

THE UNIVERSITY OF HONG KONG
HKU Business School

IIMT3636 Decision and Risk Analysis I
2021-2022, Semester 1

GENERAL INFORMATION

Instructor: Dr. WANG, Liao

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Consultation times: by appointment

Tutor: TBC

Pre-requisites: ECON1280 Analysis of economic data *or* STAT1602 Business statistics *or* STAT1603 Introductory statistics *or* STAT2601 Probability & statistics I *or* equivalent

Co-requisites: None

Mutually exclusive: None

Course Website: Check Moodle course page

COURSE DESCRIPTION

Business decision-making involves considerable complexity and uncertainty. This course introduces the basic concepts in quantitative business analysis to help students gain a clear understanding of the key elements in the decision making process. This course covers the tools and the skills to analyze and solve problems 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.

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.

FACULTY GOALS		
FLG1: Acquisition and internalization of knowledge of the programme discipline		
FLG2: Application and integration of knowledge		
FLG3: Inculcating professionalism		
FLG4: Developing global outlook		
FLG5: Mastering communication skills		
FLG6: Cultivating leadership		
COURSE LEARNING OUTCOMES		
Course Learning Outcomes	Aligned Faculty Goals	
CLO1: Clearly identify and define a loosely structured business problem	FLG1	
CLO2: Select and use effective techniques to address the major challenges presented	FLG2	
CLO3: Use IT tools to verify, validate, and provide solutions to the decision process	FLG2, 4	
CLO4: Communicate and support your solution with qualitative explanations	FLG3, 5,6	
COURSE TEACHING AND LEARNING ACTIVITIES		
<p>Lecture: Fundamental concepts will be presented in lecture, and calculation examples will be provided to strengthen the understanding. Interactions with the lecturer (for example, asking questions, answering questions, initiating discussions on relevant topics) are highly encouraged and will count towards the participation credit.</p> <p>Skill-Building Exercise: To reinforce the class topics, in-class exercises will be provided. Students will be encouraged to present solutions to the class, and this will count towards the participation credit.</p> <p>Assignments and Tutorial Sessions: Assignments will be assigned <i>bi-weekly</i> and answers will be given at the tutorial sessions. Assignments should be submitted <i>in soft copies to Moodle</i> by due date specified on each assignment sheet. Late assignments will <i>not</i> be accepted, and all assignments count towards the total points. Grading of assignments is based on both accuracy and efforts. Tutorial participation will be assessed based on students' performance and count towards the participation credit.</p> <p>Project: One project will be assigned (due date to be announced). The soft copies of report and associated spreadsheet are required to be <i>uploaded to Moodle</i> by the due date. Late submission will <i>not</i> be accepted. You will complete the project in self-selected groups of <i>four to six people</i>. If you have problems finding a group, please see the tutor.</p>		
Course 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	Brief Description (Optional)	Weight	Aligned Course Learning Outcomes
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
Group Project		10%	CLO1, 2, 3, 4
	Total	100%	

STANDARDS FOR ASSESSMENT

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 project output
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 project output
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 project output
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

	<ul style="list-style-type: none"> • Marginally acceptable project output
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 • Poor project output
Assessment Rubrics for Each Assessment (Please provide us the details in a separate file if the space here is not enough)	
Assessment Rubrics for assignments, 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 project output
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 project output
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 project output
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 project output
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 • Poor project output that shows minimum efforts.

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 CONTENT AND TENTATIVE TEACHING SCHEDULE	
Please see the tentative schedule attached at the end.	
REQUIRED/RECOMMENDED READINGS & ONLINE MATERIALS (e.g. journals, textbooks, website addresses etc.)	
Lecture slides will be uploaded on Moodle.	
Optional but recommended textbook: <i>Quantitative Analysis for Management</i> , 13th Edition, Global Edition by B.E. Render, M.E. Hanna, and R.M. Stair. Prentice Hall, 2018.	

MEANS/PROCESSES FOR STUDENT FEEDBACK ON COURSE

- conducting mid-term survey in additional to SETL around the end of the semester
- Online response via Moodle site
- Others: _____ (please specify)

COURSE POLICY (e.g. plagiarism, academic honesty, attendance, etc.)

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 additional to SETL around the end of the semester and online interaction via Moodle site.

ADDITIONAL COURSE INFORMATION (e.g. e-learning platforms & materials, penalty for late assignments, etc.)

Please check the course website on Moodle on a regular basis.
Feedback (in-person or by email) is highly encouraged.

Tentative Course Schedule*	
Week	Topic
1	- Introduction - Basic Probability & Statistics (Topic 1)
2	- Basic Probability & Statistics (Topic 1) - Decision Theory (Topic 2)
3	- Decision Theory (Topic 2) - Linear Programming (Topic 3)
4	- Linear Programming (Topic 3)
5	- Linear Programming (Topic 3) - Mixed Integer Programming (Topic 3)
6	- Mixed Integer Programming (Topic 3)
7	- Reading/Field Trip Week
8	- Mixed Integer Programming (Topic 3) - <i>Midterm Exam</i> - <i>Project group member list due & Project release</i>
9	- Mixed Integer Programming (Topic 3) - Simulation (Topic 4)
10	- Simulation (Topic 4)
11	- Simulation (Topic 4) - Regression Models (Topic 5)
12	- Regression Models (Topic 5)
13	- Regression Models (Topic 5)
14	- Regression Models (Topic 5) - Review - <i>Project report due</i>
Exams	<i>Midterm exam: time&venue pending</i> - <i>Final exam: time&venue pending</i>
* Due dates and exam dates are subject to change. Please check Moodle for updated information. Holidays are greyed.	