

Course Syllabus

SYSTEMATIC CREDIT INVESTMENT STRATEGIES FRE-GY 7841

Robert Benhenni, Adjunct Professor of Financial Engineering, Spring 2024

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Office hours:	By Zoom appointment, or in-person appt
Location/Time:	2 MetroTech 811 6:00-8:41 PM Thursday

FRE-GY 7841 introduces financial engineers to the development and analysis of systematic credit investments in the corporate credit markets including capital structure arbitrage and factor-based investment strategies. Due to the increased availability of corporate bond data and enhanced price transparency, algorithmic credit investments have been experiencing a growing interest among the investor community, and both hedge funds and asset management firms have been heavily investing in the infrastructure to offer such systematic credit investment strategies. In this course, we will first start with the analysis of basis trading arbitrage between credit default swaps and corporate bonds, then to capital structure arbitrage strategies including convertible bonds versus equity and senior debt versus junior debt. Finally, we will address factor investing in the credit markets which has generated significant interest by market participants and will explore the unique challenges in its implementation in this asset class.

Class organization:

Referenced textbooks:

- “Bond Markets, Analysis, and Strategies” by Frank J. Fabozzi
- “Credit Derivatives and Synthetic Structures” by Janet Tavakoli
- “Corporate Bond Markets: Instruments and Applications” by Moorad Choudhry
- “Asset Management: A Systematic Approach to Factor Investing” by Andrew Ang

Brightspace: Please follow the course requirements and announcements online weekly, as they are likely to change as the term progresses.

Recommended calculators: You may use any calculator. You may also use a smart phone app or simply use Excel in class.

Recommended analytic software: Excel, Python

Course grading:

- Group Project: Students (in groups of 2 or 3 students) need to select a project either in the development of a capital structure arbitrage strategy using real market and corporate data or in the implementation of a factor-based credit investment strategy using factors such as relative value, momentum and size. A report of 3-5 pages needs to be delivered in the last lecture. 50% of the grade
- Short midterm exam: 25% of the grade
- Homework: 15% of the grade
- Class participation: 10% of the grade

NYU Class Prerequisites: Basic stochastic calculus, statistics

Class outline (subject to revisions):

Lecture	Title	Dates
1	Overview of the Investment Grade and High Yield Credit Markets	March 13
2	Basis Arbitrage Trading: Credit Default Swap vs Corporate Bond	March 20
3	Capital Structure Arbitrage strategies: Convertible Bond vs Equity, CDS vs Equity, Senior Debt vs Junior Debt, CDS vs Equity Option	March 27
4	Value Investing in Credit	April 3
5	Momentum Investing in Credit	April 10
6	MIDTERM EXAM Size Effect in Credit Investing	April 17
7	Combining Factor Strategies in Systematic Credit Investments	April 24
8	FINAL PROJECT DUE	May 1

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.