

MFIN712
Risk Management Principles
Fall 2021 Course Outline

Master of Finance
DeGroote School of Business
McMaster University

COURSE OBJECTIVE

The objective of the course is to provide an introduction as well as an in-depth understanding of issues in financial risk management. The focus is on the measurement of risk and the usage of related instruments to hedge the risk.

INSTRUCTOR AND CONTACT INFORMATION

Section: Wed 0830 - 1120
Instructor: Alicia Damley, CFA, CPA, CA, MBA
damleya@mcmaster.ca
Office Hours: by Appointment
Class Location: Virtual

TA:
@mcmaster.ca
Office Hours: TBA

Course website: Avenue 2 Learn (A2L)

Course resources and announcements will be communicated via A2L. This should be your first stop for course related information.

We are here to help you succeed!

Both our course TA, xxxx, a Mac Ph.D candidates, and I are here to help you navigate this course successfully!

Outside of class, it is easiest to connect via email. We can address a question quickly via email or setup a time to speak directly. I endeavor to respond to emails within 48 hours. For our mutual benefit and protection, please send all emails from your Mac id. If I have not responded to your inquiry within 48 hours, please re-send it in case it has been lost between our in-boxes.

Please always remember to:

- be courteous and respectful in all communication

- not send emails within 48 hours of a mid-term, exam or assignment due date. We are all busy. And it is important to plan accordingly!

COURSE ELEMENTS

Credit Value: 3	Leadership: Yes	IT skills: Yes	Global view: Yes
A2L: Yes	Ethics: No	Numeracy: Yes	Written skills: Yes
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 begins with a few preliminary risk management and financial engineering concepts that underpin much of the material of the course. The coverage includes a brief historical review of the risks that banks face and of the risk regulations in the banking sector.

The course then covers an overview of various market risk analytical techniques, including sensitivity analysis and stress testing. A fair amount of focus is placed on “internal models approaches” for capital adequacy and the use of “Value at risk” (VaR) as a metric for regulatory reporting. The pros and cons of various VaR approaches are described.

The focus of the course then shifts for a couple of lectures to counterparty credit risk (CCR) analytics and the emergence of a range of valuation adjustments (xVA’s) when pricing over the counter derivatives.

The credit risk crisis of 2007 serves as a turning point for risk management, representing a shift in regulatory philosophy from an objective of converging regulatory capital with economic capital to one of a divergence. The background behind this shift in focus and the implications for risk management will be discussed in detail for the remaining sections of the course.

As such, the course then turns to some of the risk categories that were underappreciated prior to the crisis, primarily focusing on liquidity risk and model risk. The course concludes with a discussion of economic capital.

LEARNING OUTCOMES

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

- Learn and compare the advantages and disadvantages of several methodologies for the measurement of various types of risk, including market, interest rate, credit, operational, liquidity and model risk
- Integrate the methodologies into an overall framework for enterprise risk management

COURSE MATERIALS AND READINGS

Avenue registration for course content, readings and case materials

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

Required textbook: **Risk Management and Financial Institutions 5th Edition**, John Hull, 2018

Campus Bookstore link:

<https://campusstore.mcmaster.ca/cgi-mcm/ws/txsub.pl?wsTERMG1=214&wsDEPTG1=FINANCE&wsCOURSEG1=712&wsSECTIONG1=DAY%20C01&crit cnt=1>

The textbook is available for purchase at McMaster’s bookstore. Other assigned and articles can be accessed electronically, for registered students, from McMaster’s library website.

COURSE OVERVIEW AND ASSESSMENT

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 10% for each day they are late. Your final grade will be calculated as follows:

<i>Grade Component</i>	<i>Weight</i>	<i>Description</i>
Engagement	20%	Participation / contribution to discussion on Zoom Allocation based on <i>quality</i> , not quantity, of participation. Attended only does not count! Each lecture we will apply the lecture material to two companies which will be chosen in the first lecture.
Case Analysis (2)	30%	Group size: up to 5 students Report format: max 10 pages, including appendices
Case Presentation (1)	10%	Choose one of the cases for a 20 min class presentation
Mid-Term Exam (cumulative)	40%	Venue: Online Format: MCQ and/or written answer Duration: 90 minutes

Our weekly interaction will occur as follows:

<i>Activity</i>	<i>Delivery</i>	<i>Description</i>	<i>Tools(s)</i>
Lecture Core Content	Asynchronous	Recorded lecture	Voice-over PPT via Avenue
Live Lectures	Synchronous	Live virtual session; opportunity to elaborate on content, present challenges, engage discussion	Zoom
Additional course resources	Asynchronous	End of chapter practice questions Additional readings	Via Avenue
TA Access	Asynchronous	1-hour live session with TA: discuss lecture materials and/or questions. Please contact our course TAs via email to advise of your attendance so that the students per session can be better managed for a best outcome for all.	Zoom
Group discussions	Both	Synchronous: breakout rooms during lecture Asynchronous: Zoom private groups	Synchronous: Zoom Asynchronous: Zoom

COURSE DELIVERABLES

Engagement

Please ensure that you sign-in with your full name as registered at McMaster for our virtual lectures. Attendance at each lecture does *not* equal participation!

