Financial Risk Management & Asset Pricing FRE6123 – Syllabus (Spring 2020)

Prof. Dan Rodriguez

Meeting Time: Saturdays from 10am – 12:30pm in Rogers Hall Rm 216

The purpose of this course is to introduce the concepts of financial risk management to you in both an academically rigorous and practical way to enable you to understand and apply important risk management analyses. These analyses are applied on a regular basis across the financial services industry, to include major buy-side and sell-side institutions. In addition, you will obtain hands-on experience with industry standard tools to complete risk analysis projects that will prepare you to become a quantitative risk analysis or quantitative portfolio analyst.

I have selected the required textbook for this course to provide you with a foundation for risk management analysis, *Derivative Securities, Financial Markets, and Risk Management 2nd Edition* (2019) by Robert Jarrow and Arkadev Chatterjea. We will use a second optional reference during the last part of course when we will discuss, *Portfolio Theory and Risk Management* (2014) by Maciej J. Capinski and Ekkehard Kopp.

I will supplement these two textbooks with complementary readings and current events from the financial press as appropriate.

GRADING

Evaluation of your performance in this course will be based upon three written homework assignments worth 8.33% each, a midterm exam worth 25% of your final grade and a final exam worth 50% of your final grade.

Homework Assignments = 8.33% ea. X 3 = 25% Total
Midterm Exam = 25%
Final Exam = 50%
Total Grade = 100%

Extra Credit will be provided for your performance in the Stocktrak Simulation. Students who perform better than the S&P500 throughout the course earn 5 extra credit points.

LETTER GRADES

Letter grades for the entire course will be assigned as follows:

Letter Grade	Points	Percent
A	4.00	Example: 92.5% and higher
A-	3.67	Example: 90.0 – 92.49%
B+	3.33	Example: 87.5% - 89.99%
B	3.00	Example: 82.5% - 87.49%
B-	2.67	Example: 80% - 82.49%
C+	2.33	Example: 77.5% - 79.99%
C	2.00	Example: 70.0% - 77.49%
F	.00	Example: 69.99% and lower

CLASS SCHEDULE

Wk 1	Introduction – Overview Presentation & Risk Management in Volatile Times, Chapters 1 – Course Textbook
Wk 2	Derivative Markets & Instruments, Forward Markets & Options, Chapters 4 - 5
Wk 3	Arbitrage and Trading, Chapter 6, ***Homework #1 Due***
Wk 4	Financial Engineering and Swaps, Chapter 7
Wk 5	Futures Trading, The Cost of Carry Model and the Extended Cost of Carry Model, Chapter 9, 11, 12

Wk 6	Options Markets and Trading and Option Trading Strategies, Chapters 14 - 15
Wk 7	The Black-Scholes-Merton Model, Chapter 19
Wk 8	**Midterm Exam**
Wk 9	Uses of Black-Scholes-Merton Model, Chapter 20
Wk 10	Yields & Forward Rates, Chapter 21 **Homework #2 Due**
Wk 11	Advanced Discussion of FRAs and Interest Rate Swaps, Chapter 22
Wk 12	Single-Period Binomial HJM Model / Multiperiod Binomial HJM Model Chapters 23 - 24
Wk 13	The HJM Libor Model & Risk Management Models Chapters 25 - 26
Wk 14	**Homework #3 Due** and Review Session
Wk 15	**Final** (Focused on the material covered after the mid-term exam)

The course instructor can be reached at dr190@nyu.edu or drodr87@gmail.com or by cell phone at 512-676-1246. Please text me since I am usually unable to take calls during the trading day.
Other important sources of information for your studies in risk management include the PRMIA website located at www.prmia.org.
A brief bio for your instructor is provided below for your reference. I look forward to an interesting and very educationally rewarding semester.

Best of luck,
Prof. Rodriguez

INSTRUCTOR BIO

Dr. Dan Rodriguez is currently the Chief Risk Officer at Light Sky Macro, LP, a global macro hedge fund based in Hudson Yards. Prior to his current role, he served as a Senior Risk Officer at Point 72 Asset Management with responsibility for supporting the risk management process of the long-short equity portfolio holdings and risk management of the Global Macro Group of the fund. Dan was previously a Managing Director in the Credit-Suisse Global Equities Division, serving as the Chief Risk Officer for the Systematic Market-Making Group of the Investment Bank. His responsibilities included the front-office risk management for a global cross-asset trading portfolio, which included the development of portfolio risk limits, daily and intra-day monitoring of portfolio risk profiles.

Dan joined Credit Suisse in June 2007 and moved to Point 72 in October of 2014. He has over seventeen years of risk management experience, including previous positions at Morgan Stanley, reporting to the CRO of the firm, with responsibility for market risk methodology for the Institutional Securities Group. He began his career as the risk manager for the Commodities Division at Morgan Stanley.

Dan holds a Ph.D. in Economics from M.I.T. and a Bachelor's of Science degree from the United States Military Academy and received a National Science Foundation Fellowship upon completion of his undergraduate studies. He received the PRMIA Higher Standard Award in 2011 for outstanding service in risk management and has published in leading academic journals such as the Journal of Finance, International Corporate Governance, and the Industrial Labor Relations Review. Dan served as the co-Regional Director of the New York City Chapter of PRMIA from 2011 – 2014.

Resources

- **Access your course materials**: NYU Classes (nyu.edu/its/classes)
- **Databases, journal articles, and more**: Bern Dibner Library (library.nyu.edu)
  NYU Virtual Business Library (guides.nyu.edu/vbl)
- **Obtain 24/7 technology assistance:** Tandon IT Help Desk (soehelpdesk@nyu.edu, 646.997.3123)
  NYU IT Service Desk (AskIT@nyu.edu, 212-998-3333)

Policies

Academic Misconduct

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 have 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.

Disability Disclosure Statement

Academic accommodations are available for students with disabilities. Please contact the **Moses Center for Students with Disabilities** (212-998-4980 or mosescsd@nyu.edu) for further information. Students who are requesting academic accommodations are advised to reach out to the Moses Center as early as possible in the semester for assistance.

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.