PROGRAMME SPECIFICATION

KEY FACTS

<table>
<thead>
<tr>
<th>Programme name</th>
<th>Quantitative Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Award</td>
<td>MSc</td>
</tr>
<tr>
<td>School</td>
<td>Cass Business School / Singapore Management University (SMU)</td>
</tr>
<tr>
<td>Department or</td>
<td>MSc Programme (Cass Business School)</td>
</tr>
<tr>
<td>equivalent</td>
<td></td>
</tr>
<tr>
<td>Programme code</td>
<td>PSQFSP</td>
</tr>
<tr>
<td>Type of study</td>
<td>Full Time</td>
</tr>
<tr>
<td>Total UK credits</td>
<td>180</td>
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<tr>
<td>Total ECTS</td>
<td>90</td>
</tr>
<tr>
<td>Partner (partnership</td>
<td>Singapore Management University</td>
</tr>
<tr>
<td>programmes only)</td>
<td></td>
</tr>
<tr>
<td>Type of partnership</td>
<td>Joint Programme with a Degree Awarding Powers Body</td>
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</table>

PROGRAMME SUMMARY

This version of the MSc Quantitative Finance has been carefully designed together with Singapore Management University and is jointly delivered by both Universities. It is modelled on the Cass MSc Quantitative Finance programme and prepares students to pursue successful careers in quantitative areas of finance, both in the City or for further studies at PhD level.

Students on the joint degree programme, developed with Singapore Management University (SMU) will take the same nine core modules across terms one and two as Cass students, however they will be delivered across the two schools in the following manner:

**Term one** – delivered at SMU

- Asset Pricing
- Derivatives
- Foundations of Econometrics
- Numerical Methods 1: Foundations

**Term two** – delivered at Cass

- Econometrics of Financial Markets
- Fixed Income Securities
- Numerical Methods 2: Applications to Finance
- Risk Analysis
- Research Methods for Finance Professionals
**Term three** – delivered at SMU

Elective study by taking elective modules to a total of 50 credits.

Elective modules will be selected from those listed by SMU and deemed to be appropriate by both schools.

The programme aims and objectives are the same as for the Cass MSc Quantitative Finance:-

**Aims**

- To develop a good knowledge and understanding in the statistical techniques, and methodologies used in various areas of quantitative finance such as trading, asset pricing or asset management.
- To develop an understanding of the importance of forecasting in the decision making process required in financial market.
- To help students in acquiring the theoretical foundations of finance and the statistical skills required needed to pursue successful careers in quantitative areas of finance, including quantitative analysts, risk management, asset management, trading and pricing financial assets.
- To help students to work in teams, to manage projects and to compile reports.
- To help students in understanding the links between the theoretical frameworks of their practical applications.

To achieve this, the programme provides students with a comprehensive grasp of the principles and theories of finance, econometrics and quantitative finance and their application to real-life corporate situations. This is set in the context of the wider market and economic environment, and strengthened by providing an in-depth understanding of relevant support disciplines. Students will be able to apply finance theory and quantitative applications in the areas of financial research, asset management, derivatives and risk management.

Throughout the course, where possible, lecturers will emphasise the many ethical issues that arise in the context of quantitative finance. In so doing you will be encouraged to share your views with your lecturers and with your class mates, where a diversity of opinion is to be expected and encouraged.
On successful completion of this programme, you will be expected to be able to:

Knowledge and understanding:
• have a detailed knowledge and understanding of the financial products available, their risk and returns characteristics and their use in hedging and for speculation.

• obtain the knowledge of understanding the theory and theoretical developments in the field of finance, econometrics, forecasting, asset valuation and practical applications

• have acquired a rigorous knowledge and understanding of the existing valuation models used in finance, their assumptions, their weakness, an ability to propose efficient alternatives and their applications

• understand the use and importance of statistics and forecasting in asset pricing, asset management and risk management

Skills:
• acquire the ability to conduct research into issues of quantitative finance, such as pricing financial assets, risk management, asset management as well as the use and applications of sophisticated statistics applied to different problems in finance.

• be able to apply the financial theory and use statistics to help us in understanding how the theory complies to data.

• be able to collect data, work with data and to be able to use specialist software in analysing data.

• gain the ability to communicate technical information to a non-specialist audience

• obtain the ability to apply the knowledge acquired in the programme to test theoretical models and to understand how the theory works in practice.

