ECO2508H1S "Topics in Financial Risk Management" Course Syllabus

Course Number:	ECO2508H1S, section L9101 • Topics in Risk Management • M7-9, F7-9 • Jan 11 – April 20, 2021
Department:	Economics
Title:	Topics in Financial Risk Management
Instructor:	Alan Yang
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Course Notes Website: QUERCUS	https://q.utoronto.ca/ (UTOR login password required)
Lecture Times & Location: (Including Office Hours/Tutorial)	– **Time**: Jan - April on Monday and Friday night from 19:00-21:00 (including office hour & tutorial) – **Location**: Zoom Online class (check QUERCUS course portal for Zoom online link and password) – *Note*: The first class is on **Jan 11**.

Note: This class is online synchronous course. Students will synch online with course instructor or TA two times a week on Monday and Friday from 19:00 to 21:00. During the course, the course instructor or TA will help to go over the course notes, answer student questions and discuss assignments. There will also be random quiz questions issued online.

Zoom is the major application tool to deliver live online course. Students do not have to install Zoom application, Zoom URL and password will be available on QUERCUS course portal to connect online. However, it is strongly recommending all students visit Zoom website: https://zoom.us to create a free Zoom account and test your web camera, mic and speaker before the class starts. Ensue these devices working are essential for participating in the class.

Course Description:

This course provides a comprehensive introduction to the real-world application of Financial Risk Management modeling theory with an emphasis on the industry best-practice methodologies. The course covers major issues in, such as: Liquidity Risk, Value at Risk, Counter Party Credit Risk, Economic Capital, Regulatory Capital, Credit Value Adjustment, Scenario Generation, Stress Testing, Back Testing and Portfolio Credit Risk Management. The course also covers the motivation of Enterprise-wide Risk Management. As the course focuses on Financial Engineering approaches, Excel Visual Basic Application based assignments will help to illustrate the concepts. The course instructor also encourages students, who are familiar with python programming language with Jupyter Notebook to accomplish assignments and projects.
Note: There may be not enough time to cover all the interesting topics, the focus varies from term to term.

Course Objectives:
The course is intended to introduce to students the main idea about how to implement financial risk management by means of financial engineering. After completing this course, students will be able to:

- Differentiate and describe major risks and associated risk factors in the financial market;
- Spec financial risk models and use VBA functions to quantify financial risks based on real world financial engineering practices;
- Explain and debate on various issues in the financial risk management.

Prerequisite:
MA, MFE and PH.D Economics Department are qualified to take this course. If you are a graduate student outside the economics department who would like to take this course, please apply from this link:
http://www.economics.utoronto.ca/index.php/index/graduate/nonEconCourseAdd

About Marks:
Assignments & Projects: 60%
In Class Quiz: 40%

About Assignments:

- All the assignments will be posted on the QUERCUS Course Portal. It can be finished at home but should be finished independently and submit online before the deadline.
- Style of Assignments: there will be VBA exercises, or using Visual Basic and financial engineering approaches learned in the class to quantify risks.

About Projects (TBD):

- Course projects are TBD. If there are projects, they will be finished in groups.

About Quiz:

- All quizzes are in class tests, involving questions related to course notes and related concepts.

About Reference Books:

- Reference books are not required. Relevant papers and course notes that cover each topic will be released online or on course portal before class starts.

- In terms of Visual Basic programming, good reference books are (available in UT Book Store):
    - "Excel VBA Programming For Dummies", 2nd Edition, by John Walkenbach
    - Excel 2013 Power Programming with VBA, by John Walkenbach, John Wiley & Sons © 2013 (1104 pages)Citation, ISBN:9781118490396
    - "Mastering VBA for Microsoft Office 2013" by Richard Mansfield Sybex © 2013 (960 pages) Citation ISBN:9781118695128

    - "Advanced Modelling in Finance using Excel and VBA", by Mary Jackson and Mike Staunton

- In terms of Python programming language with Jupyter Notebook, there are lots of free web posting you can learn from, search for key word: "jupyter notebook tutorial" or "A gallery of interesting IPython Notebooks" say, you can learn from web posting, such as:
  https://youtu.be/3C9E2yPBw7s

  https://youtu.be/HW29067qVWk

  Please follow these links, download Anaconda to install and choose latest version of Python 3.x and practice.

Articles and Other Materials:

- Academic journal articles are available in electronic form on *J-Store* at the U of T Library.
- Where materials are available over the Internet, I will provide the web links.

COVID-19 resources for the U of T community