ECON 504 – FINANCIAL ECONOMICS.
SPRING 2011

Professor: Karim Seghir
Office: 1020
Office hours: U from 3.45M to 4.45PM, or by appointment.
Email: kseghir@aucegypt.edu
Phone: 3187
Class Location: 1063, Jameel building.
Meeting Times: U, 5.00PM-7.25PM.
Teaching assistant: TBA

1. Course description:

The purpose of this course is to provide an introduction to the basic financial theory that forms the foundation of modern financial economics. Topics will include decision under uncertainty, risk and return, minimum variance theory, Capital Asset Pricing Model (CAPM), Arbitrage Pricing Theory (APT), information, rational expectation, credit risks and default. The course is rigorous, and students are expected to be able to understand and apply quantitative methods. Examples illustrate important real-world applications of the theory. Students will also learn how to implement advanced financial analysis using Excel.

2. Learning outcomes:

After completing this course, students should:

- Understand and be able to apply the different methods of risk control and valuation of different financial assets to real-life situations.
- Understand and be able to use the concepts of discounting, diversification and Capital Asset Pricing Model, arbitrage and hedging and the different types of asset class.
- Collect real data from financial market, the internet and other sources to carry out individual tasks.
- Implement financial analysis using Excel.
- Formulate real world problems arising in financial markets, solve them and interpret the obtained results.
- Realize how agents evaluate ventures whose payoffs are random and how exactly does increasing or decreasing uncertainty consequently lead to changes in behavior.
- Be able to formulate equations for empirical testing and be aware of results from empirical financial economics literature.

3. Readings:


4. **Grading and Exams.**

There will be 2 quizzes, a paper/project and a comprehensive Final Exam. Each quiz is worth 20% of your overall grade and the Final exam is worth 30% of your grade. The paper/project (see Section 5 below for more details) is worth 20% of your grade. The grading policy and exam dates are given by the following table:

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<tr>
<th>ASSESSMENT</th>
<th>WEIGHT</th>
<th>DATE</th>
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<tbody>
<tr>
<td>QUIZ 1</td>
<td>20%</td>
<td>Saturday, March 26th</td>
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<tr>
<td>QUIZ 2</td>
<td>20%</td>
<td>Sunday, May 8th</td>
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<tr>
<td>FINAL EXAM</td>
<td>25%</td>
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<td>Attendance-Assignment-Participation in Discussions</td>
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<tr>
<td>Paper/Project (see next section for more details)</td>
<td>20%</td>
<td>Sunday, May 15th</td>
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5. **Paper/Project.**

Each student will have to choose one of the three options: (i) an article out of a list of readings to read, summarize and present in class, (ii) write a research proposal on a topic in financial economics, or (iii) work on a practical project applying the knowledge acquired in the course. The three options are explained hereafter:

• **First option:** You can work on a practical project applying the knowledge acquired in the course. It could be either some simulation exercise, and involve Excel or some programming. Or you do some econometric analysis of real data. You need to describe the task and report the results on 5 to 10 pages plus tables, figures, which you should put into the appendix. You should discuss your idea with me before starting to work on it.

• **Second option:** You can write a research proposal on a topic in financial economics. It should contain an original research idea. You need to explain the idea and how it relates to the existing literature on 5 to 10 pages. Note that you do not have to actually carry out this research (you may want to do it later in your Master Thesis!). Note that a proposal is not a descriptive essay on some topic, neither is it a critical literature survey only. The main task is to present your research question, be it theoretical or empirical, and a possible strategy to address it. You should come up with a topic yourself, but you are of course welcome to discuss it with me.

• **Third option:** You can choose an article out of the list of readings to read, summarize and present in class. The list of readings will be available on Blackboard in few days. Papers will be chosen on a first come first served basis (through Blackboard emails). You are supposed to submit a summary (5 to 10 pages). This summary should include a literature review, the main ideas of the paper you read and some ideas on how the main results of the
paper can be used (some applications) and how these results can be extended.

