FIN328
Financial Risk Management

Semester 2, 2011

Department of Applied
Finance & Actuarial Studies
MACQUARIE UNIVERSITY
FACULTY OF Business and Economics
UNIT OUTLINE

Year and Semester: Second semester, 2011

Unit convenor: Associate Professor Stefan Trueck

Lecture Times: 9 - 12 pm, Friday, Room: E7B T3

Students in this unit should read this unit outline carefully at the start of semester. It contains important information about the unit. If anything in it is unclear, please consult the unit convenor.

ABOUT THIS UNIT

- Credit Points: 3

The aim of the unit is to prepare students for analytical duties a graduate is expected to carry out in a financial institution or for research for a higher degree. On completing the unit, successful students will also attain practical knowledge of how to apply and evaluate the quantitative methods covered in the course in analysing and managing the risks arising from various financial instruments. In particular, students are expected to be able to:

- examine and find optimal investments strategies with respect to expected returns and risks involved and dependencies between financial instruments;
- attain an excellent knowledge of the role, characteristics and risks of financial markets, instruments, institutions and intermediaries;
- understand the pricing of various financial products like equity, fixed income instruments or derivatives and know how these products can be used for risk management and hedging;
- evaluate econometric models for financial variables, for example with respect to their volatility, dependence structure and time series properties;
- gain extensive knowledge on the major approaches to managing market, credit and operational risks and banking regulations as they are suggested in the new Basel Capital Accord.

By undertaking this unit, students will have an opportunity to consolidate and extend the knowledge they attained in the first and second year finance units to the extent that they will be able to apply the techniques in their workplace or to carry out empirical analyses for a higher research degree. Students will be introduced to advanced techniques in financial markets and risk management.
practices with plenty of opportunities to apply them to real-world data through several tutorial tasks and a written assignment.

Specific topics include:

- Portfolio Construction, Risk and Return
- Financial Instruments
- How Traders Manage their Exposure
- Interest Rate Risk
- Value-at-Risk
- Volatility Modeling
- Dependence, Correlations and Copulas
- Bank Regulations and Basel II
- Managing Market Risk
- Managing Credit Risk
- Credit Derivatives and the Credit Crunch
- Operational Risk, Model Risk and Liquidity Risk
- Economic Capital and RAROC

**TEACHING STAFF**

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<thead>
<tr>
<th></th>
<th>Room</th>
<th>Telephone</th>
<th>Email</th>
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<tbody>
<tr>
<td><strong>Unit Convenor</strong></td>
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</tr>
<tr>
<td>A/Prof Stefan Trueck</td>
<td>E4A 432</td>
<td>9850 8483</td>
<td><a href="mailto:stefan.trueck@mq.edu.au">stefan.trueck@mq.edu.au</a></td>
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<tr>
<td><strong>Lecturers</strong></td>
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<tr>
<td>Katja Ignatieva</td>
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<td><a href="mailto:katja.ignatieva@mq.edu.au">katja.ignatieva@mq.edu.au</a></td>
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**CONSULTATION TIMES**

Stefan Trueck
Consultation Hours: 3-5 pm, Monday / 2-4 pm, Thursday
Room: E4A 432

Katja Ignatieva
Consultation Hours: 2-4 pm, Friday
Room: tba
Students are encouraged to seek help at a time that is convenient to you from the unit convenor during his regular consultation hours. In special circumstances, an appointment may be made outside regular consultation hours. Staff will usually not conduct any consultations by e-mail. Please note however that staff will only answer emails sent from official Macquarie University email accounts. You may, however, phone staff during their consultation hours.

In order to gain access to staff located at level 4 of building E4A during their consultation hours please ring the staff member from the phones available in the lobby (phone numbers of relevant staff members will be provided on Blackboard and are available next to the phones).

Students experiencing significant difficulties with any topic in the unit are strongly encouraged to seek assistance immediately.

**CLASSES**

Classes in FIN828 are composed of three hour lectures. Usually one hour if the lecture time will be spent on exercise questions. Unit materials are learnt by attending lectures and through independent learning. The lectures provide a general overview of the topics highlighting a number of concepts and techniques. Further additional reading material will be provided. Students are strongly advised to study the additional reading material provided by the unit convenor and further explore all relevant concepts and techniques.

Students should attend a three-hour lecture every week. Lecture slides will be available prior to the lectures at the unit’s Web site.

**REQUIRED AND RECOMMENDED TEXTS AND/OR MATERIALS**

*Required Text:*


Additional to the recommended text, sometimes chapters from other books (see below) will be used in conjunction with journal articles and lecture notes.

