AFIN8019

Algorithmic Trading

Session 1, Online-scheduled-In person assessment, North Ryde 2022

Department of Applied Finance

Contents

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General Information

Unit convenor and teaching staff
Unit Convenor
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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

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

Submission time after the due date (including weekends)	Penalty (% of available assessment task mark)	Example: for a non-timed assessment task marked out of 30
< 24 hours	10%	10% x 30 marks = 3-mark deduction
24-48 hours	20%	20% x 30 marks = 6-mark deduction
48-72 hours	30%	30% x 30 marks = 9-mark deduction
72-96 hours	40%	40% x 30 marks = 12-mark deduction
> 96 hours	100%	Assignment won't be accepted

Other assessment criteria for assessment tasks will be provided on the unit iLearn site.

Assessment Tasks

Name	Weighting	Hurdle	Due
In Class Quizzes	20%	No	See ilearn
Group Project	30%	No	See ilearn
Final Exam	50%	No	University examination period

In Class Quizzes

Assessment Type [1]: Quiz/Test
Indicative Time on Task [2]: 15 hours
Due: **See 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.

Group Project

Assessment Type [1]: Project
Indicative Time on Task [2]: 25 hours
Due: **See 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.

Final Exam

Assessment Type [1]: Examination
Indicative Time on Task [2]: 30 hours
Due: **University examination period**
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 Writing Centre 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.

Unit Schedule

Class	Date (Friday)	Topic
1	25 Feb	Trading Basics: Electronic Limit Order Books
2	4 Mar	Market Participants and Transaction Costs
3	11 Mar	Market making, adverse selection and spreads
4	18 Mar	Fragmentation and VBA Coding
5	25 Mar	Best Execution, Alternate Priority Mechanisms, Tick Size Extensions, Fee Structures
6	1 Apr	Arbitrage + VBA Extensions
7	8 Apr	Dark Trading
8	29 Apr	Predatory Trading
9	6 May	Speed Bumps, Quote Fade and Smart Order Routing
10	13 May	Assignment discussion
11	20 May	Market Dislocations
12	27 May	Crytocurrencies – Operation, regulation, infrastructure, transaction costs, investability, arbitrage

13	3 Jun	Revision

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
- Assessment Procedure
- Complaints Resolution 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

Academic Integrity

At Macquarie, we believe academic integrity – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free online writing and maths support, academic skills development and wellbeing consultations.

Student Support

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

dents.mq.edu.au/support/

The Writing Centre

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

- 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 Services and Support

Macquarie University offers a range of Student Support Services including:

- IT Support
- Accessibility and disability support with study
- Mental health support
- Safety support to respond to bullying, harassment, sexual harassment and sexual assault
- Social support including information about finances, tenancy and legal issues

Student Enquiries

Got a question? Ask us via AskMQ, or contact Service Connect.

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.