

Sabancı MiF Program
Spring 2022
MFIN 832 – Special Topics in Finance

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Course Objectives:

Financial modeling is the quantitative representation of the relationships among the variables of financial problems. A well-designed financial model captures the interdependencies among the variables at hand and makes it easy to answer “what-if” questions. Developing good financial models requires combining knowledge of finance and modeling skills. Students will be assumed to have a good working knowledge of the topics covered in the corporate finance, investments, and derivatives courses as well as a good comfort level in using Excel. Financial and statistical functions and more complex Excel and VBA (Visual Basic for Applications) operations such as using data tables, working with matrices, loops and arrays, and generating random numbers will be introduced as necessary. A large number of corporate finance, portfolio construction, option pricing, and fixed income models will be covered, with the aim of helping the students gain the necessary competencies to build appropriate financial models for each case. The overriding goal of this course is to get the students to the skill level where they can model and solve most financial problems they will face in the business world.

Learning Outcomes:

Upon successful completion of this course, the student should be able to:

1. Utilize spreadsheet models in basic financial calculations and proforma financial statements,
2. Implement various portfolio construction methods,
3. Build binomial tree-based models for option pricing,
4. Apply Monte Carlo simulation as a numerical method in option pricing, risk management, and Value-at-Risk (VaR) computation, and
5. Build spreadsheets to solve various bond market models.

Course Material:

The textbook for the course is **Financial Modeling, 3rd edition**, by **Simon Benninga, The MIT Press (2008)** ISBN: 978-0-262-02628-4 (hereafter, **Benninga**). You can get the newer 4th edition if you wish, but it is not necessary. Additional readings and Excel files will be posted on SUCourse.

Instructional Design:

The course delivery will be through lab-like interactive lectures. Each week's topic will be covered by creating Excel spreadsheets and/or writing VBA programs.

Grading:

In-Class Exercises (12 x 5%)	60%
Rolling Final Exam in the form of Quizzes (4 x 10%)	40%

Requirements:

To do well in this course, you should show a steady level of effort throughout the module. If your effort lacks at any point, you will immediately fall behind and will have a very hard time catching up.

There will be an in-class exercise in every session. In each exercise, we will work on Excel spreadsheets that will help improve problem-solving and modeling skills. These "draft" spreadsheets will be partially completed interactively, but each student is then expected to finish the full spreadsheet individually and submit via SUCourse by the end of the class period.

The course doesn't have a final exam but uses four quizzes distributed each week as a rolling final exam. Each quiz must be done individually and submitted through SUCourse. They will be posted at the end of each Saturday session and will be due at the beginning of the following Friday session. The last quiz is an exception as it is due on July 2, Saturday at 23:59.

There are no make-ups for missed assignments and missing an assignment without an acceptable excuse means getting a zero for that assignment. In any case, the general MiF program attendance policy applies. Oral exams may be scheduled to verify the quiz grades of the students.

Academic Honesty:

Learning is enhanced through cooperation and as such you are encouraged to work in groups, ask for and give help freely in all appropriate settings. At the same time, as a matter of personal integrity, you should only represent your own work as yours. Any work that is submitted to be evaluated in this class should be an original piece of writing, presenting your ideas in your own words. Everything you borrow from books, articles, or web sites (including those in the syllabus) should be properly cited. Although you are encouraged to discuss your ideas with others (including your friends in the class), it is important that you do not share your writing (slides, MS Excel files, reports, etc.) with anyone. Using ideas, text and other intellectual property developed by someone else while claiming it is your original work is *plagiarism*. Copying from others or providing answers or information, written or oral, to others is *cheating*. Unauthorized help from another person or having someone else write one's paper or assignment is *collusion*. Cheating, plagiarism and collusion are serious offenses that could result in an F grade and disciplinary action. Please pay utmost attention to avoid such accusations.

