Program

Financial Mathematics

8161  |  72 Units of Credit

Overview

The program is intended for students who have completed a degree in Mathematics or Statistics, or a Science degree with a major in mathematics or statistics, and who wish to further their knowledge of mathematical finance and statistics. The program offers intensive, high-level training in principles of financial modelling and its mathematical foundations, statistical techniques, risk assessment, and computational techniques of financial mathematics. The program was introduced in order to provide students with a route to high quality careers in the financial industry and to provide the financial sector with a stream of highly trained specialists in Quantitative Finance. In addition, the program will provide a means of obtaining the necessary preparation for further research in mathematical finance.
Faculty
Faculty of Science

Campus
Kensington

Study Level
Postgraduate

Typical duration
1.7 Years

Delivery Mode
Face-to-face

Intake Period
Term 1

Academic Calendar
3+ Calendar

Minimum Units of Credit
72

Award type
Masters (Coursework)

Award(s)
Master of Financial Mathematics - MFinMath

CRICOS Code
058739M
Learning Outcomes

1. Graduates will have acquired advanced disciplinary knowledge and skills in financial mathematics, and an ability to apply these in a range of contexts;
2. Graduates will have developed an understanding of enquiry-based learning and demonstrate analytical skills as they relate to financial mathematics;
3. Graduates will have developed advanced critical thinking and problem solving skills in mathematical finance;
4. Graduates will be able to communicate effectively to a range of audiences in both written and oral forms, and be capable of independent and collaborative enquiry and working effectively with others;
5. The program will enhance research, inquiry and analytical thinking skills and abilities in mathematical finance.

Graduate Capabilities:

For more information on Graduate Capabilities, please click on this link.
Program Structure

Students must complete 72 UOC as a standalone program.

The program consists of 72 UOC comprised of:

1. 30 UOC of compulsory Core Coursework Courses

2. 30 UOC of Electives chosen from the School of Mathematics and Statistics and/or outside the School of Mathematics and Statistics

3. 12 UOC of compulsory supervised Research Project

Core Courses

Students must take 30 UOC of the following courses.

MATH5335  6 UOC
Computational Methods for Finance

MATH5816  6 UOC
Continuous Time Financial Modelling

MATH5835  6 UOC
Stochastic Processes

MATH5965  6 UOC
Discrete Time Financial Modelling

MATH5975  6 UOC
Introduction to Stochastic Analysis

Project

Students must take 12 UOC of the following courses.

Students who choose to complete the project on a part-time basis enrol in MATH5001 Project (6 UOC) over two consecutive terms in place of MATH5925 Project (12 UOC).
**Electives**

Students must take 30 UOC of the following courses.

Please Note: Students are allowed to take up to 18 UOC (3 courses) outside the School of Mathematics and Statistics provided that the courses are at postgraduate level and approved by the Postgraduate Coursework Coordinator.

- **MATH5165**  6 UOC  Optimization
- **MATH5175**  6 UOC  Special Topics in Applied Mathematics A
- **MATH5185**  6 UOC  Special Topics in Applied Mathematics B
- **MATH5285**  6 UOC  Fluids, Oceans and Climate
- **MATH5295**  6 UOC  Special Topics in Applied Mathematics D
- **MATH5305**  6 UOC  Computational Mathematics for Science and Engineering
- **MATH5335**  6 UOC  Computational Methods for Finance
- **MATH5425**  6 UOC  Graph Theory
<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>MATH5505</td>
<td>6</td>
<td>Combinatorics</td>
</tr>
<tr>
<td>MATH5515</td>
<td>6</td>
<td>Special Topics in Pure Mathematics A</td>
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<tr>
<td>MATH5525</td>
<td>6</td>
<td>Special Topics in Pure Mathematics B</td>
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<tr>
<td>MATH5535</td>
<td>6</td>
<td>Special Topics in Pure Mathematics C</td>
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<tr>
<td>MATH5605</td>
<td>6</td>
<td>Functional Analysis</td>
</tr>
<tr>
<td>MATH5615</td>
<td>6</td>
<td>Banach and Operator Algebras</td>
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<tr>
<td>MATH5645</td>
<td>6</td>
<td>Number Theory</td>
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<tr>
<td>MATH5665</td>
<td>6</td>
<td>Algebraic Topology</td>
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<tr>
<td>MATH5685</td>
<td>6</td>
<td>Complex Analysis</td>
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<tr>
<td>MATH5705</td>
<td>6</td>
<td>Modern Analysis</td>
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<tr>
<td>MATH5715</td>
<td>6</td>
<td>Harmonic Analysis</td>
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<tr>
<td>MATH5725</td>
<td>6</td>
<td>Galois Theory</td>
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<td>Course Name</td>
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<tr>
<td>MATH5735</td>
<td>6</td>
<td>Modules and Representation Theory</td>
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<tr>
<td>MATH5785</td>
<td>6</td>
<td>Geometry</td>
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<tr>
<td>MATH5805</td>
<td>6</td>
<td>Special Topics in Statistics</td>
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<tr>
<td>MATH5806</td>
<td>6</td>
<td>Applied Regression Analysis</td>
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<tr>
<td>MATH5816</td>
<td>6</td>
<td>Continuous Time Financial Modelling</td>
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<tr>
<td>MATH5825</td>
<td>6</td>
<td>Measure, Integration and Probability</td>
</tr>
<tr>
<td>MATH5826</td>
<td>6</td>
<td>Statistical Methods in Epidemiology</td>
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<td>MATH5835</td>
<td>6</td>
<td>Stochastic Processes</td>
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<td>MATH5836</td>
<td>6</td>
<td>Data Mining and its Business Applications</td>
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<td>MATH5845</td>
<td>6</td>
<td>Time Series</td>
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<td>MATH5855</td>
<td>6</td>
<td>Multivariate Analysis</td>
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<tr>
<td>MATH5885</td>
<td>6</td>
<td>Longitudinal Data Analysis</td>
</tr>
</tbody>
</table>
MATH5895  |  6 UOC  
Nonparametric Statistics