• gain the ability to advice on the use of financial securities or statistical techniques by institutional investors such as banks or asset management companies for conducting their business

• have achieved the ability to critically analyse existing valuation models and to apply sophisticated statistics in testing the validity of the models.
• gain ability to write clear, well-structured and well argued reports

• be able to work effectively in groups to manage projects.

Values and attitudes:
• Students should be highly motivated to achieve high level of performance in the degree

• Students should develop a certain level of excitement for the subject

• Students will be highly challenged in a number of areas which required self-directed studying and critical thinking.

HOW WILL I LEARN?

Teaching and learning methods include the opportunity for students to apply their knowledge and expertise to problems beyond those generally encountered. A range of teaching and learning strategies are used to help you meet the different learning outcomes and to cater for the varied backgrounds and experiences of you and your fellow students.

• Lectures and directed reading are used to help you achieve an understanding of the current level of knowledge in the relevant areas.

• Mini case studies, the use of specialist software package and real life exercises as well as contributions from outside speakers are used to achieve integration between theory and practice.

• Substantial pieces of individual work such as a Business Research Project will provide you with the opportunity to acquire research and report writing skills on an individual basis and you will also work in small groups with your fellow students in order to benefit from peer interaction.

The assessment of the course will also support your learning:

• Coursework provides ongoing feedback on your programme.

• Tests will assess the knowledge gained.

• Examinations provide a more in-depth assessment of knowledge gained and also assess your problem solving abilities.

The MSc in Quantitative Finance is designed and structured to allow for intellectual progression through core modules taught in terms 1 and 2. Modules taught in term 2 normally build on the knowledge and skill acquired in term 1. Term three allows for
further progression by choosing specialist elective modules or a dissertation/project, where students can apply knowledge and skills acquired earlier in the programme.

Students who fail to meet the requirements for the award of MSc Programme may be awarded a postgraduate diploma provided they have successfully completed all core content.

A minimum of 10 teaching and learning hours (both contact and non-contact) are required for each credit awarded. The precise weighting of different types of teaching and learning depends on the modules you take and the breakdown is therefore provided within the appropriate module specifications.

Non-contact hours are for self-directed study and account for the minimum amount of time you should spend studying independently, including subject research, reading, working in groups and completing assignments and other homework.

**Overall teaching and learning hours: approx 1800 hours**  
**Contact hours: approx 348 hours**

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**WHAT TYPES OF ASSESSMENT AND FEEDBACK CAN I EXPECT?**

**Assessment and Assessment Criteria**

This course is assessed by coursework and examinations and applies standard MSc grade related criteria.

Assessment Criteria are descriptions, based on the intended learning outcomes, of the skills, knowledge or attitudes that you need to demonstrate in order to complete an assessment successfully, providing a mechanism by which the quality of an assessment can be measured. Grade-Related Criteria are descriptions of the level of skills, knowledge or attributes that you need to demonstrate in order achieve a certain grade or mark in an assessment, providing a mechanism by which the quality of an assessment can be measured and placed within the overall set of marks. Assessment Criteria and Grade-Related Criteria will be made available to you to support you in completing assessments. These may be provided in programme handbooks, module specifications, on the virtual learning environment or attached to a specific assessment task.

**Feedback on assessment**

Feedback will be provided in line with our Assessment and Feedback Policy and will be provided in a variety of ways throughout your course, both formally and informally, in order to support your learning.
You will normally be provided with coursework feedback within three weeks of the submission deadline or assessment date. This would normally include a provisional grade or mark. The timescale for feedback on final projects or dissertations may be longer. Examination grades will be provided once they have been agreed by an Assessment Board.

More details about the feedback you can expect from individual modules and assessments will be provided by your lecturers.

The full policy can be found at: 

Assessment Regulations

In order to pass your Programme, you should complete successfully or be exempted from the relevant modules and assessments and will therefore acquire the required number of credits. The programme is weighted according to the number of credits awarded for each module. Pass / Fail modules are excluded from this calculation.

The pass mark for each module is 50% and there are no minimum qualifying marks for individual components.

If you fail an assessment component or a module, the following will apply:

Re-Sit: you will normally be offered one re-sit attempt.