Specific to this course, it is important to know that submitting a computer file (e.g. Excel workbook) prepared by someone else, *even partially*, is cheating. You may talk to others about assignments but in the end you should be doing all the work. It is important that you do not share your solutions as Excel files with anyone until it has been graded. Sharing your file with others could easily tempt them to submit part or all of it as their own. This would be cheating and in most cases easy to detect. Once you share your file with someone, it could easily be forwarded to a lot of students and some of whom could cheat or plagiarize. Regardless of which side of the file-sharing you would be, the action would be the same.

Classroom policies and conduct

Sabancı MiF Program values participatory learning. Establishing the necessary social order for a participatory learning environment requires that we all:

- Come prepared to make helpful comments and ask questions that facilitate your own understanding and that of your classmates. This requires that you complete the assigned readings for each session before class starts.
- Keep cameras on throughout the lectures.
- Keep the microphones muted unless asking a question or responding to a question.
- Come to class (or join the Zoom meetings) on time.

Lectures & Attendance

Students are expected to attend all lectures and participate in discussions. Recordings of the lectures will be shared with the students through Google Drive, when necessary.

Grading

Students should write up their objections and submit them to me no later than a week after receiving their graded work. This document should clearly explain the basis of objection. Except for minor grading errors, no verbal objection is accepted.

Special needs students

Any student who, because of a disability, requires some special arrangements in order to meet course requirements should contact me as soon as possible to make the necessary accommodations.

Updates

Changes or additions to any of the policies above will be announced on the course website.

Course Schedule:

There may be changes in the list below due to timing constraints, class interest, or other reasons. If necessary, such changes will be announced in class, via email, and/or on SUCourse. It is your responsibility to check SUCourse and your e-mail on a regular basis.

Please note that Sessions 5 and 6 will take place on June 12 via Zoom (details are below in red). The class will not meet on June 11.

Session 1	Date & Time: June 3, 2022 – 18:00-21:00
	Topic: Introduction and Basic Financial Models
	Requirements: In-Class Exercise 1
	Benninga Chapters: 1, 30, 33, 35

Session 2	Date & Time: June 4, 2022 – 9:00-12:30 Topic: Cost of Capital Requirements: In-Class Exercise 2 Benninga Chapters: 2
Session 3	Date & Time: June 4, 2022 – 13:30-17:30 Topic: Financial Statement Modeling and Valuation Requirements: In-Class Exercise 3 Benninga Chapters: 3, 4
Session 4	Date & Time: June 10, 2022 – 18:00-21:00 Topic: Mean-Variance Optimization Requirements: Quiz 1 due; In-Class Exercise 4 Benninga Chapters: 8, 9, 10, 31, 34
Session 5	Date & Time: June 12, 2022 – 9:00-12:30 (via Zoom) Topic: Black-Litterman Model Requirements: In-Class Exercise 5 Benninga Chapters: 12, 13
Session 6	Date & Time: June 12, 2022 – 13:30-17:30 (via Zoom) Topic: Other Portfolio Construction Methods Requirements: In-Class Exercise 6 Benninga Chapters: --
Session 7	Date & Time: June 17, 2022 – 18:00-21:00 Topic: Option Models: Binomial Method Requirements: Quiz 2 due; In-Class Exercise 7 Benninga Chapters: 17
Session 8	Date & Time: June 18, 2022 – 9:00-12:30 Topic: Option Models: Monte Carlo Simulation Requirements: In-Class Exercise 8 Benninga Chapters: 18
Session 9	Date & Time: June 18, 2022 – 13:30-17:30 Topic: Delta Hedging and Portfolio Insurance Requirements: In-Class Exercise 9 Benninga Chapters: 20, 21
Session 10	Date & Time: June 24, 2022 – 18:00-21:00 Topic: Value-at-Risk Requirements: Quiz 3 due; In-Class Exercise 10 Benninga Chapters: 15
Session 11	Date & Time: June 25, 2022 – 9:00-12:30 Topic: Estimating Asset Pricing Models Requirements: In-Class Exercise 11 Benninga Chapters: 11
Session 12	Date & Time: June 25, 2022 – 13:30-17:30 Topic: Fixed Income Modeling Requirements: In-Class Exercise 12 Benninga Chapters: 25, 26, 27
	Quiz 4 due: July 2, 2022 at 23:59