FINANCIAL RISK MANAGEMENT
FINANCIAL MODELLING 9587/ECONOMICS 9547/9647
Department of Statistical & Actuarial Sciences / Department of Economics
Western University

Instructor: Lars Stentoft
Office: WSC 278/SSC 4029
Phone: (519) 661-2111 ext. 85311
E-mail: lars.stentoft@uwo.ca
Office Hours: TBA
Classroom meeting time(s) & location: Tuesday 9:30-12:30 in Stevenson Hall (STVH) 3166
Course website: https://owl.uwo.ca
Graduate inquiries: SSC Room 4076 or mfe@uwo.ca for MFE students.

Students should use their official Western (@uwo.ca) email address for any communication to avoid problems with the spam filter.

Prerequisites
Proficiency in statistics, algebra, and calculus as well as university level reading comprehension and written and oral communication are required. At a minimum, this means that students should have completed at least one year of university level calculus and a year of statistics (or Econometrics). In addition, students should be familiar with the language and concepts of modern finance and economics.

Unless you have either the requisites for this course of written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

MFE and FM students: FM 9522, or equivalent background, is required prerequisite.

Target Academic Programs:
This course should be of interest to students in the fourth term of the MFE, students with the relevant background knowledge in the M.Sc. in Financial Modelling, as well as upper year PhD students in Economics, Finance, and Statistical & Actuarial Sciences with career interests in the industry. Students with suitable academic background in the Ivey M.Sc. program may enroll with permission.

Course Description/Overview:
This course examines Risk Management concepts and quantitative applications in the financial industry. Commonly used quantitative measures of key risks (e.g. credit, liquidity, operational risk) are examined, as well as their practical advantages and disadvantages as risk management tools. Key elements of the regulatory (e.g. Basel capital and liquidity regulation, stress testing) and organizational environment which constrain the practice of risk management are discussed.

Topics covered include:
1) What is Risk? Risk adjusted value, risk tolerances and risk neutral preferences.
2) Definition and measurement of different types of risk – accounting risk, economic risk,
environmental risk, financial risk, operational risk, reputational risk, technological risk etc.

3) Financial risk – capital market risk, liquidity risk, portfolio management, asset liability management.
4) Risk modelling, risk budgeting.
5) Scenario Analysis, Stress testing and Value-at-Risk.
6) Regulation, Basel III, Solvency II, Dodd-Frank, Central Banks, FSA etc.
7) Applications.

Course Learning Outcomes:
Students who successfully complete this course will be familiar with core concepts of risk management currently used in the financial sector, will have a working knowledge of how to implement these techniques in a quantitative manner, and will understand their advantages and disadvantages. Students will also be familiar with basic aspects of the regulatory and organizational environment which constrain and inform the practice of risk management.

Course Requirements:
Students are responsible for all the material covered in the lectures, as well as the material in assigned readings. They are expected to read and review the assigned material prior to the lecture at which it is to be discussed. While class attendance is not compulsory, part of the grade will be based on class participation.
Copies of material handed out in class, slides (which provide partial coverage of material discussed in the lectures), assignments and course readings will be available to download from the course website at http://owl.uwo.ca. These materials will not be distributed in any other form.

Evaluation:
The course grade will be based on student’s participation in class and performance on the group projects, the homework assignments, and the final exam according to the following weights:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Participation</td>
<td>10%</td>
</tr>
<tr>
<td>Group Projects (2 @ 25%)</td>
<td>50%</td>
</tr>
<tr>
<td>Homework Assignments (3 out of 4)</td>
<td>15%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
</tbody>
</table>

Group Projects
Each project is worth 25% of your grade. Students will form groups of 3-5, and are graded on both the in class presentation and the written submission.

Homework Assignments
Assignments are due in class at the beginning of the lecture on the due date. No late assignments will be accepted. If you are unable to attend class on the day when an assignment is due, you should make arrangements to submit the homework prior to the due date. Your lowest grade is dropped when your homework average is computed. This means that if you fail to hand in one assignment it will not directly affect your grade.
Students are expected to do their own work on the assignments. Although you are encouraged to discuss the problems and possible solutions with classmates, you must provide your own individual independent answer. Students who hand in identical assignments will receive a
grade of zero.

**Final Exam**
The final exam will primarily consist of short answer problems. This is a closed book exam and no class notes, textbooks, or any other aids are allowed while writing the exam. Use of any such sources will be treated as a scholastic offence and reported to the Department Chair, with a recommended grade of zero on the exam. A standard non-programmable calculator may be used.

**Questions about Grades:**
Any requests for regrading of any assignment or exam has to be submitted in writing. Please indicated clearly which problem(s) you wish to have regraded and attach a detailed explanation of why you feel the grade should be changed. When regraded, the entire assignment or exam will be reconsidered and it is therefore possible that you score may go up or down.

**Textbook:**
The *required textbook* is:

While the Grouchy et al text provides a good introduction to the concepts and current issues in risk management, it is written at a relative non-technical level. This text will therefore be supplemented with readings from other texts and journal articles. In general these additional required readings will be available on the course website.

The following texts cover some useful background material, often with a more quantitative coverage than the Grouchy text:
Policy on Academic Offences:
Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following web site: https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between the University of Western Ontario and Turnitin.com (http://www.turnitin.com).

Accommodation and Accessibility
If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or supporting documentation to the Academic Counselling Office of your home faculty as soon as possible. If you are a Science student, the Academic Counselling Office of the Faculty of Science is located in WSC 140, and can be contacted at scibmsac@uwo.ca.

If you miss the Final Exam, please contact your faculty’s Academic Counselling Office as soon as you are able to do so. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam). You may also be eligible to write the Special Exam if you are in a “Multiple Exam Situation” (see https://registrar.uwo.ca/academics/examinations/exam_schedule.html).

Academic Policies
The website for Registrarial Services is https://registrar.uwo.ca/. In accordance with policy, the centrally administered e-mail account provided to students will be considered the individual’s official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

Support Services
Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Student Development Centre (SDC) at (510) 661-2147 if you have questions regarding accommodation, see http://sdc.uwo.ca/ssl/. Learning-skills counsellors at the SDC are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Statement on Mental Health:
If you or someone you know is experiencing distress, there are several resources here at Western to assist you. Please visit http://www.uwo.ca/uwocom/mentalhealth/ for more information on these resources and on mental health. Additional student-run support services are offered by the USC, see http://westernusc.ca/your-services/.