RMBI 1010 - Risk Management in Society (2021-22 Fall Term)

General Information

- 3 Credits (Letter Graded)
- Teaching Mode: Face-to-Face + Zoom
- Lecture: (L1) Wed 15:00 - 16:50 LSK1034
- Tutorials: (T1) Wed 09:30 - 10:20 LSKG005
  (T2) Mon 12:00 - 12:50 LSKG021
- Instructor: Dr. Jean WANG <jeanwang@ust.hk> Rm: LSK 5050A (office hour by appointment)
- TA: TBC

Course Description

This course aims to examine the risks that may happen in our society and learn the benefits and impacts of risk management. The course focuses on the risks in financial institutions such as market risk and credit risk. It will introduce how enterprises assesses risk in a cohesive and quantitative way, and how various risk management methodologies can be utilized to help deliver profitability while managing downside risks. A mixture of lectures, case studies, group discussion and seminars will be delivered.

Teaching Schedule

WK	Tutorial Exercise	Lecture Topic
1	*No tutorial (to synchronize with lecture)*	*[Sep 1]* Lec01 - Introduction to Risk and Probability
2	*[Sep 6, 8]* Tut01 - Odds of Winning/Losing at Slot Machines	*[Sep 8]* Lec02 - Risk Management Process
3	*[Sep 13, 15]* Tut02 - Slot Machines Volatility and Risk Simulation	*[Sep 15]* Lec03 - Risk Analysis: Qualitative and Quantitative
4	*No Class (public holiday on Sep 22)*	
5	*[Sep 27, 29]* Tut03 - What-If Analysis in Excel for Term Deposit Return	*[Sep 29]* Lec04 - Financial Risk Management
6	*[Oct 4, 6]* Tut04 - Sensitivity Analysis in Excel for Mortgage Payment	*[Oct 6]* Lec05 - Market Risk and Diversification
7	*[Oct 11, 13]* Tut05 - Monte Carlo Simulation in Excel for Profit Forecasting	*[Oct 13]* Lec06 - Market Risk and Hedging

8	*[Oct 18, 20]* Tut06 - Portfolio Optimization using Excel Solver	*[Oct 20]* Lec06 - Market Risk and Hedging (continued)
9	*[Oct 25, 27]* Tut07 - Forward and Options Practice Questions	*[Oct 27]* Lec07 - Market Risk and Value-at-Risk (VaR)
10	*[Nov 1, 3]* Tut08 - Currency Swap Practice Questions	*[Nov 3]* Lec08 – Credit Risk Management
11	*[Nov 8, 10]* Tut09 - VaR Calculation Practice Questions	*[Nov 10]* Lec09 – Asset Liability Management
12	*[Nov 15, 17]* *Project Presentation & Discussion*	
13	*[Nov 22, 24]* *Project Presentation & Discussion*	

Assessments and Weighting

- **Attendance and Class Participation (10%):** week 1 to week 11
  Students are required to attend all lectures and are strongly encouraged to interact with the instructor and peers during the lectures.

- **Tutorial Exercises (10%):** week 1 to week 11
  These are individual assessments. Each week, students are given an Excel file with real-world business data and a series of instructions. They are required to follow the instructions to complete the Excel file, to accomplish a specific risk analysis task. After finishing, students need to submit their Excel file to present their findings.

- **Assignment 1 (20%):** week 3 to week 7
  This is an individual assessment. Students need to conduct research and summarize their findings for a given set of RM-related questions. The questions include social impact of RM, obstacles and difficulties of RM implementation, different RM techniques, and case studies of failure in enterprise risk management.

- **Assignment 2 (20%):** week 9 to week 13
  This is a group assessment. 2 -3 Students form a group to conduct research and present their findings for a specific RM-related topic. Students are allowed to choose the topic of their own interest, subject to the instructor's approval.

- **Examination (40%):** end of semester
  This is an individual close-book assessment. The exam paper includes short questions, case analysis and calculation questions. The scope includes all topics covered in lectures and tutorial exercises.

Recommended Readings

Lecture Topic	**Recommended Readings**
Risk Management Process	- ISO 31000:2009 Risk Management – Principles and Guidelines https://www.iso.org/obp/ui/#iso:std:iso:31000:ed-1:v1:en - ISO/Guide 73:2009 Risk management – A Practical Guide for Small and Medium-Sized Enterprises (SMEs) http://www.iso.org/iso/iso_31000_for_smes.pdf
Risk Analysis: Qualitative and Quantitative	- Qualitative vs. Quantitative Risk Analysis http://www.mpug.com/articles/pmp-prep-qualitative-vs-quantitative-risk-analysis/ - Sensitivity Analysis in Excel Using One or Two Variables Data Table http://www.exceldemy.com/sensitivity-analysis-in-excel-using-one-or-two-variables-data-table/ - Data Tables & Monte Carlo Simulations in Excel – A Comprehensive Guide http://chandoo.org/wp/2010/05/06/data-tables-monte-carlo-simulations-in-excel-a-comprehensive-guide/
Financial Risk Management (in Banks)	- Types of Financial Institutions http://www.investopedia.com/terms/f/financialinstitution.asp - Analyzing A Bank's Financial Statements http://www.investopedia.com/articles/stocks/07/bankfinancials.asp - Book – Fundamentals of Risk Measurements Chapter 1 & Chapter 2
Diversification for Market Risk	- Portfolios of Two Assets https://web.stanford.edu/~wfsharpe/mia/rr/mia_rr5.htm - Modern Portfolio Theory: Efficient and Optimal Portfolios http://thismatter.com/money/investments/modern-portfolio-theory.htm - Measuring Investment Risk – Alpha, Beta, Sharpe Ratio http://pncfunds.com/cmsfiles/docs/literature/Investment-Materials/PNC-Funds/Measuring%20Investment%20Risk.pdf
Hedging for Market Risk	- Systematic And Unsystematic Risk http://www.investopedia.com/walkthrough/corporate-finance/4/return-risk/systematic-risk.aspx - Derivatives http://www.investopedia.com/exam-guide/cfa-level-1/derivatives/default.asp

	- Introduction to the Futures and Options Markets https://apps.theifm.org/tutorial/faq.htm
Value at Risk and Market Risk	- Value at Risk http://www.hkma.gov.hk/media/eng/publication-and-research/reference-materials/banking/ch15.pdf - How to Calculate Value-at-Risk – Step by Step https://www.glynholton.com/notes/var_measure/ - Value-at-Risk Theory and Practice https://www.value-at-risk.net/
Credit Risk Management	- Principles for the Management of Credit Risk http://www.bis.org/publ/bcbs75.pdf - Credit Risk Management - What it is and Why it Matters https://www.sas.com/en_us/insights/risk-management/credit-risk-management.html - Credit Risk Management: Trends and Opportunities https://www.capgemini.com/resources/credit-risk-management-trends-and-opportunities/
Interest Rate and Asset Liability Management	- Asset Liability Management: An Overview http://www.oracle.com/us/industries/financial-services/045581.pdf - Managing Interest Rate Risk: ALM, Franchise Value, and Strategy https://www.casact.org/library/studynotes/panning.pdf - Basel Standards: Interest Rate Risk in the Banking Book https://www.bis.org/publ/bcbs108.htm