

**Commerce 4FF3
Portfolio Theory & Management
Fall 2019 Course Outline**

**Finance Area
DeGroot School of Business
McMaster University**

COURSE OBJECTIVE

This course offers an advanced treatment of investment decision-making. It explains in a formal and systematic fashion those concepts underlying portfolio investment decisions under risk. By using portfolio selection models, it also seeks to provide intuitive appealing criteria for such decisions. Besides covering recent research advancements in portfolio theory, the course has its emphasis on various practical and institutional issues pertaining to portfolio management as well.

INSTRUCTOR AND CONTACT INFORMATION

**Date & Time: Thur 11:30 – 14:20
Alicia Damley, CFA, CPA, CA**

Instructor

damleya@mcmaster.ca

Office: TBA

Office Hours: By appointment only

Class Location: KTH B124

Student TA

TBC

@mcmaster.ca

Office: TBC

Office Hours: TBC

Course website: Avenue 2 Learn

COURSE ELEMENTS

Credit Value: 3	Leadership: Yes	IT skills: No	Global view: Yes
A2L: Yes	Ethics: No	Numeracy: Yes	Written skills: No
Participation: Yes	Innovation: Yes	Group work: Yes	Oral skills: Yes
Evidence-based: Yes	Experiential: No	Final Exam: No	Guest speaker(s): No

COURSE DESCRIPTION

The course starts with an overview of the portfolio management process, along with various practical strategies for portfolio revisions. The institutional environment is described. Among various practical issues pertaining to portfolio analysis, of special interest are issues that affect the tractability of the analysis when it attempts to capture short-sale transactions.

Considered next are some basic portfolio concepts. The coverage starts with a brief review of utility theory. It then provides alternative justifications for the mean-variance approach. If neither justification is considered adequate, a simple remedy is also provided and justified.

Once the fundamental materials have been covered, the analysis begins with two-security and three-security illustrations. With equally weighted portfolios being an example, more portfolio concepts are introduced. The course then presents, in considerable detail, portfolio selection under a simplifying assumption of short sales. The assumption allows efficient allocations of investment funds to be determined directly and analytical properties of the portfolio solution to be explored.

Various empirical and analytical issues pertaining to the sample covariance matrix of security returns are considered. To complement the analytical materials involved, spreadsheet-based illustrations are provided as well.

Considered next is portfolio analysis in the presence of a risk-free security. The analysis now becomes a two-part process. The first part pertains to the determination of the optimal risky portfolio regardless of any specific risk-return preferences of the investors involved. The second part pertains to the allocation of investment funds between the risk-free security and the optimal risky portfolio. It is the second part that knowledge about the investors' risk-return preferences is required. The course then examines some analytical issues and introduces a more realistic assumption about short sales.

The course then considers portfolio selection with short sales disallowed. An algorithm for portfolio construction, called the critical line method as developed by Harry Markowitz, a 1990 Nobel Laureate, is presented. Also considered is a simpler, but analytically equivalent, version of the algorithm, as well as a numerical approach for solving directly the same portfolio selection problem with spreadsheet tools on computers.

In order to establish some intuitive appealing criteria for portfolio selection, the covariance structure of security returns is then characterized by various models. The constant correlation model is the simplest among these models. It characterizes the correlations of returns of all securities considered to be the same. The single index model considers individual security returns as driven by the return of a market index; it uses the beta coefficients of individual securities to capture their relevant risk in a portfolio context. These models are then extended to account for group effects (such as industrial effects) on the portfolio choice.

Equilibrium models, including the well-known capital asset pricing model (CAPM) and the lesser known Arbitrage Pricing Theory (APT) are then described in detail. If investors behave as portfolio theory suggests they should, then their actions can be aggregated to determine prices at which securities will sell in the market.

LEARNING OUTCOMES

Upon successful completion of this course, students will be able to complete the following key tasks:

- Develop a solid foundation in modern portfolio theory and an understanding of portfolio management in practice
 - As the use of spreadsheet tools is an important course element, acquire some practical related spreadsheet skills
-

COURSE MATERIALS AND READINGS

Required:

Course Materials Are Available on Avenue To Learn

- <http://avenue.mcmaster.ca>

Textbook:

Modern Portfolio Theory and Investment Analysis 9th Edition, E. Elton, M. Gruber, S. Brown & W. Goetzmann, 2014.

EVALUATION

Notes about the types of assessments used as well as notes regarding how group work will be evaluated.

Missed tests/exams will receive a grade of zero unless the student has submitted and been approved for a Notification of Absence or MSAF. Late assignments will be penalized xxxxx% for each day they are late. Your final grade will be calculated as follows:

Components and Weights

Assignment (2)	30%
Mid-Term	30%
Final Exam (cumulative)	40%
Total	100%

NOTE: The use of a McMaster standard calculator is allowed during examinations in this course. See McMaster calculator policy.

Communication and Feedback

Students who wish to correspond with instructors or TAs directly via email must send messages that originate from their official McMaster University email account. This protects the confidentiality and sensitivity of information as well as confirms the identity of the student. Emails regarding course issues should NOT be sent to the Area Administrative Assistants. Instructors are required to provide evaluation feedback for at least 10% of the final grade to students prior to Week #9 in the term. Instructors may solicit feedback via an informal course review with students by Week #4 to allow time for modifications in curriculum delivery.

Course Deliverables

Assignment (2)

Assignments may be done in groups of up to 3 students.

Mid-Term and Final Examination

The mid-term and final examination will consist of multiple choice and written questions.

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 one's 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 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 go to;

www.mcmaster.ca/academicintegrity.

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 DeGroot website at the link below;

<http://ug.degroot.mcmaster.ca/forms-and-resources/misled-course-work-policy/>

STUDENT ACCESSIBILITY SERVICES

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca.

For further information, consult McMaster University's Policy for Academic Accommodation of Students with Disabilities:

<http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf>

***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 requiring a RISO accommodation should submit their request, including the dates/times needing to be accommodated and the courses which will be impacted, to their Faculty Office normally within 10 days of the beginning of term or 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.

<https://multifaith.mcmaster.ca/riso>

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 4FF3 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 SCHEDULE

**Commerce 4FF3
Portfolio Theory & Management
Fall 2019 Course Schedule**

WEEK	DATE	ASSIGNMENT
1	Thu, Sept 5	Discuss: Class Outline, Schedule, Participation, Courseware Overview & Introduction
2	Thu, Sept. 12	Portfolio Risk & Return: Key Principles Class re-scheduled to Sat, Sep 21 11:30 – 14:20, Room DSB B105
3	Thu, Sept. 19	The Mean-Variance Approach: Fundamental Concepts
4	Thu, Sep 26	Portfolio Selection with Frictionless Short Sales
5	Thu, Oct 3	Portfolio Selection in the Presence of a Risk-Free Security
6	Thu, Oct 10	Portfolio Selection without Short Sales Assignment #1 due @8pm via Avenue
7	Thu, Oct 17	<i>Winter Recess – no class</i>
8	Thu, Oct 24	Mid-Term
9	Thu, Oct 31	Single Index Model
10	Thu, Nov 7	Constant Correlation Model
11	Thu, Nov 14	Multi-Group & Multi-Index Models
12	Thu, Nov 21	Equilibrium models: CAPM
13	Thu, Nov 28	Equilibrium models: APT Assignment #2 due @6pm via Avenue