# FRE-GY 9743
## Event-Driven Finance

## Instructor Information

- Mike Lipkin, Sacha Stanton- Adjuncts
- Instructor office hours: TBA
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## Course Information

- FRE-GY 6991
- Event-Driven Finance
- Course Description:

This course is an introduction to the impact of events on prices and volatility surfaces. The student is expected to spend large amounts of time at the terminal acquiring data and examining it- seeing how it conforms to expectation (or disagrees with prediction). Much of the data which we will rely on will be daily data available from the Optionmetrics IVY database (directly or via the WRDS portal). Half the course will be devoted to learning and exploiting data mining; half the course will be following event-driven changes.

Most of the practical learning will take place via problem sets. The problem sets will in some cases demand a great deal of effort; the experience of previous classes has been that the effort has been worth it.

Generic pricing models treat all events as a heat bath of noise. The simplest, such as Black-Scholes-Merton (BS) treat everything as white noise, with a single parameter, σ, the volatility, describing it. BS, or its discrete analogue Cox-Ross, will be our base model. The behavior of stocks and options will be referenced by implied volatilities (IV). In the presence of events, the IV-surface will change. With or without theory, we will try to understand the normal ways the IV-surfaces must change, as well as recognize the possibility of tradability.

The lectures will emphasize practical and theoretical aspects of events of different kinds. The problem sets will only demand practical/numerical work.

- Prerequisites: Familiarity and facility with Black-Scholes and the Greeks.
- Remote Instruction including Zoom Office Hours
- [Virtual meeting days and times, TBA

## Course Overview and Goals

### Upon completion of this course, students will be able to:

- Write and implement SQL queries to extract the pertinent financial data
- Anticipate the response of volatilities to likely events

- Understand the (in)consistency of option prices in an environment of potential news

# Course Requirements

### Class Participation

Attend all lectures

### Assignments
7 Problem Sets + 1 Project

### Tests & Quizzes

None

### Assigned Readings

None

### Grading of Assignments

The grade for this course will be determined according to the following formula:

| Assignments/Activities | % of Final Grade |
|---|---|
| Problem sets | 63% |
| Project | 37% |
| | |
| | |
| | |

**<Create a simple structure for your table so that it can be easily read. Avoid blank rows, columns, & merged cells.>**

# Letter Grades

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

| Letter Grade | Points | Percent |
|---|---|---|

| Grade | GPA | Percentage |
|---|---|---|
| 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 |

**<Create a simple structure for your table so that it can be easily read. Avoid blank rows, columns, & merged cells.>**

## View Grades

The TA will post scores as the PSs get graded

# Course Schedule

## Topics and Assignments- Tentative

| Week/Date | Topic | Reading | Assignment Due |
|---|---|---|---|
| [Week 1, insert date] | Introduction to Event Driven Finance | | |
| [Week 2, insert date] | Introduction to SQL and the laboratory | | PS 0 |
| [Week 3, insert date] | SQL Basics, IVY Tables | | |

| | | | |
|---|---|---|---|
| [Week 4, insert date] | Pinning (Statics) | | PS 1 |
| [Week 5, insert date] | Advanced SQL, Performance, IVY specifics | | |
| [Week 6, insert date] | Common Mistakes, SQL Functions and Stored Procedures | | PS 2 |
| [Week 7, insert date] | Events (Dynamics) Earnings and Drug Announcements | | PS 3 |
| [Week 8, insert date] | Hard-To-Borrows, Implied Dividends | | PS 4 |
| [Week 9, insert date] | Data Validation & Non-RDBMS databases | | PS 5 |
| [Week 10, insert date] | Takeovers | | |
| [Week 11, insert date] | Turbulence in Finance | | PS 6 |
| [Week 12, insert date] | The Good and the Bad of past projects | | |
| [Week 13, insert date] | Odds and Ends; Q&A; mock Quiz | | |
| [Week 14, insert date] | Student Projects | | |
| [Week 15, insert date] | Student Projects | | |
| [Week 16, insert date] | Student Projects | | |

**<Create a simple structure for your table so that it can be easily read. Avoid blank rows, columns, & merged cells.>**

## Tests and Quizzes

- None

# Course Materials

## Required Textbooks & Materials

- "Option Volatility & Pricing: Advanced Trading Strategies and Techniques" by Sheldon Natenberg
  http://www.amazon.com/gp/product/155738486X/102-2674608-7256112?v=glance&n=283155
- "SQL Server T-SQL Recipes" by Joseph Sack
  https://www.amazon.com/SQL-Server-T-SQL-Recipes-David/dp/1484200624/ref=dp_ob_title_bk

## 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)
- IVY Optionmetrics
- **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.