New York University Tandon School of Engineering
Department of Finance & Risk Engineering
Financial Risk Management (FRE 6123)
Fall Semester 2020
Professor James Adams, Ph.D., CFA
LinkedIn: /james-f-adams-phd-nyu
Fridays 9:00 am – 11:30 am on Zoom (see below)

Contact: ja146@nyu.edu
Office Hours: By e-mail appointment

Course Prerequisite: Graduate standing

Course Description: This M.S. in Finance & Risk Engineering course introduces and analyzes the techniques and problems of Financial Risk Management in the context of market, credit, and operational risks.

Course Objectives: This course will target the following objectives:

1.) Introduction to Market Risk Management: Identify and explain the pricing and valuation of financial instruments (interest rates, foreign exchange, equities, commodities and credit) in cash and derivative markets
2.) Credit Risk Management: Distinguish credit risks from others and quantify exposures, identify sources and mitigants of credit risk, understand portfolio risk and return measures and incorporate capital and liquidity risks
3.) Operational Risk Management: Identify, assess and manage operational risk in financial institutions
4.) Case Studies in Financial Risk Management: Review specific cases and examples of financial risk management practices at banks, non-bank financial institutions and corporations.

Course Structure: The course structure consists of a weekly lecture with course topics, readings, student presentations and assignments (periodic homework), group presentations and a midterm and final exam.

Please note that due to the ongoing COVID-19 pandemic, this course will regularly meet in a remote environment on Zoom until further notice. Weekly classes will be taped and made available on NYU Classes for students who are unable to attend a live session. Any changes to this structure will be announced to students on NYU Classes.

Readings: Weekly slides presented in class will be distributed to students in advance on NYU Classes. Core texts for the course are the four books in the Financial Risk and Regulation Series from the Global Association of Risk Professionals (GARP), entitled Market Risk Management, Credit Risk Management, Operational Risk Management and Asset and Liability Risk Management which may be ordered directly from GARP [ordering details to be provided as soon as they become available]. Additional readings as well as added links to useful articles or resources will be regularly posted on NYU Classes.

Course Requirements: As classes will take place remotely on Zoom on NYU Classes, students should familiarize themselves with this application prior to the first class. More information is available under the “NYU Classes: Zoom Guide for Students” at the following link: https://nyu.service-now.com/servicelink/

Weekly slides and readings should be reviewed by students prior to class. Students should attend Zoom classes with cameras on and come prepared to engage and participate in class via chat, breakout discussions, polls, or
other means. Each student will be asked to come to one class during the first several weeks of the semester prepared to present and discuss a relevant risk management topic for 5-10 minutes. Homework assignments will be posted on NYU Classes and should be submitted electronically to the teaching assistant on the due date prior to the start of class for full credit. Midterm and final exams will be open book, take home exams to be completed during class time and submitted electronically. Students earn points for the course as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Participation</td>
<td>10%</td>
</tr>
<tr>
<td>Homework</td>
<td>40%</td>
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<tr>
<td>Midterm</td>
<td>10%</td>
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<tr>
<td>Group Project</td>
<td>30%</td>
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<tr>
<td>Final Exam</td>
<td>10%</td>
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Assigned homework is due before the following class and will be penalized one point per day if submitted late. Total points from all assignments are ranked and graded on a curve with a 3.5 average.

**Group Project:** The project group will consist of a written and in-class presentation on a subject relevant to Financial Risk Management course topics. Details of the project will be shared separately in class and on NYU Classes. Students must form groups and have their subject approved by the Professor no later than the midterm exam date (October 16th). The deadline for electronic submission of written presentations is before the start of class on November 6th. Students unable to form a group on their own may be assigned to a group. It is expected that every group member contributes equally to the project, and no work for this project may be all or part of an assignment prepared for another course. Peer evaluations will be used in order to provide constructive feedback, but not included in the student's grade. Grades will be allocated individually.

Beyond the participation course points, consistent and constructive class participation may also result in a student’s grade being rounded up if very close to a higher letter grade once the curve is completed.

