

**THE UNIVERSITY OF HONG KONG
FACULTY OF BUSINESS AND ECONOMICS**

**School of Business
IIMT3636 Decision and risk analysis I
2016-2017, Semester 2**

GENERAL INFORMATION

Instructor: Dr. ZHANG, Wei

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Consultation times: by appointment

Tutor: Christina Ho

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Consultation times: TBA (check MOODLE course page)

Course Page: MOODLE

Pre-requisites: STAT1008/STAT0302 Business statistics or STAT1003 Introductory statistics or STAT1004 Probability and statistics or STAT1001 Elementary statistical methods or STAT1301 Probability & statistics I or STAT1306 Introductory Statistics or ECON1003 Analysis of economic data or equivalent (STAT1602 Business statistics or STAT1603 Introductory statistics or STAT2601 Probability & statistics I or ECON1280 Analysis of economic data or equivalent)

Textbook: *Decision and Risk Analysis*. Edited by H.-H. Lee and J. Wang. (This is a customized book derived from *Quantitative Analysis for Management*, 11th Edition, Global Edition by B.E. Render, M.E. Hanna, and R.M. Stair. Prentice Hall, 2012.)

COURSE DESCRIPTION

Business decision making involves considerable complexity and uncertainty. This course introduces the basic concepts in quantitative business analysis to help you gain a clear understanding of the key elements in the decision making process. We discuss methods that are used extensively in business organizations. These methods provide you with the tools and the skills to approach, analyze, and solve problems of varying scales. Furthermore, this course aims at improving a decision-maker's overall problem solving ability by stressing approaches to 1) understand and question assumptions, 2) consider a richer set of solution alternatives, and 3) consider diverse measures of performance. The teaching methods will include lectures, skill-building exercises, qualitative class discussions, and a project with the support of several software packages in Microsoft Excel.

COURSE OBJECTIVES

By introducing rigorous quantitative methods and theories, this course demonstrates ways to apply structured thinking on loosely defined business problems in reality. Upon successfully completing this course, you should be able to

1. employ basic statistical methods to decision making,
2. understand how to apply basic models and theories in business,
3. solve management problems effectively, and
4. use software tools to model decision problems.

PROGRAMME LEARNING OUTCOMES (PLO)

PLO1: Acquisition and internalization of knowledge of the programme discipline

PLO2: Application and integration of knowledge

PLO3: Inculcating professionalism and leadership

PLO4: Developing global outlook

PLO5: Mastering communication skills

COURSE LEARNING OUTCOMES (CLO)**ALIGNED PLO**

CLO1: Clearly identify and define a loosely structured business problem

PLO1

CLO2: Select and use effective techniques to address the major challenges presented

PLO2

CLO3: Use IT tools to verify, validate, and provide solutions to the decision process

PLO2, 4

CLO4: Communicate and support your solution with qualitative explanations

PLO3, 5

TEACHING AND LEARNING ACTIVITIES

Lecture: I will present the fundamental concepts and the related business examples. However, I intend the lectures to be highly interactive to motivate active learning and continuous participation. You will learn the class topics by following the presentation as well as interjecting with your questions and responses to the questions I pose. A portion of class time will involve demos of Excel exercise. You will build your Excel skills by following my demos.

Skill-Building Exercise: To reinforce the class topics, I will provide in-class problems. This is a chance to check your knowledge and practice approaching decision problems. Instead of providing the instructor's solution, students may be asked to demonstrate their work and explain their approach clearly to the class. The idea of these exercises is to allow you to immediately apply the models and theories presented in lectures to relevant business problems; and the interactive classroom environment invigorates the learning process. *Students who are able to present their answers correctly will be awarded higher in-class participation points.*

Assignments and Tutorial Sessions: Assignments will be assigned each week and answers will be given at the tutorial sessions. Assignments should be submitted during the first 10 minutes of your registered tutorial session in the specified week. Late assignments are not accepted. Only one assignment will be randomly picked and graded for credits, whereas the rest will only be checked for the efforts. Although grading of some assignments are not accuracy-based, you should still devote considerable time to solving these problems. Practicing the problem-solving skills is essential for truly acquiring them. The tutorial sessions are valuable complements to the practice questions, as you will learn through active participation in the discussion carried out by Ms. Christina Ho. Additional problems may also be discussed every week during the tutorial. Tutorial participation will be assessed based on students' performance.

