

THE UNIVERSITY OF THE WEST INDIES, MONA

ECON3072: Financial Markets

Semester II, 2018-19

Lecturer: Dr. Jan Keil
Office Hours: Mon 1-3 pm, Wed 3-4 pm
Lecture: Fri 2-4 pm SR 10
Tutorial: Thu 9-10 am SS F204
Pre-requisites: ECON1004 or MATH1142 or MATH1151 or MATH1180

Description

This is an advanced BSc course in financial economics/finance. It covers core topics in financial valuation and engineering, including: bonds and credit; equity; linear derivatives (forwards/futures/swaps); non-linear derivatives (options). It furthermore covers the measurement of risk, Markowitz portfolio theory, the capital asset pricing model, and topics in corporate finance such as capital budgeting, capital structure, the Modigliani-Miller theorems and information asymmetry problems in financing and investment decisions. This course is designed to produce a solid foundation in financial economics and to prepare students for MSc and Ph.D. level financial economics courses.

Official Pre-requisites

The pre-requisites ECON1004 or MATH1142 or MATH1151 or MATH1180 are required and strictly enforced without exception. Do not ask me or any other person to grant a waiver.

Recommended Pre-requisites

This is a **highly technical, mathematical course with financial engineering** content. It is strongly recommended that students **enroll only if** they have **A-level grades in** both, **math and statistics** courses. We will take derivatives, integrals, combine functions graphically and arithmetically, use exponential and logarithmic functions, calculate standard statistical distribution measures such as variances and correlation coefficients **without any explanation** of these techniques themselves at all. They have been taught in previous classes and the **highest possible proficiency is expected** from every student. I will not review and help with these recommended prerequisites in classes, tutorials, or office hours. I strongly advise to take this course only if you do not exceed the standard course load.

Learning Outcomes

The course aims at developing the students' competence to:

1. apply financial engineering, combining options and other investments to profit from any specific movement in future prices and changes in market volatility;
2. use valuation formulas to derive prices and yields for all important financial asset types;
3. evaluate abstract models in financial economic theory such those by Modigliani Miller;
4. assess investment and asset risks via value at risk measures, Sortino ratios, betas;
5. apply modern portfolio theory and construct variance-minimizing portfolios;
6. analyze and rank alternative financial structures by computing associated costs of capital.

Modes of Delivery

Two lecture hours and one tutorial hour per week. Exercises (not for grading) will be provided for practice. Students must prepare and present their solutions in the tutorial.

Assessment

There will be **2 examinations** with 40 points each and a total of 80 points. Students must obtain a total of 40 points to pass the course. The exams will be **mainly or only multiple choice** questions where students have 4 answers with 1 being correct, 3 incorrect. A correct pick yields 1, 2, or 3 points (specified in the exercise), **an incorrect answer subtracts 1/3, 2/3, or 1 points** respectively. *If* there are non-multiple choice questions in any of the exams, they will be graded in a binary way: they are either *entirely* correct or they are incorrect. If the final result or any single workout step towards it is incorrect, the entire answer is counted as incorrect and yields 0 points. I do not mark on a curve and I do not scale or round grades. Exams including the midterm cannot be taken again.

There are also 20 **attendance points** added on a weekly basis. We have 13 weeks of teaching and 10 lectures (the final is a holiday, and I will miss the one on March 8) plus the first class in the first week. I will assign 2 attendance points for each of these 10 lectures. You will receive these 2 points per week if you a) attend the tutorial; b) arrive at the lecture on time; c) do not leave the lecture early; d) do not disrupt the lecture by chatting, playing on the phone, computer, eating, leaving and coming back.

Attendance & Required Student Behavior

Presence in lecture and tutorial is mandatory. The attendance point system is described above. **Classes start exactly on time at 2:05pm and end at 3:55pm**, not some other time.

Only students signed up for this course are allowed to attend the classes. Students are expected to come to class having read all slides that are marked with a “B” before class. Furthermore, students must revisit the slides with special attention to those marked with an “A” after the lecture, reproduce the examples discussed in class and on the slides and read the respective textbook sections after lecture if they do not fully understand the respective topics.

Electronic devices are not allowed in class, tutorials, and my office unless I approve it specifically for that device and meeting. You must ask me for permission *before* the meeting. By using electronics you also lose the right to visit me during my office hours or seek for assistance. There is **no food** in class. The same rule applies as to the use of electronic devices.

Syllabus

I. Financial Mathematics

II. Asset Valuation

- i. Bonds
- ii. Equity
- iii. Derivatives
 - a. Forwards
 - b. Options

III. Risk & Portfolio Theory

- i. Risk
- ii. Markowitz portfolio diversification
- iii. CAPM

IV. Corporate Finance

- i. Capital budgeting
- ii. Capital structure, Costs of capital
- iii. Modigliani-Miller theorems; Trade-off theory
- iv. Pecking-order theory

Required Readings

There are lecture slide sets containing the core material. As additional readings, students must obtain access and work through the sections in the following text books:

- Garrett (2013): An Introduction to the Mathematics of Finance
- Bodie, Kane, Marcus (2011): Investments
- Brealey, Myers, Allen (2011): Principles of Corporate Finance
- Berk, DeMarzo (2013): Corporate Finance