

New York University Tandon School of Engineering

Department of Finance & Risk Engineering

Financial Risk Management (FRE 6123)

Fall Semester 2021

Professor James Adams, Ph.D., CFA

LinkedIn: /james-f-adams-phd-nyu

Fridays 11:00 am – 1:30 pm (216 Rogers Hall)

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 while this is an in person class, any changes to the subsequent in person format and/or class times will be announced in advance on Brightspace.

Readings: Weekly slides / materials will be distributed to students in advance on Brightspace. Core texts are the four Financial Risk and Regulation Series books from 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 (<https://www.garp.org/courses/financial-risk-and-regulation>) for \$75 for e-books and \$125 for print. Additional readings and links to relevant resources will be regularly posted on Brightspace.

Course Requirements: Weekly slides and readings should be reviewed by students prior to class. Students should come prepared to engage and participate in class. Homework assignments will be posted on Brightspace 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 closed book, closed note exams administered during class time and

students must bring a financial calculator to use for calculations. A total of 100 points are possible for the course:

Homework	40% (of which 5% is the Class Presentation)
Midterm	15%
Group Project	30%
Final Exam	15%

Assigned homework is expected to consist of the Class Presentation (5%) one more in-depth assignment (10%) and five additional assignments (5% each). Due dates will be strictly monitored, and students will be penalized a point per day for late submission. Total course points are ranked and graded on a curve with a 3.5 average. No extra credit will be offered.

Class Presentation: Each group is to lead a brief 10 to 15-minute verbal discussion at the beginning of class, providing a market update which includes one or more key financial market developments relevant to the course over the prior week. Students will be assigned to groups of three with pre-determined dates and no written submission is necessary.

Group Project: The project group consists of written and in-class presentations on a subject relevant to Financial Risk Management course topics. Project details will be shared separately in class and on Brightspace. Students must form or be assigned to groups and submit a written proposal of their group project prior to the midterm exam.

5% - Initial proposal due:	October 8th
5% - Revised proposal due:	October 22nd
10% - Final written project due:	November 12th
10% - In-class oral presentations:	Starting November 19th

Students unable to form a group and/or find a subject on their own will be assigned to a group and/or topic. Each group member is expected to contribute 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.

Consistent and constructive class participation may result in a student's grade being rounded up if very close to a higher letter grade once the curve is complete.

Part I: Market Risk Management

September 3, 2021	<u>Introduction to Financial Risk Management (Week 1)</u>
	Market Risk Management (GARP), Ch. 1
September 10	<u>Market Risk – Interest Rate Markets, Instruments and Risks</u>
	Market Risk Management (GARP), Ch. 3
September 17	<u>Market Risk – Foreign Exchange, Equities, Commodities and Credit</u>
	Market Risk Management (GARP), Ch. 2 & 4
September 24	<u>Market Risk – Derivative Instruments</u>
	Market Risk Management (GARP), Ch. 1 - 4

Part II: Credit Risk Management

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

October 8 **Credit Portfolio Risk Management**
Credit Risk Management (GARP), Ch. 3
Initial Group Proposal Due

October 15 **Midterm Exam**

Part III: Operational Risk Management

October 22 **Operational Risk Management**
Operational Risk Management (GARP) Chs. 1-5
Revised Group Proposal Due

Part IV: Asset, Liability and Enterprise Risk Management

October 29 **Asset, Liability and Enterprise Risk Management**
Asset and Liability Management (GARP), Ch. 1-2

November 5 **Regulatory View of Credit Risk**
Credit Risk Management (GARP) Ch. 4

November 12 **Bank and Balance Sheet Risk Management**
Asset and Liability Management (GARP) Chs. 1-4
Written Group Presentation Due

Part V: Financial Risk Management Case Studies

November 19 **Risk Management Case Studies & Group Presentations**

November 26 **Thanksgiving Recess – No Class**

December 3 **Risk Management Case Studies & Group Presentations**

December 10 **Risk Management Case Studies & Group Presentations (Possible Guest Speaker)**

December 17 **Final Exam**

Suggested Additional Readings: Suggested readings are footnoted throughout weekly course slides in addition to those posted on Brightspace.

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.

Inclusion Statement

The NYU Tandon School values an inclusive and equitable environment for all our students. I hope to foster a sense of community in this class and consider it a place where individuals of all backgrounds, beliefs, ethnicities, national origins, gender identities, sexual orientations, religious and political affiliations, and abilities will be treated with respect. It is my intent that all students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit. If this standard is not being upheld, please feel free to speak with me.