



Course code: **GRAE021**

Study program: **Master of Science (MSc) in Financial Economics**

Type of course: **Compulsory**

Level of course: **Graduate**

Semester: **December 2019**

Department in charge: **Graduate school**

Year of study: **First**

Number of credits: **6 ECTS**, roughly 8 hours of online course contact, 28 hours of in-class work, 124 hours of self-study, 2 hours of consultations

Lecturer: **Greg Durham, PhD**

Instructor's e-mail: **gredur@faculty.ism.it**

Course prerequisites: **Fundamentals of Finance, Differential Calculus, Statistics, Mathematics**

Forms of studies: **Nine evening classes**, 5 Dec. (Thu.), 6 Dec. (Fri.), 9 Dec. (Mon.), 10 Dec. (Tue.), 12 Dec. (Thu.), 13 Dec. (Fri.), 16 Dec. (Mon.), 17 Dec. (Tue.), and 19 Dec. (Thu.); also, **online coursework** that will be available 20 Nov. and is to be completed by 5 Dec.).

Teaching language: **English**

**Objectives & overview:** This course focuses on asset pricing and financial markets. The prerequisites for this course will have prepared you with an understanding of the theoretical foundations of the investment topics to be discussed. These same topics will be considered here from a more applied perspective. Course discussions will cover the following topics: risk, diversification, interest rates, valuation theories, derivative securities (futures, forwards, and options), risk management, efficient markets, and portfolio management. At the end of this course, students should be able to:

1. **Analyze and evaluate** financial data. **Recommend and justify** decisions, including decisions arising from ambiguous or unfamiliar information, or arising from ambiguous or incomplete directions. This analysis will require the critical analysis of both quantitative and qualitative data. Prepare reports documenting the analysis and recommendations.
2. **Demonstrate** modern portfolio theory.
3. **Characterize** asset valuation models. **Demonstrate** the CAPM. **Outline** the Fama-French Three-Factor Model. **Outline** the Arbitrage Pricing Theory.
4. **Demonstrate** fixed-income security analysis for the development and monitoring of fixed-income portfolios. This analysis will include the term structure of interest rates, duration, convexity and portfolio performance measures.
5. **Demonstrate** equity security analysis for the development and monitoring of equity portfolios. This analysis will include fundamental analysis, technical analysis, industry analysis, sector analysis, market analysis, and focus on free-cash flow models.
6. **Characterize** derivative securities in portfolio management, particularly for the purpose of risk management. Demonstrate the pricing of fundamental derivative securities. The securities considered will include options, forwards, futures, and swaps.

**Course Materials:** The course materials will be available on the course website. There are a number of primary sources of the course material. There are background *PowerPoint* presentations and articles that present the

(Course Materials, continued) CFA Institute's (CFAI) Candidate Body of Knowledge (CBoK); these files will be used as the primary reading materials for the course and will be used in class as necessary to address any questions that arise from this material. The CFAI materials are identified with the letters CFAI at the beginning of their file name. The additional *PowerPoint* files are those developed by the lecturer that will be used to support the class discussion. Additional *Excel* files and articles are included for some of the topics.

**Working in Groups on Projects:** For Project 1 and Project 2, you are welcome to work in a group of up to three people. (Please do not ask me to expand the size. If you have a foursome, please just split into two independent groups of two and perform separate work.) Of course, you may also work alone. // The only things that I want to mention are (1) please do not involve me if anything within a group's dynamics goes bad and (2) please be sure to neither permit nor encourage free-riding. If a group mate is not contributing his or her fair share, please do not hesitate to expel the person from your group. We're all professional adults here.

**Cheating prevention:** This course maintains a zero-tolerance policy towards plagiarism, following the rules of the University.

**Course content and calendar** (please note that each class is **3 hours long** unless otherwise noted):

Session	Topics / <i>Graded, deliverable items in italics</i>
1. 21 Nov. (online)	Financial Markets and Institutions; Risk and Return; Mathematics of the Efficient Set <b><i>Project 1: Risk, Return, Beta, Fama – French Factors (Due 8 Dec., 11:59pm)</i></b>
2. 28 Nov. (online)	Modern Portfolio Theory, Asset Pricing Models: Capital Asset Pricing Model (CAPM)
3. 5 Dec. (3.5 hours)	Asset Pricing Models: Empirical Test of the Capital Asset Pricing Model (CAPM), Fama–French Factor Models
4. 6 Dec.	Asset Pricing Models (continued): CAPM, Factor Models, Arbitrage Pricing Theory
5. 9 Dec. (3.5 hours)	Financial Statements and Cash Flow, Cash Flow, Cash Flow
6. 10 Dec.	Equity analysis and equity portfolios
12 Dec. (2 hours)	<b><i>Mid-term Exam (administered in class)</i></b>
7. 13 Dec.	Term Structure of Interest Rates; Debt Securities and Debt Portfolio Analysis <b><i>Project 2: Term Structure of Interest Rates, Bond Valuation, &amp; Perhaps Equity Valuation – still to be determined) (Due 19 Dec., 11:59pm)</i></b>
8. 16 Dec.	Risk Management: Derivative Securities: Options, Forwards, Futures, and Swaps
9. 17 Dec.	Risk Management: Black Merton Scholes Option Pricing; Black Scholes Greeks
10. 19 Dec.	Behavioral Finance and Asset Pricing
to be det'd (2 hours)	<b><i>Final Exam – DETAILS OF DATE, TIME, LOCATION, AND FORMAT WILL BE PROVIDED BY NO LATER THAN DECEMBER 12. The date will be in very early January, 2020.</i></b>

**Assessment:**

	<b>Task</b>	<b>Proportion of Final Grade</b>
	Assignment 1: Risk, Return, Beta, and Fama-French Factors	17%
	Assignment 2: Term Structure of Interest Rates, Duration, and Convexity	17%
	Mid-term Exam	31%
	Final Exam	35%
	Total	100%

Projects (also called Assignments) (34%): Students will complete two *Excel*-oriented assignments.

Mid-term Exam (31%): The Mid-term Exam is a closed-book, primarily multiple-choice test.

Final exam (35%): The Final Exam will be administered in early January, 2020. The time allotted for the exam is 2 hours. **Details of the exam's date, time, location, and format will be provided by no later than Dec. 12.**

Re-take Exam: The Re-take Exam (should anyone decide to take it) can only be used to update a student's performance on the Final Exam. It cannot, and will not, replace any scores on either of the two Projects (also called Assignments) or on the Mid-term Exam. A student may choose to annul her or his Final-Exam score, complete the Re-take Exam, and use the latter exam's score as the Final-Exam score in the Assessment scale listed above.

Teaching methods: Lectures, exercise sessions, in-class discussions, and group assignments.