If you are successful in the re-sit, you will be awarded the credit for that module. The mark for each assessment component that is subject to a re-sit will be capped at the pass mark for the module. This capped mark will be used in the calculation of the final module mark together with the original marks for the component(s) that you passed at first attempt.

If you do not meet the pass requirements for a module and do not complete your re-sit by the date specified you will not progress and the Assessment Board will require that you be withdrawn from the programme.

If you fail to meet the requirements for the Programme, the Assessment Board will consider whether you are eligible for an Exit Award as per the table below.

If you would like to know more about the way in which assessment works at City, please see the full version of the Assessment Regulations at: 
http://www.city.ac.uk/__data/assets/word_doc/0003/69249/s19.doc
WHAT AWARD CAN I GET?

Master’s Degree:

<table>
<thead>
<tr>
<th>HE Level</th>
<th>Credits</th>
<th>Weighting (%)</th>
<th>Class</th>
<th>% required</th>
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<tbody>
<tr>
<td>Degree</td>
<td>7</td>
<td>180</td>
<td>With Distinction</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>With Merit</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Without classification</td>
<td>50</td>
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Postgraduate Diploma:

<table>
<thead>
<tr>
<th>HE Level</th>
<th>Credits</th>
<th>Weighting (%)</th>
<th>Class</th>
<th>% required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree</td>
<td>7</td>
<td>130</td>
<td>With Distinction</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>With Merit</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Without classification</td>
<td>50</td>
</tr>
</tbody>
</table>

WHAT WILL I STUDY?

As presented in the summary description of the programme, the programme is taught over three terms. Students must complete four core modules in term one (delivered at Singapore Management University), five core modules in term two (delivered at Cass Business School), and five elective modules in term three (delivered at SMU).

<table>
<thead>
<tr>
<th>Module Title</th>
<th>SITS Code</th>
<th>Module Credits</th>
<th>Core/Elective</th>
<th>Can be Compensated?</th>
<th>Level</th>
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<tbody>
<tr>
<td>Derivatives</td>
<td>SMM254</td>
<td>15</td>
<td>C</td>
<td>N</td>
<td>7</td>
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<tr>
<td>Asset Pricing</td>
<td>SMM265</td>
<td>15</td>
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<td>7</td>
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<td>Fixed Income Securities</td>
<td>SMM269</td>
<td>15</td>
<td>C</td>
<td>N</td>
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<tr>
<td>Foundation of Econometrics</td>
<td>SMM270</td>
<td>15</td>
<td>C</td>
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<tr>
<td>Econometrics of Financial Markets</td>
<td>SMM271</td>
<td>15</td>
<td>C</td>
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<tr>
<td>Risk Analysis</td>
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<td>15</td>
<td>C</td>
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<td>Numerical Methods 1: Foundations</td>
<td>SMM312</td>
<td>15</td>
<td>C</td>
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<td>Numerical Methods 2: Applications in Finance</td>
<td>SMM313</td>
<td>15</td>
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<td>Research Methods for Quantitative Professionals</td>
<td>SMM549</td>
<td>10</td>
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<td>Electives</td>
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<td>N/A</td>
<td>E</td>
<td>N</td>
<td>7</td>
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</table>
SMU individual modules will not be added to the Prism / SITS databases.

TO WHAT KIND OF CAREER MIGHT I GO ON?

http://www.cass.city.ac.uk/more-about-cass/careers-services - Careers Service

http://www.cass.city.ac.uk/more-about-cass/alumni-services - Alumni Service

HOW DO I ENTER THE PROGRAMME?

Admissions to the joint stream of the programme will be carried out in Singapore by the SMU admissions team and will meet the requirements of both Universities in terms of entrance criteria. The Cass MSc admissions team will work with SMU in order to ensure that the students entering the course are of an appropriate calibre.

To be accepted on to a Cass MSc degree you will need a good Bachelors degree. This usually means a UK 2.1 or above, or the equivalent from an overseas institution. Some level of previous study in the specific subject area may be required.

Applicants will need to submit two references, one of which must be an academic reference if the candidate does not have previous work experience. Previous work experience is not a requirement of our full time MSc courses.

We require all students who have not previously studied at in English to take an IELTS exam. The IELTS requirement is 7.0 with a minimum of 6.5 in writing.

Version: 3.0
Version date: August 2016
For use from: 2016-17