MATH5905  |  6 UOC  
Statistical Inference

MATH5906  |  6 UOC  
Design & Analysis of Clinical Trials

MATH5916  |  6 UOC  
Survival Analysis

MATH5945  |  6 UOC  
Categorical Data Analysis

MATH5960  |  6 UOC  
Bayesian Inference and Computation

MATH5965  |  6 UOC  
Discrete Time Financial Modelling

MATH5975  |  6 UOC  
Introduction to Stochastic Analysis

MATH5985  |  6 UOC  
Term Structure Modelling

**Minimum Level 5/6 Mathematics UOC**

Students must complete a minimum of 54 UOC of the following courses.

any level 5 Mathematics course

any level 6 Mathematics course
Information Rule

Students seeking to enrol into a project are required to have the approval of the Head of School or Nominee and normally will be required to have attained a WAM of 70 or higher in the first eight (8) courses (48 UOC) of the program.

Enrolment into a Research Project is subject to appropriate research and supervision resources being available.

Enrolment Disclaimer

Unless advised otherwise by your program authority, you should follow the rules for the handbook for the year you commenced your program. You are also responsible for ensuring you enrol in courses according to your program requirements. myUNSW enrolment checks that you have met enrolment requirements such as pre-requisites for individual courses but not that a course will count towards your program requirements.
Admission Requirements

Entry Requirements

Admission Requirements

To gain entry to this program, students must:

1. Have completed a Bachelor of Mathematics or a Bachelor of Science undergraduate degree with a major in mathematics or statistics; and
2. Have sufficient mathematical and/or statistical background, as indicated by an average of 65 or above in level III mathematics and/or statistics university courses.

Notes

In addition, students must have permission of the Head of School or Nominee to be admitted into the program.

Prospective international students should note they will need to meet the University's English language requirements.

Advanced Standing

Honours graduates in Mathematics or Statistics from UNSW (or equivalent) may receive advanced standing of up to a maximum of 24 UOC and may complete the degree within 48 UOC, or one year of full time study.

Students with a Graduate Diploma in Mathematics and Statistics from UNSW with a weighted average mark of 70 or more may receive advanced standing of up to a maximum of 48 UOC and may complete the degree with 24 UOC, or 0.5 year of full time study.

The specific advanced standing to be awarded will be determined at the time of admission and will be based on the student's background and previous study.

For more information about admission requirements for various UNSW programs, visit the following website(s):

Domestic Students
International Student
Program Requirements

Progression Requirements

Students who have completed 24 UOC of this program may exit with a Graduate Certificate in Mathematics and Statistics (7659), subject to meeting the program rules and requirements of that program.

Students who have completed the Graduate Certificate (7659) and have a WAM of 70 may apply to transfer into this Masters program and will receive up to 24 UOC of Advanced Standing.

Students who have completed the full 48 UOC of the Graduate Diploma (5659), and have a WAM of 70, may apply to transfer into this Masters program and will receive up to 48 UOC of Advanced Standing.

Students who have completed 24 UOC of the Graduate Diploma (5659), and have a WAM of 70, may apply to transfer into this Masters program and will receive up to 24 UOC of Advanced Standing.

For more information on university policy on progression requirements please visit Academic Progression.
Pathways

Articulation Arrangements

Other program(s) within articulated suite:

Graduate Diploma - GradDip
5659 Mathematics and Statistics

Faculty: Faculty of Science
Campus: Kensington
Units of Credit: 48
Typical Duration: 1 Years

Read More

Graduate Certificate - GradCert
7659 Mathematics and Statistics

Faculty: Faculty of Science
Campus: Kensington
Units of Credit: 24
Typical Duration: 0.7 Years

Read More
Recognition of Achievement

Award with Excellence

The Award with Excellence is awarded in coursework masters programs, including Masters (Extension) but with the exception of Masters (Extended) such as JD and MD, when a Weighted Average Mean (WAM) of at least 80% has been achieved and at least 50% of the requirements of the award are completed at UNSW. All eligible programs will award 'with Excellence' except in special circumstances where approval of Academic Board has been given for a program to opt out.

For more information, please visit:

Current Students Award with Excellence
Program Fees

At UNSW fees are generally charged at course level and therefore dependent upon individual enrolment and other factors such as student's residency status. For generic information on fees and additional expenses of UNSW programs, click on one of the following:

- Domestic Students
- Commonwealth Supported Students
- International Students
Pre-2019 Handbook Editions

Access past handbook editions (2018 and prior)

Pre-2019 Handbook Editions