**Part I: Market Risk Management**

- **September 4**
  - **Introduction to Financial Risk Management**
    Market Risk Management (GARP), Ch. 1

- **September 11**
  - **Market Risk – Interest Rate Markets, Instruments and Risks**
    Market Risk Management (GARP), Ch. 3

- **September 18**
  - **Market Risk – Foreign Exchange, Equities, Commodities and Credit**
    Market Risk Management (GARP), Ch. 2 & 4

- **September 25**
  - **Market Risk – Derivative Instruments**
    Market Risk Management (GARP), Ch. 1 - 4

**Part II: Credit Risk Management**

- **October 2**
  - **Credit Risk Management**
    Credit Risk Management (GARP), Ch. 1 - 2

- **October 9**
  - **Credit Portfolio Risk Management**
    Credit Risk Management (GARP), Ch. 3

- **October 16**
  - **Midterm Exam**
Part III:  Operational Risk Management

October 23  Operational Risk Management
Operational Risk Management (GARP) Chs. 1-5

Part IV:  Asset, Liability and Enterprise Risk Management

October 30  Asset, Liability and Enterprise Risk Management
Asset and Liability Management (GARP), Ch. 1-2

November 6  Regulatory View of Credit Risk
Credit Risk Management (GARP) Ch. 4

November 13  Bank and Balance Sheet Risk Management
Asset and Liability Management (GARP) Chs. 1-4

Part V:  Financial Risk Management Case Studies

November 20  Risk Management Case Studies & Group Presentations
See Adams / Smith readings below

November 27  No Class – Thanksgiving Break

December 4  Risk Management Case Studies & Group Presentations
See Adams / Smith readings below

December 11  Final Exam Review and Possible Guest Speaker

December 18  Final Exam

Suggested Additional Readings: Suggested readings are footnoted throughout weekly course slides, in addition to those which will be posted on NYU Classes as follows:

Part I:


Part II:
“Credit Analysis Models,” James Adams and Donald J. Smith, Level II CFA Program Curriculum, Study Session 13: Fixed Income (2), Reading 35, 2019

Part II, IV:

Part V:
“Synthetic Floating-Rate Debt: An Example of an Asset-Driven Liability Structure”, James Adams and Donald J. Smith, The Journal of Applied Corporate Finance, Fall 2013, Vol. 25, No. 4: 50-60


Family, Health or Other Issues Arising During the Semester
If you encounter any unforeseen family, health or other issues during the semester which create circumstances that prevent you from meeting course requirements, please raise them directly with Deanna Rayment in the Office of Student Affairs at 646-997-3046 or deanna.rayment@nyu.edu before requesting any accommodation from the instructor.

Moses Center Statement of Disability
If you are a student with a disability who is requesting accommodations, please contact New York University’s Moses Center for Students with Disabilities (CSD) at 212-998-4980 or mosescsd@nyu.edu. You must be registered with CSD to receive accommodations. Information about the Moses Center can be found at www.nyu.edu/csd. The Moses Center is located at 726 Broadway on the 2nd floor.

NYU School of Engineering Policies and Procedures on Academic Misconduct
(School of Engineering Student Code of Conduct)

A. Introduction: The School of Engineering encourages academic excellence in an environment that promotes honesty, integrity, and fairness, and students at the School of Engineering are expected to exhibit those qualities in their academic work. It is through the process of submitting their own work and receiving honest feedback on that work that students may progress academically. Any act of academic dishonesty is seen as an attack upon the School and will not be tolerated. Furthermore, those who breach the School’s rules on academic integrity will be sanctioned under this Policy. Students are responsible for familiarizing themselves with the School’s Policy on Academic Misconduct.

B. Definition: Academic dishonesty may include misrepresentation, deception, dishonesty, or any act of falsification committed by a student to influence a grade or other academic evaluation. Academic dishonesty also includes intentionally damaging the academic work of others or assisting other students in acts of dishonesty. Common examples of academically dishonest behavior include, but are not limited to, the following:

1. Cheating: intentionally using or attempting to use unauthorized notes, books, electronic media, or electronic communications in an exam; talking with fellow students or looking at another person’s work during an exam; submitting work prepared in advance for an in-class examination; having someone take an exam for you or taking an exam for someone else; violating other rules governing the administration of examinations.
2. Fabrication: including but not limited to, falsifying experimental data and/or citations.
3. Plagiarism: intentionally or knowingly representing the words or ideas of another as one’s own in any academic exercise; failure to attribute direct quotations, paraphrases, or borrowed facts or information.
4. **Unauthorized collaboration:** working together on work that was meant to be done individually.

5. **Duplicating work:** presenting for grading the same work for more than one project or in more than one class, unless express and prior permission has been received from the course instructor(s) or research adviser involved.

6. **Forgery:** altering any academic document, including, but not limited to, academic records, admissions materials, or medical excuses.