AFIN8019
Algorithmic Trading
Term 1, Online-scheduled-In person assessment, North Ryde 2022

Department of Applied Finance

Contents

General Information 2
Learning Outcomes 2
General Assessment Information 2
Assessment Tasks 3
Delivery and Resources 5
Unit Schedule 5
Policies and Procedures 6

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Notice
As part of Phase 3 of our return to campus plan, most units will now run tutorials, seminars and other small group activities on campus, and most will keep an online version available to those students unable to return or those who choose to continue their studies online.

To check the availability of face-to-face activities for your unit, please go to timetable viewer. To check detailed information on unit assessments visit your unit’s iLearn space or consult your unit convenor.
**General Information**

Unit convenor and teaching staff
Sean Foley  
sean.foley@mq.edu.au

Credit points  
10

Prerequisites  
ACST6003 or (Admission to MFin or MActPrac)

Corequisites

Co-badged status

Unit description  
The unit introduces core concepts on trading where students examine the market design and structure and how market forces and information shape and affect the order flow and execution. The trading process and the strategies used by the traders to achieve their intended trading outcomes will be discussed. Interactive trading software, complemented with case studies, will be used to simulate the daily activities of a real trading room. Students will design the trading algorithms, execute the orders and analyse the trading outcomes.

**Important Academic Dates**

Information about important academic dates including deadlines for withdrawing from units are available at [https://www.mq.edu.au/study/calendar-of-dates](https://www.mq.edu.au/study/calendar-of-dates)

**Learning Outcomes**

On successful completion of this unit, you will be able to:

- **ULO1**: Explore the trading process and identify relevant information that affect trading decisions.
- **ULO2**: Design and operate computer-based trading algorithms.
- **ULO3**: Interpret and apply theoretical predictions and findings to real-world global financial markets.
- **ULO4**: Identify trading problems and learn how to solve them.

**General Assessment Information**

Late submissions of assessments  
Unless a Special Consideration request has been
submitted and approved, no extensions will be granted. There will be a deduction of 10% of the total available assessment-task marks made from the total awarded mark for each 24-hour period or part thereof that the submission is late. Late submissions will only be accepted up to 96 hours after the due date and time.

No late submissions will be accepted for timed assessments – e.g., quizzes, online tests.

**Table 1: Penalty calculation based on submission time**

<table>
<thead>
<tr>
<th>Submission time after the due date (including weekends)</th>
<th>Penalty (% of available assessment task mark)</th>
<th>Example: for a non-timed assessment task marked out of 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 24 hours</td>
<td>10%</td>
<td>10% x 30 marks = 3-mark deduction</td>
</tr>
<tr>
<td>24-48 hours</td>
<td>20%</td>
<td>20% x 30 marks = 6-mark deduction</td>
</tr>
<tr>
<td>48-72 hours</td>
<td>30%</td>
<td>30% x 30 marks = 9-mark deduction</td>
</tr>
<tr>
<td>72-96 hours</td>
<td>40%</td>
<td>40% x 30 marks = 12-mark deduction</td>
</tr>
<tr>
<td>&gt; 96 hours</td>
<td>100%</td>
<td>Assignment won’t be accepted</td>
</tr>
</tbody>
</table>

**Special Consideration**

To request an extension on the due date/time for a timed or non-timed assessment task, you must submit a Special Consideration application. An application for Special Consideration does not guarantee approval.

The approved extension date for a student becomes the new due date for that student. The late submission penalties above then apply as of the new due date.

**Assessment Tasks**

<table>
<thead>
<tr>
<th>Name</th>
<th>Weighting</th>
<th>Hurdle</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Project</td>
<td>30%</td>
<td>No</td>
<td>Please refer to iLearn</td>
</tr>
<tr>
<td>In Class Quizzes</td>
<td>20%</td>
<td>No</td>
<td>Please refer to iLearn</td>
</tr>
<tr>
<td>Final Exam</td>
<td>50%</td>
<td>No</td>
<td>Fri 18 Feb 2021</td>
</tr>
</tbody>
</table>

**Group Project**

Assessment Type: Project
Indicative Time on Task 2: 25 hours
Due: Please refer to iLearn
Weighting: 30%

Students will conduct simulation exercise and produce quantitative and qualitative analysis and write reports of 1,500 to 3,000 words.

