RMBI 3110 – Introduction to Risk Management and Business Intelligence (2020-21 Fall Term)

General Information

- Teaching Mode: Zoom

- Lecture: Wed Fri   15:00 - 15:20

- Instructor: Prof. Xuhan Wan <imwan@ust.hk>   Rm: LSK 4072

- TA: Isaac Mak <imccmak@ust.hk>

Course Objectives and Outcomes

Objectives: This course presents concepts and techniques for risk management and business intelligence from entry level to intermediate level. We will apply regression, bayesian regression, and time series models to predict and evaluate risks in market actitivity. Clustering technique will be discussed and applied in detecting market anomaly.

Outcomes: After completing this course, you are expected to know, how to use quantitative risk tools and business intelligence technique to help you make smart decision in financial markets.

Course Materials

A. Textbook " Risk Management and Financial Institutions ", John C, Hull.
B. You need to complete three assignments with a little python. Entry-level knowledge will be enough for you to follow the instruction. You are recommended to install Anaconda and work with jupyter notebook. For the final exam, the knowledge of python is NOT necessary.
C. A course website (http://canvas.ust.hk) is maintained which contains lectures notes, assignments, and links of data.

Evaluation

Your overall grade will be based on the following:
A. 3 Assignments (45%)
B. Final(50%):
C. Attendance(5%)

Course Organization

Unit I. - Financial Market
- Financial Market and Traders
- Risk and Rreturn
- Introduction to Regression Models

- Captial Asset Pricing Model
- Valuation and Scenario Analysis

Unit II. - Market Risk
- Managing Risk in Trading
- Volatility
- Correlations and Copulas
- Value at Risk and Expected Shortfall
- Historical Simulation and Extreme Value Theory

Unit III. -Modeling of Market Risk
- Model-Building Approach
- Linear and Quantile Regression Model
- Bayesian Regression
- Time Sereis Modeling
- Bayesian Approaches to Time Series
- Risk Modeling with High Frequency Financial Data.
- Clusertering and Regime Switching
- Clustering and Detection of Anomaly

Unit IV. - Optimization and Managing Risk

Grievance Procedure
If you disagree with grades that have been assigned to your work, you have the possibility to meet instructors within one week after the grades have been published on the course website. Be specific aboutwhat it is that you don't agree with.

Academic Integrity
Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabricating of information facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of other groups, or tampering with the academic work of other groups. All exam answers must be your own, and you must not provide any assistance to other students during exams.