Since student participation is an important component of this course, official McMaster student ID photographs will be used to ensure that each student is assessed accurately. The instructor will use the photograph to ensure the accuracy of participation marks, group work, and for identifying students for grading purposes.

Case Analysis

The case analysis assignment will be completed in groups of up to 5 students. Each group will select a case from the list provided. Allocation will be done on a first-come first-served basis. Details of the case analysis are found in a separate document on Avenue.

Students are strongly encouraged to explore the data and trading related resources available in-person and/or virtually in the DSB's Allen H. Gould Trading Floor.

Each group will present one of the cases as part of a 20 min in-class presentation.

Mid-Term Exam

The mid-term exam can include multiple choice and/or written answers.

The mid-term exam is **open-book** and will cover material from the textbook, any assigned readings, lectures and class discussion.

End of textbook chapter questions will be provided for student review and self-confirmation of mastery of material learning outcomes. These will be made available as part of each lecture's material on Avenue. These questions are also intended as foundation for the group project company analysis and provide a perspective on written questions on the mid-term exam.

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. All students must receive feedback regarding their progress prior to the final date by which a student may cancel the course without failure by default.

- For Level 1 and Level 2 courses, this feedback must equal a minimum of 20% of the final grade.
- For Level 3 courses and above, this feedback must equal a minimum of 10% of the final grade.

Instructors may solicit feedback via an informal course review with students by Week #4 to allow time for modifications in curriculum delivery.

REQUESTING RELIEF FOR MISSED ACADEMIC WORK

In the event of an absence for medical or other reasons, students should review and follow the Missed Term Work regulations that are outlined on the Master of Finance website;

<https://mfin.degroote.mcmaster.ca/current-students/missed-term-work/>

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. **It is your responsibility to understand what constitutes academic dishonesty.**

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.

For information on the various types of academic dishonesty please refer to the [Academic Integrity Policy](https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/), located at <https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/>

The following illustrates only three forms of academic dishonesty:

- plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
- improper collaboration in group work.
- copying or using unauthorized aids in tests and examinations.

AUTHENTICITY/PLAGIARISM DETECTION

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their

work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software.

All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

COURSES WITH AN ON-LINE ELEMENT

Some courses may use on-line elements (e.g. e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, 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 a course that uses on-line elements 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 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.

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 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.

RESEARCH USING HUMAN SUBJECTS

All researchers conducting research that involves human participants, their records or their biological material are required to receive approval from one of McMaster's Research Ethics Boards before (a) they can recruit participants and (b) collect or access their data. Failure to comply with relevant policies is a research misconduct matter. Contact these boards for further information about your requirements and the application process.

McMaster Research Ethics Board (General board): <https://reo.mcmaster.ca/>

Hamilton Integrated Research Ethics Board (Medical board): <http://www.hireb.ca/>

ACKNOWLEDGEMENT OF COURSE POLICIES

Your enrolment in Finance MFIN712 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

**Risk Management Principles
MFIN712
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WEEK	WEEK OF	TOPIC	TEXTBOOK
1	Sep 15	Class Outline, Schedule, Participation, Group selection Introduction; Trading in Financial Markets	1, 5
2	Sept 22	Market Risk Overview; Basel regulatory framework	7, 15
3	Sept 29	How Traders Manage their Risks; Interest Rate Risk	8, 9
4	Oct 6	Scenario Analysis and Stress Testing	22
5	Oct 13	Value at Risk & Expected Shortfall Historical Simulation & Extreme Value Theory (EVT)	12, 13
6	Oct 20	EVT; Model-Building Approach Case #1 due at beginning of lecture via Avenue	13, 14
7	Oct 27	CVA and DVA	20
8	Nov 3	Credit Value at Risk	21
9	Nov 10	The Credit Crisis of 2007 Post Global Fin Crisis Basel regulations	6, 16, 17
10	Nov 17	Liquidity Risk	24
11	Nov 24	Model Risk Management	25
12	Dec 1	Mid-Term	

WEEK	WEEK OF	TOPIC	TEXTBOOK
		Details: TBA	
13	Dec 8	Economic Capital and RAROC Case #2 due at beginning of lecture via Avenue	26