F771
Financial Economics I
Winter 2021 Course Outline

Finance and Business Economics Area
DeGroote School of Business
McMaster University

COURSE OBJECTIVE

This course is a first Ph.D.-level course in asset pricing and modern portfolio theory. The goal of this course is to provide you with an overview of major theories, empirical approaches and results in these areas in a discrete time setting.

INSTRUCTOR AND CONTACT INFORMATION

Dr. Ron Balvers
Title: Professor
Email: balvers@mcmaster.ca
Office: DSB A105
Office Hours: by appointment
Class Time: Tuesday 10:00 am – 1:00 pm, Virtual

COURSE DESCRIPTION

This course deals with the issues of Asset Pricing and Portfolio Theory. It focuses on the factors determining the risk of individual financial and non-financial assets, the measurement of these risk factors, and the related portfolio choices. The risk factors are of course central arguments in the determination of the prices of the financial assets. Emphasis is on a solid theoretical foundation in deriving the risk determinants, which is based on general economic principles and specific general equilibrium models as used in the economics literature. The method is one of discrete-time dynamics which allows presentation of standard finance results, typically derived in continuous time, but with a minimum of mathematical ballast.

AUDIENCE AND PREREQUISITES

This course is intended mainly for first-year finance Ph.D. students. However, doctoral students and advanced master's students from other areas are also welcome to take the course.

The course assumes background knowledge in microeconomics and finance theory (at least at the master's level). It also requires a mathematical background that includes upper-level undergraduate calculus, matrix algebra and statistics.

LEARNING OUTCOMES

At the end of the course, students are expected to: (1) be familiar with the asset pricing and portfolio choice literature in general; (2) have an in-depth understanding of modern theories of asset pricing and portfolio choice; (3) have the skills and understanding to apply and adapt standard asset pricing models to conduct independent research.

REQUIRED COURSE MATERIALS AND READINGS

[Required] Class Notes. These are available electronically. An older version is on my home page at http://profs.degroote.mcmaster.ca/business/balvers, but please remind me to send you the updated version.

[Recommended] Bali, Turan G., Robert F. Engle, and Scott Murray. *Empirical Asset Pricing: The Cross Section of Stock Returns*, Hoboken, NJ: John Wiley & Sons, 2016

[Recommended] John H. Cochrane. *Asset Pricing*, Princeton, NJ: Princeton University Press, first edition, 2001 or updated edition, 2004.

[Recommended] Campbell, John Y., Andrew W. Lo, and A. Craig MacKinlay. *The Econometrics of Financial Markets,* Princeton, NJ: Princeton University Press, 1997.

[Recommended] Back, Kerry E. *Asset Pricing and Portfolio Choice Theory*, Toronto, ON: Oxford University Press, 2010.

EVALUATION

Learning in this course results primarily from in-class discussion and out-of-class analysis and study. Your learning will be tested by means of two exams, a term paper, and homework assignments. The assignments involve use of Matlab and apply asset pricing models to actual data.

Your final grade will be calculated as follows: A midterm and a final exam, each counting for 30% of the grade; a term paper counting for 30% of the grade; and four to seven homework assignments, together counting for 10% of the grade.

There will be a straight grading scale based on the percentage earned (with the aforementioned weights) of the maximum score: A+ ↔ 90% - 100%; A ↔ 85% - 89%; A- ↔ 80% - 84%; B+ ↔ 77% - 79%; B ↔ 73% - 76%; B- ↔ 70% - 72%; F ↔ below 70%. Attendance is expected but will not be factored into the grades. Make-ups or a grade of Incomplete will not be given unless a satisfactory excuse is provided.

THE TERM PAPER

Students are required to turn in one term paper of around fifteen typed, double-spaced pages. In the paper you may present and process an original idea. Alternatively, you may try to reproduce the empirical results of a previously published paper in the area of financial economics; this is a minimum requirement: a good term paper might also try ways to improve on the existing work by extending the sample period, including different variables, using different econometric methods, or, generally, checking the robustness of the results.

The time table for the paper is as follows. First, on *Tuesday January 26* you must get approval from me for the paper you choose to reproduce and you must explain to me how you will get the relevant data. Second, on *Tuesday March 9* you are required to submit and discuss in class your initial regression results (or theoretical results as the case may be). Third, the complete paper is due in our class of *Tuesday March 30*. Note that submission of your paper to me later than March 30 will result in a grade of 0 on the paper, unless a university-approved excuse can be provided for the delay. It is therefore very important that you start work on your paper early and that you have your data in hand well before the midterm.

While I will be happy to provide you with suggestions on how to proceed on your paper during the semester, the version of the paper you hand in to me on March 30 will be final and your term paper grade will be based on this version. My criteria for judging your paper are the following: (1) accuracy: correctness of your interpretation of the paper to be replicated and thoroughness in conducting the replication (or correct derivation of your theoretical results as the case may be); (2) writing: organization and clarity, especially as related to exposition and comparison of your results to the original study (or other work as the case may be); (3) degree of difficulty of the project; (4) originality: the extent to which you contribute or suggest additions to the original study (or other work as the case may be).