*Other Recommended References:*


*Students needing assistance with mathematics should first consult:*


**TECHNOLOGY USED AND REQUIRED**

Blackboard CE6 is an online program available at [http://learn.mq.edu.au/](http://learn.mq.edu.au/) through which students will be able to access resources to assist them throughout the semester.

**UNIT WEB PAGE**

The following information will be made available on Blackboard:

| • Unit Outline | • Announcements |
| • Lecture slides | • Staff consultation hours and contact details |
| • Information on Assessments | • Bulletin Board |
| • Tutorial / Exercise questions | • Other relevant material |
You are strongly encouraged to regularly visit the website and use it as a resource centre to assist with your learning.

If you are unable to access the website because you are not aware of or have forgotten your username and password, please contact the IT helpdesk located on Level 1 of the Library on 9850 6500. The IT helpdesk will also be able to assist you with using Blackboard. Please note that there is also a help feature in Blackboard and you may refer to this instead for assistance in using Blackboard. If you have contacted the helpdesk in regard to your username and password and you are still unable to login to Blackboard you should then contact the Unit Administrator.

Please remember to log out when you have finished using Blackboard. Failure to do so could result in unauthorised access to your Blackboard account.

**GENERIC SKILLS**

Dealing with advanced material in our subject area requires a range of generic skills. This unit aims to develop such skills. The lectures are tailored to enhance critical thinking and analysis, problem solving, and creative expression, while contributions to the Bulletin Board improve your writing skills, which are gaining in importance because of the increased use of email in business communications. However, you will only gain these skills through practice and application, and that begins with attending lectures, immersing yourself in solving problems raised in lectures, and participating in verbal and written debates and discussions in the classroom and online.

**LEARNING OUTCOMES**

The globalization of financial markets offers opportunities, but it also introduces new risks. As a response, novel investment techniques as well as advanced models for risk management have been introduced or are being developed. The aim of the unit is to prepare students for analytical duties a graduate is expected to carry out in a financial institution or for research for a higher degree. On completing the unit, successful students will also attain practical knowledge of how to apply and evaluate the quantitative methods covered in the course in analysing and managing portfolios as well as the risk arising from various financial investments. In particular, students are expected to be able to:

- examine and find optimal investments strategies with respect to expected returns and risks involved and dependencies between financial instruments;
- attain an excellent knowledge of the role and characteristics of international financial markets and the institutions and intermediaries;
• understand the pricing of various financial products like equity, fixed income instruments or derivatives and know how these products can be used for hedging;
• evaluate econometric models for financial variables, for example with respect to their volatility, dependence structure and time series properties; and
• acquire an extensive knowledge on the major approaches to managing market, credit and operational risks and banking regulations as they are suggested in the new Basel Capital Accord;

**TEACHING AND LEARNING STRATEGY**

The teaching strategy in FIN828 recognises that students learn independently and assume responsibility for the learning process and with academic integrity. Students are expected to participate in the unit by attending lectures, reading the provided material, thoroughly revising the lecture notes and preparing answers to the provided exercise questions and reading additional material about important issues in investment and risk.

What we aim to achieve in FIN828 is deep (as opposed to surface) learning. Thus, learning is interpreted as making sense or abstracting meaning. Learning involves relating parts of the subject matter to each other and to the real world. Further learning is understood as comprehending the world by understanding and re-interpreting knowledge.

The teaching philosophy is articulated as follows:

**Lectures – large group learning (3 hour each teaching week)**

Lectures are intended to provide an overview of conceptual frameworks and issues in applied finance that are critical to the core themes of the unit. Usually one hour if the lecture time will be spent on exercise questions.

**Independent learning – learning by doing (about 6 hours each teaching week and 9 hours each week during the 2-week mid-semester recess)**

FIN828 relies heavily on independent learning where students read the textbook and other relevant material, revise the lecture notes, prepare answers to the provided exercise questions participate in the discussion board and extend themselves by doing additional reading, questions, exercises and problems.
Lecture and Topic Schedule

Lecture 1 (August 5 - Trueck)
Hull Chapter 1, 2 & 5: Introduction, Risk and Return, Portfolio Construction, Banks, Financial Instruments

Lecture 3 (August 12 - Trueck)
Hull Chapter 6: How Traders Manage Their Exposure

Lecture 3 (August 19 - Trueck)
Hull Chapter 7: Interest Rate Risk, Duration, Convexity

