

ECO463/ECO2510: Financial Market Microstructure

Please note that the next 4 pages contain the syllabus for ECO463 (undergraduate students) and the last 4 pages contain the syllabus for ECO2510 (graduate students).

ECO463: Financial Market Microstructure

Class Location and Time	Tue 10am-12pm (RW 143) and 1074 SS Wed 6pm-7pm (SS 1074) Not all hours are used, detailed will be on the portal.
Instructor	Professor Katya Malinova
Office Location	GE 211
Office Hours	TBA
Phone	(416) 978 5283
E-mail address	katya.malinova@utoronto.ca
Course Website	Blackboard

Course Description and Objectives: Security prices evolve through a large number of bilateral trades, performed by people that have specific, well-regulated and institutionalized roles. Market microstructure is the subfield of financial economics that studies the price formation process. Using the lens of theoretical economic models, this course reviews insights concerning the strategic trading behaviour of individual market participants, and models are brought market data. The course further studies how public and private information, market regulation, and trading arrangements, such as limit order books or dark pools, affect behavior. The nature of this course is *academic*.

Prerequisites & Exclusions: See the Academic Calendar. Prerequisites are strictly checked and enforced and must be completed before taking a course. By taking this course you acknowledge that you will be removed from the course at any time if you do not meet all requirements set by the Department of Economics.

Textbook: The course is based on *original research papers* of which I will present tuned-down versions in class. *The relevant papers will be listed on the slides, and thus your reading list will be updated throughout the term.* There is no single textbook for the course. For background reading on the empirical tools, I recommend Joel Hasbrouck: *Empirical Market Microstructure* (2007, Oxford University Press) (hereafter: JH); this book is a graduate level text, and the material in class will be taught at a lower level. For discussions on market liquidity and the theoretical trading models (which will be discussed in the course), I suggest *Market liquidity : theory, evidence, and policy* by Thierry Foucault, Marco Pagano, and Ailsa Roëll. A classic book is *Market microstructure theory* by Maureen O'Hara. Some of the institutional details are explained in Larry Harris: *Trading and Exchanges - Market Microstructure for Practitioners* (2004, Oxford University Press). However, market structure and research on market structure develop so rapidly that any text will be out of the by the time the ink is dry. Professor Hasbrouck has an excellent set of (as up-to-date as it gets) notes that outline trading procedures ("Securities Trading: Principles and Procedures", focusing on the U.S. markets). These are available on his website: <http://people.stern.nyu.edu/jhasbrou/TeachingMaterials/STPPms11d.pdf>.

Industry Practitioner Talks: I am planning to hold 2 practitioner talks in November. These talks are part of the course, and they will be schedules on Wednesday evenings. Attendance is mandatory. You are expected to appear presentable and to be prepared so that you can ask intelligent questions during the Q&A portion of the talk.

Assessment and Grade Composition

This is a research oriented course that heavily relies on class discussion. Thus students' class participation is imperative, silent consumption is not sufficient. The other major components are the final exam and three writing assignments.

Type	Length	Deadline	Weight
Final	3 hours	TBA	30%
Data Project: Proposal and Lit Review	2,000 words	Oct 24	15%
Referee Report	2,000 words	Nov 14	20%
Data Project: Final Report	3,000 words	Nov 28	25%
Class participation*			10%

*Disclaimer: Class participation includes pre-prepared questions that are to be submitted 24 hours in advance of guest and grad student (ECO2510) presentations. Presentations slides are to be submitted one week in advance. The slides will be made available via portal to all students in ECO463 and ECO2510 one week in advance, in order to allow sufficient time for question prep.

All assignments are mandatory. Details regarding specific assignments will be posted on the portal.

Classroom attendance is expected – including guest lectures and/or graduate student presentations – and very highly recommended. Not everything that I say in class is on the slides.

All writing assignments are due on the day of the lecture, before the start of the class. For every day or part thereof that you miss the deadline, your grade for that piece will be lowered by 5 points (out of 100 points total per assignment), until your assignment grade is 0 (i.e., you can get a negative grade on an assignment). There is a 3 day grace period for each written assignment: the penalty is waived if the assignment is submitted within 3 days, but a 4-day penalty applies if the assignment is submitted on day 4.

For the *empirical* project two people are expected to work together. Both group members are responsible that the project write-up does not contain plagiarised components. There is no midterm test.