You must handle a hard copy of your work (project, proposal or a summary) on **Sunday, May 15th**. You are also supposed to submit a soft copy on [www.turnitin.com](http://www.turnitin.com). NO LATE SUBMISSION WILL BE ACCEPTED.

You will present your work on **Sunday, May 22nd**. The length of each presentation should be 20 minutes. State at the beginning of your presentation to which of the three categories your work belongs to: the practical project, the research proposal or the paper presentation. Stress in your presentation what is new about your idea if you belong to the first or second categories. Give some details on how you used Excel or any other software if you belong to the first category. We can have a short discussion right after each presentation.

The criteria for evaluating a presentation include:
- Quality of analysis and research,
- Ability to express ideas and opinions concisely and clearly,
- Quality of presentations, debate input and responses to questions.

6. **Class Material on Blackboard.**

- This course is Blackboard supported. I will communicate all essential information through Blackboard.
- It is your responsibility to maintain a valid Blackboard account and to keep yourself up-to-date regarding the information I communicate through Blackboard.
- On Blackboard you will find essential lecture material, problem sets, list of readings, assignments and useful communication tools such as email and a discussion board.
- To access Blackboard, open your browser and type: [http://Blackboard.aucegypt.edu](http://Blackboard.aucegypt.edu). Your username is your AUC student ID and your password is also your AUC student ID, but you’ll be asked to change it.

7. **Some Important Course Policies**

- Students are expected to be *punctual* in coming to class.
- *You are urged to express your views, ask questions freely, and discuss the points you don’t understand or don’t agree.*
- The material presented in class will complement, not substitute, for the material covered in the assigned readings.
- *Office hours are an excellent venue for asking questions and assessing your progress. If you fail an exam, pass by and see me as soon as possible so that I can advice you appropriately.*
- I expect every student to maintain a high standard of academic integrity and to be familiar with the policies and principles of student conduct. Please, visit the following AUC webpage for more information on types of violations and recommended punishments: [http://www.aucegypt.edu/resources/acadintegrity/Disciplinaryprocedures/Typesofviolations.html](http://www.aucegypt.edu/resources/acadintegrity/Disciplinaryprocedures/Typesofviolations.html)
8. **List of topics:**

1. The theory of choice under uncertainty.
   - Axioms of choice under uncertainty.
   - Risk aversion.
   - Absolute and relative risk aversion.
   - Risk premia and insurance.
   - Asymmetric information and adverse selection.
   - Pooled “average premium” and signaling.

   - Pure securities and complete capital markets.
   - Derivation of pure security price.
   - No arbitrage condition.
   - Economic determinants of security prices.
   - Optimal portfolio decision.
   - Portfolio optimality conditions and portfolio separation.

3. Mean-variance Portfolio Theory.
   - Measuring risk and return for a single asset.
   - Measuring portfolio risk and return.
   - Optimal portfolio choice: many assets.
   - Portfolio diversification and individual asset risk.

4. Market equilibrium: CAPM and APT
   - Beta of portfolio, diversifiable risk, non diversifiable risk
   - Derivation and properties of the CAPM.
   - Use of the CAPM for valuation: single-period models, uncertainty.
   - Applications of the CAPM for corporate policy.

5. Option pricing theory.
   - Pricing European options.
   - Equity as a call option.
   - Derivation of option prices.
   - Valuation of an American call with no dividend payments.
   - Pricing American put options.

6. Term structure of interest rates.
   - Bonds: definition and valuation.
   - Yield curves.
   - The expectations Hypothesis of the term structure.
   - Applications to monetary policies.

7. Asymmetric Information and Rational Expectations.
   - Information Vs. Uncertainty.
   - Asymmetric information rational expectations equilibrium.
**Grading System:**

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**HAVE A PRODUCTIVE SEMESTER!**