Lecture 4 (August 26 – Ignatieva)
Hull Chapter 8: Value-at-Risk

Lecture 5 (September 2 – Ignatieva)
Hull Chapter 9: Volatility, EWMA and GARCH models

Lecture 6 (September 9 – Ignatieva)
Hull Chapter 10: Correlations and Copulas

Lecture 7 (September 16 – Ignatieva)
1st Semester Test / Hull Chapter 11: Regulation, Basel II, WCDR

Mid-Semester Break: Monday, September 19 to Friday, September 30

Lecture 8 (October 7 – Ignatieva)
Hull Chapter 12&13: Market Risk VaR: Historical Simulation and Model Building Approach

Lecture 9 (October 14 - Trueck)
Hull Chapter 14&15: Credit Risk - Probabilities of Default (PD), Credit VaR

Lecture 10 (October 21 - Trueck)
Hull Chapter 16: Credit Derivatives and the Credit Crunch of 2007

Lecture 11 (October 28 - Trueck)
Hull Chapter 17 & 18: Stress Testing and Operational Risk

Lecture 12 (November 4 - Trueck)
2nd Semester Test / Hull Chapter 21: Economic Capital and RAROC

Lecture 13 (November 11 – Ignatieva & Trueck)
Hull Chapter 22: Risk Management Mistakes to avoid / Revision Lecture
RELATIONSHIP BETWEEN ASSESSMENT AND LEARNING OUTCOMES

The unit assessment will be based on a mid- and late semester test, an assignment and a final examination.

The semester tests will be multiple choice questions; these questions may include calculations as well as “verbal” answers. The tests are scheduled for Friday, September 16, 2011 and Friday, November 4, 2011.

The assignment will provide the opportunity for students to work on a specified topic covering important concepts of risk management. The topic and reading material will be provided in week 6, the due date will be October 17, 2011. The assignment provides further opportunity for students to develop their critical analysis skills, problem-solving skills and creative thinking skills.

The final examination will comprise long-answer questions only, and it will cover the entire semester. The date for the final examination will be during the official examination period of Semester 2, 2011.

All assessment tasks further develop problem solving, knowledge on applied finance and communication skills.

The individual tasks enter the overall assessment with the following weights:

<table>
<thead>
<tr>
<th>Task</th>
<th>Weight (%)</th>
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<tbody>
<tr>
<td>1st semester test</td>
<td>10</td>
</tr>
<tr>
<td>2nd semester test</td>
<td>10</td>
</tr>
<tr>
<td>Assignment</td>
<td>25</td>
</tr>
<tr>
<td>Final Exam</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
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The final grade will be determined after consideration of performance in all aspects of the course.

You are expected to present yourself for examination at the time and place designated in the University Examination Timetable. The timetable will be available in Draft form approximately eight weeks before the commencement of the examinations and in Final form approximately four weeks before the commencement of the examinations. The relevant website is http://www.timetables.mq.edu.au/exam
The only exception to not sitting an examination at the designated time is because of documented illness or unavoidable disruption. In these circumstances you may wish to consider applying for Special Consideration.

If a Supplementary Examination is granted as a result of the Special Consideration process the examination will be scheduled after the conclusion of the official examination period.

You are advised that it is Macquarie University policy not to set early examinations for individuals or groups of students. All students are expected to ensure that they are available until the end of the teaching semester, that is, the final day of the official examination period.

**PLAGIARISM**

The University defines plagiarism in its rules: "Plagiarism involves using the work of another person and presenting it as one's own." Plagiarism is a serious breach of the University's rules and carries significant penalties. You must read the University's practices and procedures on plagiarism. These can be found in the 2009 *Handbook of Undergraduate Studies* or on the web at: http://www.student.mq.edu.au/plagiarism/

The policies and procedures explain what plagiarism is, how to avoid it, the procedures that will be taken in cases of suspected plagiarism, and the penalties if you are found guilty. Penalties may include a deduction of marks, failure in the unit, and/or referral to the University Discipline Committee.

**GRADING APPEALS AND FINAL EXAMINATION SCRIPT VIEWING**

If, at the conclusion of the unit, you have performed below expectations, and are considering lodging an appeal of grade and/or viewing your final exam script please refer to the following website which provides information about these processes and the cut off dates at the first instance. Please read the instructions provided concerning what constitutes a valid grounds for appeal before appealing your grade.

http://www.businessandeconomics.mq.edu.au/new_and_current_students/undergraduate/how_do_i/grade_appeals