IESE BUSINESS SCHOOL
University of Navarra

**Research Methods in Finance
Master of Research in Management 2023**

Instructor:	Stefano Sacchetto
Office:	E 317
Email:	ssacchetto@iese.edu
Office hours:	By appointment
Assistant:	Alejandra Arrocha
Email:	aarrocha@iese.edu
Course Web Page:	https://campus.iese.edu

---

1 Course Description

Research Methods in Finance covers theoretical and empirical work in finance, with a particular emphasis on quantitative methods and on the link between models and estimation. The aim of the course is to provide Ph.D. students with the tools needed to conduct research in the fields of corporate finance and asset pricing.

2 Course Material

Lecture Notes

I will distribute the lecture slides shortly before each class. The slides are not a complete record of what we will discuss in class. They serve mainly as an outline for developing the concepts in each lecture. I make them available so that you can concentrate on listening, thinking, and asking questions during class.

References

The main references for the course are:

- Adda, Jerome, and Russell W. Cooper, 2003, *Dynamic Economics: Quantitative Methods and Applications*, MIT Press.

- Strebulaev, Ilya A., and Toni M. Whited, 2012, "Dynamic Models and Structural Estimation in Corporate Finance", *Foundations and Trends in Finance*, 6, 1-163.

Before each lecture, I will post any relevant papers/readings.

Software Requirements

Please remember to bring your laptop to class. We will use MATLAB for numerical analysis. No prior knowledge of MATLAB is required. If you don't have MATLAB already installed on your laptop, please ask the IT Helpdesk to install it for you.

Required Readings

You will find the pdf files for the required readings on the course web page. During each lecture, I will provide additional readings and material on the relevant topic.

Course Web Page

You will find assignment questions, readings and other course material on the course web page at https://campus.iese.edu. Occasionally, I will also send emails to the class regarding logistical matters, such as information about when an assignment is due. Please check your email before coming to class.

3 Communicating With Me

The best way to get in touch with me is by email: ssacchetto@iese.edu. You can drop by my office (E 317) if you have questions about the course or would like to talk about a research idea. I greatly value your feedback on any aspects of this course. Please feel free to contact me in person or by email with suggestions.

4 Evaluation Criteria

Final grades for the course will be based upon the following criteria:

1. Individual assignments (40%).

2. Presentations in class (40%).

3. Class participation (20%).

Individual Assignments. Throughout the course, I will give assignments that cover the material discussed in class. You are allowed to talk about the assignments with each other, but each student must hand in a separate solution. Assignments received after the deadline will get zero credit.

Presentations in class. During the last class of the course, each student will present a published research paper, selected from a list that I will provide in class. Presentations should be conducted as if you were the author, and should focus on the main issues of the paper: i) What is the economic question? ii) What is the theoretical model/empirical strategy that the authors use to answer the question? iii) What are the main results? Please send me the presentation slides before the class starts.

Class Participation. Participation is greatly encouraged during lectures! Your individual participation grade will be based largely upon your contribution to the discussion during class. Both the quality and quantity of your class participation will be considered.

5 Course Outline

The topic schedule below is approximate. At times, certain topics may fill more or less than the allotted dates. I will post any updated version of this outline on the course web page.

Sessions 1&2	**Introduction to structural estimation, introduction to MATLAB**
Sessions 3&4	**Numerical methods: function approximation and maximization**
Sessions 5&6	**Numerical methods: integration and Monte Carlo methods**
Sessions 7&8	**Dynamic programming: finite-horizon models**
Sessions 9&10	**Dynamic programming: infinite-horizon models**
Sessions 11&12	**Dynamic models of corporate investment**
Sessions 13&14	**Dynamic models of corporate financing**
Sessions 15&16	**Structural estimation methods: GMM, MLE, SMM**
Sessions 17&18	**Structural estimation: Applications**
Sessions 19&20	**Student presentations**