MISSED ACADEMIC WORK

Late assignments will not be accepted. No extensions are available except under extraordinary circumstances. Please discuss any extenuating situation with your instructor at the earliest possible opportunity. Students unable to write the mid-term or final exam at the posted exam time, or to complete an assignment or the term paper at the posted time due to the following reasons: religious; work- related (for part-time students only); representing university at an academic or varsity athletic event; conflicts between two overlapping scheduled exams; or other extenuating circumstances, have the option of applying for special arrangements. If an exam or assignment is missed without a valid reason, students will receive a grade of zero (0) for that component.

POTENTIAL MODIFICATIONS TO THE COURSE

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email weekly during the term and to note any changes.

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the *Academic Integrity Policy*, located at:

www.mcmaster.ca/academicintegrity

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not your own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations

AUTHENTICITY / PLAGIARISM DETECTION

In this course we will be using a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. Students will be expected to submit their work electronically either directly to Turnitin.com or via Avenue to Learn (A2L) plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish to submit their work through A2L and/or Turnitin.com must still submit an electronic and/or hardcopy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com or A2L.

All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). To see the Turnitin.com Policy, please visit;

www.mcmaster.ca/academicintegrity.

COURSES WITH AN ON-LINE ELEMENT

This course uses on-line elements (Avenue to Learn, Zoom). Students should be aware that, when they access Avenue to Learn or Zoom, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course.

Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure, please discuss this with the course instructor.

ONLINE PROCTORING

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

CONDUCT EXPECTATIONS

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the *Code of Student Rights & Responsibilities* (the "Code"). All students

share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online**.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue to Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students' access to these platforms.

ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES

Students with disabilities who require academic accommodation must contact Student Accessibility Services (SAS) at 905-525-9140 ext. 28652 or sas@mcmaster.ca to make arrangements with a Program Coordinator. For further information, consult McMaster University's *Academic Accommodation of Students with Disabilities* policy.

ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDIGENOUS OR SPIRITUAL OBSERVANCES (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students should submit their request to their Faculty Office **normally within 10 working days** of the beginning of term in which they anticipate a need for accommodation <u>or</u> to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

COPYRIGHT AND RECORDING

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors.

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

EXTREME CIRCUMSTANCES

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.

REQUESTING RELIEF FOR MISSED ACADEMIC WORK

Students may request relief from a regularly scheduled midterm, test, assignment or other course components. Please refer to the policy and procedure on the DeGroote website at the link below;

http://ug.degroote.mcmaster.ca/forms-and-resources/missed-course-work-policy/

POTENTIAL MODIFICATION TO THE COURSE

The instructor reserves the right to modify elements of the course during the term. There may be changes to the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to **check their McMaster email and course websites weekly during the term and to note any changes.**

ACKNOWLEDGEMENT OF COURSE POLICIES

Your enrolment in Commerce 3FB3 will be considered to be an implicit acknowledgement of the course policies outlined above, or of any other that may be announced during lecture and/or on A2L. **It is your responsibility to read this course outline, to familiarize yourself with the course policies and to act accordingly.**

Lack of awareness of the course policies **cannot be invoked** at any point during this course for failure to meet them. It is your responsibility to ask for clarification on any policies that you do not understand.

COURSE DELIVERY

GRADE COMPONENT	WEIGHT	DESCRIPTION
Midterm	**30%**	Take-home
Term Paper	**30%**	Replication study
Assignments	**10%**	Between four and seven assignments
Final Exam	**30%**	Take-home

ACTIVITY	DELIVERY	DESCRIPTION	TOOL(S)
Readings	Asynch	Tied to weekly discussion prompts	Readings to be provided
Live Lectures	Synch	3hr. live session; opportunity to elaborate on content, present challenges, engage discussion	Zoom

COURSE SCHEDULE

WEEK	DATE	TOPICS AND ASSIGNMENTS
1	Tue. Jan 12	Preliminaries on Risk and Time Preference. Valuation Approaches and Asset Pricing.
2	Tue. Jan 19	Continuation of Preliminaries Discussion Review of Mean-Variance Analysis and Portfolio Choice.
3	Tue. Jan 26	Choose and get approval for your term paper topic. The CAPM: Sharpe-Lintner Model, Zero-Beta CAPM. Homework set #1 due.
4	Tue. Feb 2	The CAPM: Empirical Specification, Roll Critique. Homework set #2 due.
5	Tue. Feb 9	Other static asset pricing models: Non-Tradable Assets and Human Capital, Durable Consumption Goods, The International CAPM.
6	Tue. Feb 16	Other static asset pricing models: Arbitrage Pricing. Homework set #3 due.
7	Tue. Feb 23	Empirical approaches to Arbitrage Pricing. The Fama-French three-factor and five-factor Models.
8	Tue. Mar 2	Midterm. All material covered to date.
9	Tue. Mar 9	Asymmetric Information: Market Efficiency, Grossman-Stiglitz Model, Adverse Selection, Insider Trading. Discuss initial regression results for your term paper.

10	Tue. Mar 16	Liquidity and Asset Pricing: Amihud and Mendelson model, Acharya and Pedersen model. Homework set #4 due.
11	Tue. Mar 23	General issues in Asset Pricing: Complete Markets, Pricing Kernels, Conditional Asset Pricing and Predictability, Derivatives Pricing.
12	Tue. Mar 30	Dynamic Asset Pricing: Dynamics and the CAPM, the Merton Model, the Consumption CAPM. Term paper due.
13	Tue. Apr 6	Dynamic Asset Pricing: Production-Based Asset Pricing. Homework set #5 due.

Note: The above schedule is subject to change.

Final Exam: between April 13 and April 28