

## F714 Options and Futures Fall 2020 Course Outline

### Finance and Business Economics Area DeGroote School of Business McMaster University

#### COURSE OBJECTIVE

The goal of this course is to provide you with a good fundamental understanding of derivative securities. These securities include forward contracts, futures contracts, options, swaps and structured products. Emphases will be placed on three aspects of derivatives – the nature of their payoffs, how they are priced and how they can be used for hedging and speculative purposes.

#### INSTRUCTOR AND CONTACT INFORMATION

Instructor: Narat Charupat  
Office: DSB 314  
Tel: (905) 525-9140 Ext. 23987  
E-mail: [charupat@mcmaster.ca](mailto:charupat@mcmaster.ca)  
Office Hours: To be advised  
Class Location: On-line  
Class Time: Monday 19:00 – 22:00

Course Website: Please visit Avenue to Learn at <http://avenue.mcmaster.ca>

#### COURSE ELEMENTS

Credit Value:	3	Leadership:	No	IT skills:	No	Global view:	Yes
Avenue:	Yes	Ethics:	No	Numeracy:	Yes	Written skills:	Yes
Participation:	No	Innovation:	Yes	Group work:	Yes	Oral skills:	No
Evidence-based	Yes	Experiential	No	Final Exam	Yes	Guest Speaker	No

## **COURSE DESCRIPTION**

Derivative securities are now a very large topic which is growing very quickly. Therefore, this course is intensive and requires that you be interested and willing enough to commit yourself to it. The course will progress in a very linear fashion. The understanding of one class is dependent on the understanding of previous classes. As a result, it is essential that you keep up with the materials covered. You are strongly encouraged to attend every class and spend a sufficient amount of time on your own to review the materials before attending the next class.

The content of this course will include both theoretical and application components. It is my strong belief that theories provide us with a framework to use in our thinking process. Therefore, I expect to spend a good portion of this course on theories. However, applications of the theories will not be neglected and will be discussed alongside the theoretical discussion.

## **LEARNING OUTCOMES**

Upon completion of this course, students should:

- have a good understanding of derivative securities;
- be able to identify the risk-return patterns of these securities;
- be able to decide which securities to use for hedging and/or speculative purposes;
- be able to de-construct and re-construct complex securities using basic standard and derivative securities; and

most importantly, be able to think logically and systematically.

## **COURSE DELIVERY**

This course will be delivered through live sessions. Each live session will be recorded and its video will subsequently be posted on-line.

## **TEXTBOOK**

Options, Futures and Other Derivatives by John Hull, 10<sup>th</sup> edition (REQUIRED)

<b>EVALUATION</b>
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You will be evaluated based on four components according to the following weights:

***Components and Weights***

Assignment #1 (see Note 1)	10%
Assignment #2 (see Note 1)	10%
Midterm Exam (see Note 2)	40%
Final Exam	40%
<b>Total</b>	<b>100%</b>

Notes:

- 1) Both assignments can be done individually or with one partner. The first assignment will be given out on Friday October 9 and due back on Monday October 19. The second assignment will be given out on Friday November 27 and due back on Monday December 7.
- 2) The midterm exam is scheduled to take place on Monday October 26 from 19:00 to 22:00. Both the midterm exam and the final exam will be designed to reward your understanding *and* thinking.

***Grade Conversion***

At the end of the course your overall percentage grade will be converted to your letter grade in accordance with the following conversion scheme:

LETTER GRADE	PERCENT	POINTS
A+	90-100	12
A	85-89	11
A-	80-84	10
B+	75-79	9
B	70-74	8
B-	60-69	7
F	00-59	0

## ***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.

Students that are uncomfortable in directly approaching an instructor regarding a course concern may send a confidential and anonymous email to the respective Area Chair or Associate Dean:

<http://mbastudent.degroote.mcmaster.ca/contact/anonymous/>

## **ACADEMIC DISHONESTY**

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](http://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

## **ONLINE COURSE COMPONENT**

In this course, we will be using various on-line tools such as Zoom/MS Teams, Avenue to Learn and e-mail communications. Students should be aware that when they access these tools, 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. The available information is dependent on the technology used. 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

In this course, we 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 2 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.

## MISSED ACADEMIC WORK

### ***Missed Mid-Term Examinations / Tests / Class Participation***

Where students miss a regularly scheduled mid-term or class participation for legitimate reasons as determined by the Student Experience – Academic (MBA) office, the weight for that test/participation will be distributed across other evaluative components of the course at the discretion of the instructor. Documentation explaining such an absence must be provided to the Student Experience – Academic (MBA) office within five (5) working days upon returning to school.

To document absences for health related reasons, please provide to Student Experience – Academic (MBA) office the Petition for Relief for MBA Missed Term Work and the McMaster University Student Health Certificate which can be found on the DeGroote website at <http://mbastudent.degroote.mcmaster.ca/forms-and-applications/>. Please do not use the online McMaster Student Absence Form as this is for Undergraduate students only. University policy states that a student may submit a maximum of three (3) medical certificates per year after which the student must meet with the Director of the program.

To document absences for reasons other than health related, please provide Student Experience – Academic (MBA) office the Petition for Relief for MBA Missed Term Work and documentation supporting the reason for the absence.