Project: One project will be assigned, and the final report is due on April 7 by 12:30 pm. Late submission is not allowed. You will complete them in self-selected groups of **four to five** people. If you have problems finding a group, please see Christina. Collaboration is key to learning and doing well on this project. Group members can evaluate each other's performance by providing comments on the peer evaluation form. Those who under-contribute may be penalized (**up to 100% grade deduction**).

Teaching and Learning Activities	Expected contact hour	Study Load (% of study)
T&L1. Interactive lectures	36	30%
T&L2. Tutorials	12	10%
T&L3. Group project and assignments	36	30%
T&L4. Self-study	36	30%
Total	120	100%

ASSESSMENT METHODS AND GRADING POLICY

Assessment Methods	Weight	Aligned CLO
Midterm exam (No make-up exam)	30%	CLO1, 2, 4
Final exam	40%	CLO1, 2, 4
Assignments	10%	CLO1, 2, 3, 4
In-class and tutorial participation	10%	CLO1, 2, 4
Project	10%	CLO1, 2, 3, 4
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Total: 100%		

Course Grade Descriptors

A+, A, A-	<ul style="list-style-type: none">• Demonstrate a strong understanding of all relevant knowledge• Handling questions professionally• High participation in discussions• Present arguments that have an element of originality• Achieve a standard of excellent performance in the exams with very accurate computation and very good analytical and problem solving skills• Excellent writing report
B+, B, B-	<ul style="list-style-type: none">• Demonstrate a good understanding of all relevant knowledge• Handling questions in a logical way• Good participation in discussions• Present arguments that go beyond the lecture and textbook• Achieve a standard of good performance in the exams with accurate computation and good analytical and problem solving skills• Good writing report
C+, C, C-	<ul style="list-style-type: none">• Demonstrate a basic understanding of the concepts involved• Fairly address questions as set• Some participation in discussions• Present arguments in a well-structure manner• Meet a standard of acceptable performance in the exams with reasonably accurate computation and acceptable analytical and problem solving skills• Acceptable writing report
D+, D	<ul style="list-style-type: none">• Demonstrate a minimum understanding of the concepts involved• Barely address questions as set• Minimal or no participation in discussions• Present arguments in a marginally acceptable manner• Meet a standard of marginally acceptable performance in the exams with some errors in computation and barely adequate analytical and problem solving skills• Marginally acceptable writing report
F	<ul style="list-style-type: none">• Demonstrate a poor understanding of the concepts involved• Unable or unwilling to handle questions• Minimal or no participation in discussions• Present arguments poorly• Fail to meet a standard of passing the exams with major errors in computation and inadequate analytical and problem solving skills• Poorly writing report

Assessment Rubrics for written group project and exams	
A+, A, A-	<ul style="list-style-type: none"> • Demonstrate a strong understanding of all relevant knowledge • Present arguments that have an element of originality • Achieve a standard of excellent performance in the assessments with very accurate computation and very good analytical and problem solving skills • Excellent writing report
B+, B, B-	<ul style="list-style-type: none"> • Demonstrate a good understanding of all relevant knowledge • Present arguments that go beyond the lecture and textbook • Achieve a standard of good performance in the assessments with accurate computation and good analytical and problem solving skills • Good writing report
C+, C, C-	<ul style="list-style-type: none"> • Demonstrate a basic understanding of the concepts involved • Present arguments in a well-structure manner • Meet a standard of acceptable performance in the assessments with reasonably accurate computation and acceptable analytical and problem solving skills • Acceptable writing report
D+, D	<ul style="list-style-type: none"> • Demonstrate a minimum understanding of the concepts involved • Present arguments in a marginally acceptable manner • Meet a standard of marginally acceptable performance in the assessments with some errors in computation and barely adequate analytical and problem solving skills • Marginally acceptable writing report
F	<ul style="list-style-type: none"> • Demonstrate a poor understanding of the concepts involved • Present arguments poorly • Fail to meet a standard of passing the assessments with major errors in computation and inadequate analytical and problem solving skills • Poorly writing report
Assessment Rubrics for in-class and tutorial participation	
A+, A, A-	<ul style="list-style-type: none"> • High participation in discussions • Always attend the tutorials and in-class discussions • Demonstrate a strong understanding of all relevant knowledge • Handling questions professionally • Present arguments that have an element of originality • Respect others and follow the class rules (no chatting and do not use cell phone)
B+, B, B-	<ul style="list-style-type: none"> • Good participation in discussions • Often attend the tutorials and in-class discussions • Demonstrate a good understanding of all relevant knowledge • Handling questions in a logical way • Present arguments that go beyond the lecture and textbook • Respect others and follow the class rules (no chatting and do not use cell phone)
C+, C, C-	<ul style="list-style-type: none"> • Some participation in discussions • Sometimes attend the tutorials and in-class discussions • Demonstrate a basic understanding of the concepts involved • Fairly address questions as set • Present arguments in a well-structure manner • Respect others and follow the class rules (no chatting and do not use cell phone)

