

FNCE30010 Algorithmic Trading

Credit Points:	12.5																											
Level:	3 (Undergraduate)																											
Dates & Locations:	This subject is not offered in 2016.																											
Time Commitment:	Contact Hours: One 2-hour lecture plus one 1-hour laboratory per week Total Time Commitment: Estimated total time commitment is 120 hours.																											
Prerequisites:	<p>One of:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>FNCE30001 Investments</td> <td>Semester 1, Semester 2</td> <td>12.5</td> </tr> <tr> <td>COMP20007 Design of Algorithms</td> <td>Semester 1</td> <td>12.5</td> </tr> </tbody> </table> <p>and one of:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>ECOM20001 Introductory Econometrics</td> <td>Semester 1, Semester 2</td> <td>12.5</td> </tr> <tr> <td>ECON20003 Quantitative Methods 2</td> <td>Summer Term, Semester 1, Semester 2</td> <td>12.5</td> </tr> <tr> <td>MAST20005 Statistics</td> <td>Semester 2</td> <td>12.5</td> </tr> <tr> <td>MAST20004 Probability</td> <td>Semester 1</td> <td>12.5</td> </tr> <tr> <td>MAST20006 Probability for Statistics</td> <td>Semester 1</td> <td>12.5</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	FNCE30001 Investments	Semester 1, Semester 2	12.5	COMP20007 Design of Algorithms	Semester 1	12.5	Subject	Study Period Commencement:	Credit Points:	ECOM20001 Introductory Econometrics	Semester 1, Semester 2	12.5	ECON20003 Quantitative Methods 2	Summer Term, Semester 1, Semester 2	12.5	MAST20005 Statistics	Semester 2	12.5	MAST20004 Probability	Semester 1	12.5	MAST20006 Probability for Statistics	Semester 1	12.5
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Recommended Background Knowledge:	Knowledge of Python is a benefit.																											
Non Allowed Subjects:	None																											
Core Participation Requirements:	<p><p>For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.</p> <p>It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability</p></p>																											
Contact:	<p>peter.bossaerts@unimelb.edu.au (mailto:peter.bossaerts@unimelb.edu.au)</p> <p>carole.comerton-forde@unimelb.edu.au (mailto:carole.comerton-forde@unimelb.edu.au)</p>																											
Subject Overview:	Global equity markets have changed fundamentally over the last decades Regulatory reforms to promote competition for trading services have led to considerable fragmentation of markets.																											

	<p>New entrants and new technology have contributed to innovative new trading mechanisms and pricing structures. Today, markets are overwhelming electronic, with trading occurring using algorithms rather than manually. Graduates wishing to pursue careers in financial markets need to understand the new market structure that exists and have skills to understand and implement trading strategies in this environment. This subject will ensure students develop these skills and knowledge, through a combination of lectures and hands-on experience of manual and robot trading in online experimental markets.</p> <p>The class is quite unique. Despite growing importance of computerised trading in financial markets, there exist hardly any finance classes that expose students to the issues, let alone allowing them to develop the skills to conceive robot traders themselves through participation in experimental online markets.</p>
Learning Outcomes:	<p>The overall aim is to introduce students to the microstructure of modern financial markets in general, and to algorithmic trading in particular. Algorithmic trading refers to the use of robots (automatic order submission computer program) to accomplish a certain trading goal, such as automatic market making, statistical arbitrage, technical analysis, portfolio rebalancing, etc. Students will be given the opportunity to get hands-on experience in purposely designed online financial markets, as manual traders, or as algorithmic traders, depending on programming skills and career concerns.</p> <p>On successful completion of this subject students should be able to:</p> <ul style="list-style-type: none"> # Explain the key features of the microstructure of financial markets # Successfully trade in a number of different trading systems # Conceive of, and if with computer skills, program, algorithms for the automatic execution of trading strategies # Differentiate between types of trading strategies # Back-test algorithmic traders or test them in an experimental setting # Opine in an informed way about the advantages and drawbacks of algorithmic trading
Assessment:	<p>A Group Assignment (at most 3 per group/term report) comprising one report of between 2000 and 2500 words, due week 12, (40%) Online Quizzes, due weekly, (40%) Responses to Online Forum Queries (students post queries on class material and peers answer; answers will be graded), throughout semester, (10%) Class Participation, throughout semester, (10%)</p>
Prescribed Texts:	<p>You will be advised of prescribed texts by the subject coordinator.</p>
Breadth Options:	<p>This subject is not available as a breadth subject.</p>
Fees Information:	<p>Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees</p>
Generic Skills:	<p>On successful completion of this subject, students should have improved the following generic skills:</p> <ul style="list-style-type: none"> # Oral communication # Written communication # Problem solving # Thinking outside the box # Team work # Critical thinking # Evaluation of data and other information # Using computer software