On successful completion you will be able to:
- Explore the trading process and identify relevant information that affect trading decisions.
- Design and operate computer-based trading algorithms.
- Interpret and apply theoretical predictions and findings to real-world global financial markets.
- Identify trading problems and learn how to solve them.

In Class Quizzes
Assessment Type 1: Quiz/Test
Indicative Time on Task 2: 15 hours
Due: Please refer to iLearn
Weighting: 20%

Students will be required to complete a series of in-class quizzes.

On successful completion you will be able to:
- Explore the trading process and identify relevant information that affect trading decisions.
- Design and operate computer-based trading algorithms.
- Interpret and apply theoretical predictions and findings to real-world global financial markets.
- Identify trading problems and learn how to solve them.

Final Exam
Assessment Type 1: Examination
Indicative Time on Task 2: 30 hours
Due: Fri 18 Feb 2021
Weighting: 50%
A 2 hour final exam will be conducted during University Exam Period.

On successful completion you will be able to:
• Explore the trading process and identify relevant information that affect trading decisions.
• Interpret and apply theoretical predictions and findings to real-world global financial markets.
• Identify trading problems and learn how to solve them.

1 If you need help with your assignment, please contact:
• the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
• the Learning Skills Unit for academic skills support.

2 Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

Lectures and seminars are recorded and will be made available on iLearn from 17 January onward.

There will be online interactive sessions to be held on the following dates and Sydney time:
• Sat 15 Jan at 5 - 6pm
• Sat 22 Jan 5 - 7pm
• Tue 25 Jan 5 - 7pm
• Tue 1 Feb 5 - 7pm
• A revision session to be held in the week commencing 7 Feb. Date and time will be confirmed later.

You are strongly recommended to attend these sessions in person. If you have a valid reason for absence such as illness, the recorded session may act as backup so that you can keep on top of the material.

Unit Schedule

<table>
<thead>
<tr>
<th>Topic</th>
<th>Topic Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Trading Basics: Electronic Limit Order Books</td>
</tr>
<tr>
<td>2</td>
<td>Market Participants and Transaction Costs</td>
</tr>
</tbody>
</table>
Unit guide AFIN8019 Algorithmic Trading

3 Market making, adverse selection and spreads

4 Fragmentation and VBA Coding

5 Best Execution, Alternate Priority Mechanisms, Tick Size Extensions, Fee Structures

6 Arbitrage + VBA Extensions

7 Dark Trading

8 Predatory Trading

9 Speed Bumps, Quote Fade and Smart Order Routing

10 Market Dislocations

11 Cryptocurrencies – Operation, regulation, infrastructure, transaction costs, investability, arbitrage

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://policies.mq.edu.au). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- Academic Appeals Policy
- Academic Integrity Policy
- Academic Progression Policy
- Assessment Policy
- Fitness to Practice Procedure
- Grade Appeal Policy
- Complaint Management Procedure for Students and Members of the Public
- Special Consideration Policy

Students seeking more policy resources can visit Student Policies (https://students.mq.edu.au/support/study/policies). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit Policy Central (https://policies.mq.edu.au) and use the search tool.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/admin/other-resources/student-conduct
Results

Results published on platform other than eStudent, (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

The Writing Centre

The Writing Centre provides resources to develop your English language proficiency, academic writing, and communication skills.

- Getting help with your assignment
- Workshops
- Chat with a WriteWISE peer writing leader
- Access StudyWISE
- Upload an assignment to Studiosity
- Complete the Academic Integrity Module

The Library provides online and face to face support to help you find and use relevant information resources.

- Subject and Research Guides
- Ask a Librarian

Student Enquiry Service

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

Equity Support

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.