Basis for Grading of Writing Assignments, and the Final Exam: The final is cumulative in nature, three hours in duration, and may consist of true/false, multiple choice, short answer, and/or essay questions. Responses are graded based on accuracy. Calculators and a formula sheet (details are below) are permitted during tests/exams. The exam will be based on the topics covered in class, assignments, discussions, and assigned readings. Students should be prepared to answer questions that are conceptual, quantitative and/or descriptive. Writing assignments and presentations will be graded for content and exposition. The best presentations will be clear, well-organized, correct, inspiring. Presenters' answers to students' questions will be graded. Grades over 90% on assignments require original ideas.

Practice Problems: I will post the past exam, but without solutions. You should consult me during my office hours if you have queries about the past exam questions. No other practice problems will be provided.

Specifications for the Formula Sheet: Your formula sheet must have the following format: one page, double-sided, hand-written or type-set, letter-sized paper containing formulae or simple expressions, but not full paragraphs of text, derivations of formulae, or solutions to past questions. The purpose of the formula sheet is to remind you of formulae that you need for computations, and it should be the result of extensive studying.

Appeals. You must put your appeal in writing and you must justify in detail why you think that you deserve a higher mark. Incomplete requests will not be considered. Note that I will reconsider the assignment as a whole and an appeal may lead to a lower overall grade.

Laptop, tablet, and smartphone policy. You are discouraged from using laptops during class as the typing creates excessive noise. Furthermore, it is expected that students will use technology responsibly, with consideration for their fellow students and other members of the University community. Laptops and smartphones are not to be used during class for email, instant messaging, web browsing, or any other activity that is disruptive to other students, the instructor, or the classroom environment. Violation of this technology policy may lead to a prohibition on all electronic equipment use for all students to ensure a productive classroom environment for everyone.

Email Communication. I will use Blackboard to send out messages and it is your responsibility that your account is set up to receive message from the UofT portal. Please be sensitive to the fact that it can take considerable time for the instructor to respond with the due care that each query deserves.

If you do need to send email, to help prevent your message from being labelled as spam, be sure you indicate ECO463 in the subject line. I will reply to legitimate email inquiries from students within two working days. If you do not receive a reply, resubmit your question(s). I do not answer e-mails on the weekends and in the last 36 hours before the final exam.

TA Support: TA support for this course is very limited and thus there will be no TA office hours or review sessions.

Official statement on academic integrity: All students, faculty and staff are expected to follow the University's guidelines and policies on academic integrity. For students, this means following the standards of academic honesty when writing assignments, citing and using source material appropriately, collaborating with fellow students, and writing tests and exams. Ensure that the work you submit for grading represents your own honest efforts. Plagiarism. Representing someone else's words as your own or submitting work that you have previously submitted for marks in another class or program is a serious offence that can result in sanctions. Speak to me or your TA for advice on anything that you find unclear. Also, see the U of T writing support website at www.utoronto.ca/writing. Consult the Code of Behaviour on Academic Matters for a complete outline of the University's policy and expectations.

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Ongoing Learning Disability or Accommodation Requirement

Students with diverse learning styles and needs are welcome in this course. If you have an ongoing disability issue or accommodation need, you should register with Accessibility Services (AS) (accessibility.utoronto.ca) at the beginning of the academic year. Without registration, you will not be able to verify your situation with your instructors, and instructors will not be advised about your accommodation needs. AS will then assess your medical situation, develop an accommodation plan with you, and support you in requesting accommodation for your course work. Remember

that the process of accommodation is private: AS will not share details of your condition with any instructor, and your instructors will not reveal that you are registered with AS.

Preliminary and Tentative Course Structure

I will provide reasonably detailed slides for each topic, the chapters in JH are to be viewed as supplements/background reading. The slides will also list the original research papers that the presentation covers. Dealing with some of these topics will take more than one lecture.

Topic	Content	Material
1	Introduction and Overview of Markets and Market Structure	
2	Inventory cost models	
3	Asymmetric info models: Kyle & Glosten and Milgrom	
4	Limit order markets	
5	Empirical measurement of trading costs	
6	Maker-taker pricing	
7	Dark trading	
8	High frequency trading	
9	New trends and technologies (time-permitting)	

ECO2510: Financial Market Microstructure

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For the *empirical* project two people are expected to work together. Both group members are responsible that the project write-up does not contain plagiarised components. There are no tests or exams.

Presentations: Students are expected to work in groups of two, each talk should aim for 15 minutes and be prepared to answer students' questions. Presentations slides are to be submitted one week in advance.

Basis for Grading of Writing Assignments, and Presentations: Writing assignments and presentations will be graded for content and exposition. The best presentations will be clear, well-organized, correct, inspiring. Presenters' answers to students' questions will be graded. Grades over 90% on assignments and on the presentations require original ideas.

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