D+, D	<ul style="list-style-type: none"> • Minimal or no participation in discussions • Rarely attend the tutorials and in-class discussions • Demonstrate a minimum understanding of the concepts involved • Barely address questions as set • Present arguments in a marginally acceptable manner • Respect others and follow the class rules (no chatting and do not use cell phone)
F	<ul style="list-style-type: none"> • Minimal or no participation in discussions • Almost never attend the tutorials and in-class discussions • Demonstrate a poor understanding of the concepts involved • Unable or unwilling to handle questions • Present arguments poorly • Behave poorly in class (often chatting with others, using cell phones, or being late)

COURSE POLICY

An orderly learning environment is extremely important for this course. Disruptive behaviors are inconsiderate to other students as well as to the instructor, and are absolutely unacceptable. Talking during lectures, arriving to class late, and any other disruptions of mobile devices are not allowed; students who are responsible for any of these actions will be subject to academic penalty and will be asked to leave the classroom.

Any dishonesty—such as cheating, false representation, plagiarism, etc.—that comes to my attention will result in an F in the course.

Academic dishonesty includes cheating, plagiarism, unauthorized collaboration, falsifying academic records, and any act designed to avoid participating honestly in the learning process. Scholastic dishonesty also includes, but is not limited to, providing false or misleading information to receive a postponement or an extension on an exam or other assignment. The responsibilities of both students and faculty with regard to scholastic dishonesty are described in detail in the [Disciplinary Committee Regulations](#). By teaching this course, I have agreed to observe all of the faculty responsibilities described in that document. By enrolling in this class, you have agreed to observe all of the student responsibilities described in that document. If the application of that policy statement to this class and its assignments is unclear in any way, it is your responsibility to ask me for clarification.

Students are encouraged to give feedback on the course through mid-term survey in addition to SETL around the end of the semester and online interaction via Moodle site.

Tentative Course Schedule*					
Week	Mon	Tue	Thu	Fri	Topic
1	16/01	17/01	19/01	20/01	- Introduction to Quantitative Analysis - Basic Probability & Statistics (Ch. 1)
2	23/01	24/01	26/01	27/01	- Basic Probability & Statistics (Ch. 1) - Regression Models (Ch. 3)
3	30/01	30/01	02/02	03/02	- Class suspension period for the Lunar New Year
4	06/02	07/02	09/02	10/02	- Regression Models (Ch. 3)
5	13/02	14/02	16/02	17/02	- Regression Models (Ch. 3) - <i>Project group member list due on Feb 14 -</i>
6	20/02	21/02	23/02	24/02	- Decision Theory (Ch. 2)
7	27/02	28/02	02/03	03/03	- Queuing Models (Ch. 8)
8	06/03	07/03	09/03	10/03	- Reading/Field Trip Week
9	13/03	14/03	16/03	17/03	- Queuing Models (Ch. 8) - Inventory Control Models (Ch. 5)
10	20/03	21/03	23/03	24/03	- Inventory Control Models (Ch. 5)
11	27/03	28/03	30/03	31/03	- Simulation (Ch. 4)
12	03/04	04/04	06/04	07/04	- Simulation (Ch. 4) - <i>Project due on April 7, 12:30 pm -</i>
13	10/04	11/04	13/04	14/04	- Simulation (Ch. 4) - Linear Programming (Ch. 6, 7)
14	17/04	18/04	20/04	21/04	- Linear Programming (Ch. 6, 7)
15	24/04	25/04	27/04	28/04	- Linear Programming (Ch. 6, 7) - Review
Exams					
Midterm exam: Mar 4 (Sat), 10:00 am to 12:00 noon; Venue: T2, Meng Wah Complex Final exam: TBD					

* Due dates and exam dates are subject to change. Please check Moodle for updated information. Holiday dates are grayed.