Students unable to write a mid-term at the posted exam 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 mid-term exams; or other extenuating circumstances, have the option of applying for special exam arrangements. Such requests must be made to the Student Experience – Academic (MBA) office at least ten (10) working days before the scheduled exam along with acceptable documentation. Instructors cannot themselves allow students to unofficially write make-up exams/tests. Adjudication of the request must be handled by Student Experience – Academic (MBA).

If a mid-term exam is missed without a valid reason, students will receive a grade of zero (0) for that component.

### ***Missed Final Examinations***

A student who misses a final examination without good reason will receive a mark of 0 on the examination.

All applications for deferred and special examination arrangements must be made to the Student Experience – Academic (MBA) office. Failure to meet the stated deadlines may result in the denial of these arrangements. Deferred examination privileges, if granted, must be satisfied during the examination period at the end of the following term. There will be one common sitting for all deferred exams.

Failure to write an approved deferred examination at the pre-scheduled time will result in a failure for that examination, except in the case of exceptional circumstances where documentation has been provided and approved. Upon approval, no credit will be given for the course, and the notation N.C. (no credit) will be placed on the student's transcript. Students receiving no credit for a required course must repeat the course. Optional or elective courses for which no credit is given may be repeated or replaced with another course of equal credit value.

Requests for a second deferral or rescheduling of a deferred examination will not be considered.

Any student who is unable to write a final examination because of illness is required to submit the Application for Deferred MBA Final Examination and a statement from a doctor certifying illness on the date of the examination. The Application for Deferred MBA Final Examination and the McMaster University Student Health Certificate can be found on the DeGroote website at <http://mbastudent.degroote.mcmaster.ca/forms-and-applications/> Please do not use the online McMaster Student Absence Form as this is for Undergraduate students only. Students who write examinations while ill will not be given special consideration after the fact.

In such cases, the request for a deferred examination privilege must be made in writing to the Student Experience – Academic (MBA) office within five business days of the missed examination.

Special examination arrangements may be made for students unable to write at the posted exam time due to compelling reasons (for example religious, or for part-time students only, work-related reasons):

- Students who have religious obligations which make it impossible to write examinations at the times posted are required to produce a letter from their religious leader stating that they are unable to be present owing to a religious obligation.
- Part-time students who have business commitments which make it impossible to write examinations at the times posted are required to produce a letter on company letterhead from the student's immediate supervisor stating that they are unable to be present owing to a specific job commitment.

In such cases, applications must be made in writing to the Student Experience – Academic (MBA) office at least ten business days before the scheduled examination date and acceptable documentation must be supplied.

If a student is representing the University at an academic or athletic event and is available at an overlapping scheduled time of the test/examination, the student may write the test/examination at an approved location with an approved invigilator, as determined by the Student Experience – Academic (MBA) office.

In such cases, the request for a deferred examination privilege must be made in writing to the Student Experience – Academic (MBA) office within ten business days of the end of the examination period.

Note: A fee of \$50 will be charged for a deferred exam written on campus and a fee of \$100 for deferred exams written elsewhere. In cases where the student's standing is in doubt, the Graduate Admissions and Study Committee may require that the student with one or more deferred examination privileges refrain from re-registering until the examination(s) have been cleared.

## **ACADEMIC ACCOMMODATION FOR STUDENTS WITH DISABILITIES**

Student Accessibility Services (SAS) offers various support services for students with disabilities. Students are required to inform SAS of accommodation needs for course work at the outset of term. Students must forward a copy of such SAS accommodation to the instructor normally, within the first three (3) weeks of classes by setting up an appointment with the instructor. If a student with a disability chooses NOT to take advantage of an SAS accommodation and chooses to sit for a regular exam, a petition for relief may not be filed after the examination is complete. The SAS website is:

<http://sas.mcmaster.ca>

## ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDEGENOUS 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 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.

## 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.

## 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 and course websites weekly during the term and to note any changes.

## **ACKNOWLEDGEMENT OF COURSE POLICIES**

Your registration and continuous participation (e.g. on A2L, in the classroom, etc.) to the various learning activities of MBA F714 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, or through other communication means. **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.

<b>COURSE SCHEDULE</b>
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CLASS	DATE	TOPIC
1	Sept 14	Basic finance concepts. Introduction to futures, options and other derivative securities (Ch. 1)
2-3	Sept 21, 28	Mechanics of futures markets (Ch. 2). Pricing and valuing forward and futures contracts (Ch. 5)
4	Oct 5	Risk management – Hedging using forward and futures contracts (Ch. 3)
5	Oct 12 (See Note #2 below)	Interest rate forward and futures contracts (Ch. 4, 6)
6	Oct 19	Mechanics of options markets (Ch. 10). Basic properties of stock option prices (Ch. 11)
	Oct 26	Midterm Exam
7-8	Nov 2, 9	Pricing of stock options – Binomial trees (Ch. 13, 21)
9	Nov 16	Behavior of stock prices. Pricing of stock options – Black-Scholes formula (Ch. 14, 15)
10	Nov 23	Advanced topics on option pricing (Ch. 17, 18, 20, 23)
11	Nov 30	The Greek Letters (Ch. 19)
11	Dec 7	Swaps (Ch. 7)

Note: 1) The above schedule is subject to change.

2) October 12 is Thanksgiving Day. There will be no live session. However, students are asked to watch the video clips for the stated topics.