of local alumni groups in countries across the world.

 www.imperial.ac.uk/alumni

Opportunities for Further Study

After you have completed the MSc in Mathematics & Finance, you may choose to pursue options in a variety of areas. Previous graduates have often gone on to pursue PhD degrees in related fields, as well as to work in the private sector, including industry, consulting, and the financial services.