# 1. General Information

<table>
<thead>
<tr>
<th>Course Subject</th>
<th>IIMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number</td>
<td>3636</td>
</tr>
<tr>
<td>Course Title</td>
<td>Decision and risk analysis I</td>
</tr>
<tr>
<td>Academic Years</td>
<td>2023-2024</td>
</tr>
<tr>
<td>Grading Method</td>
<td>Letter</td>
</tr>
</tbody>
</table>

# 2. Instructors

**Professor Wang, Liao**  
Office: Room 806 /F K.K. Leung Building  
Email: lwang98@hku.hk  
Office: 39171535  
Subclasses: 1A, 1B

**Professor Wan, Zhixi**  
Office: Room 803 /F K.K. Leung Building  
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Subclasses: 1C

**Professor Panchanatham, Sundara Natarajan**  
Office: Room TBD /F K.K. Leung Building  
Subclasses: 2E, 2F

**Professor Deng, Yipu**  
Office: Room 1308 /F K.K. Leung Building  
Email: yipudeng@hku.hk  
Office: 39171672  
Subclasses: 2G, 2H

# 4. Course Description

**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.

**Prerequisites**  
ECON1280: Analysis of economic data or STAT1602: Business statistic or STAT1603: Introductory statistics or STAT2601: Probability & statistics I
5. Course Objectives

1. 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: 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.

6. Faculty Learning Goals

Goal 1: Acquisition and internalization of knowledge of the programme discipline
Goal 2: Application and integration of knowledge
Goal 3: Inculcating professionalism
Goal 4: Developing global outlook
Goal 5: Mastering communication skills
Goal 6: Cultivating leadership

7. Course Learning Outcomes

<table>
<thead>
<tr>
<th>Course Teaching and Learning Activities</th>
<th>Aligned Faculty Learning Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLO1. Clearly identify and define a loosely structured business problem</td>
<td>✔</td>
</tr>
<tr>
<td>CLO2. Select and use effective techniques to address the major challenges presented</td>
<td>✔</td>
</tr>
<tr>
<td>CLO3. Use IT tools to verify, validate, and provide solutions to the decision process</td>
<td>✔</td>
</tr>
<tr>
<td>CLO4. Communicate and support your solution with qualitative explanations</td>
<td>✔</td>
</tr>
</tbody>
</table>

8. Course Teaching and Learning Activities

<table>
<thead>
<tr>
<th>Course Teaching and Learning Activities #</th>
<th>Expected Study Hours</th>
<th>Study Load (% of study)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T&amp;L1. Interactive lectures: 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.</td>
<td>36</td>
<td>30</td>
</tr>
<tr>
<td>T&amp;L2. Tutorials The tutorial sessions are valuable complements to the practice questions, as you will learn through active participation in the discussion carried out</td>
<td>12</td>
<td>10</td>
</tr>
</tbody>
</table>
8. Course Teaching and Learning Activities

by Mr. Eric Tam. Additional problems may also be discussed every week during the tutorial. Tutorial participation will be assessed based on students' performance.

T&L3. Group project and assignments: The project will be an in-class business competition that will take place on November 11. No reports will be submitted, and your performance will be evaluated based on the outcome of the competition. You will need to join a group of three to four people and discuss with group members to find a reasonable strategy for the competition. To prepare for the competition, you need to play the game by yourselves many times beforehand. Collaboration is important for learning and doing well on this project.

T&L4. Self-study

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<tbody>
<tr>
<td></td>
<td>36</td>
<td>30</td>
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</tbody>
</table>

Total: 120 Total: 100

9. Assessment Methods

<table>
<thead>
<tr>
<th>Assessment Methods</th>
<th>Description</th>
<th>Weight %</th>
<th>Aligned Course Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1. Midterm exam (make-up exam)</td>
<td>• 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</td>
<td>30%</td>
<td>1,2,4</td>
</tr>
<tr>
<td>A2. Assignments</td>
<td>• 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</td>
<td>10%</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>A3. In-class and tutorial participation</td>
<td>• 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</td>
<td>10%</td>
<td>1,2,4</td>
</tr>
<tr>
<td>A4. Project</td>
<td>10%</td>
<td>1,2,3,4</td>
<td></td>
</tr>
<tr>
<td>A5. Final Exam</td>
<td>40%</td>
<td>1,2,4</td>
<td></td>
</tr>
</tbody>
</table>

Assessment Rubrics

| A1. Midterm exam (make-up exam) | • 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 |
| A+,A,A- | B+,B,B- | C+,C,C- |

<p>| A+,A,A- | • 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- | • 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- | • 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 |</p>
<table>
<thead>
<tr>
<th>Assessment Rubrics</th>
</tr>
</thead>
</table>
| D+, D | • 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 | • 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 |
| A2. Assignments |
| A+, A, A- | • 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- | • 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- | • 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 | • 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 | • 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 |
| A3. In-class and tutorial participation |
| A+, A, A- | • 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- | • 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- | • 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 |
### Assessment Rubrics

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A4. Project</strong></td>
<td></td>
</tr>
</tbody>
</table>
| A+,A,A- | • 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- | • 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- | • 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 | • 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** | • 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 |

<table>
<thead>
<tr>
<th>A5. Final Exam</th>
<th></th>
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</thead>
</table>
| A+,A,A- | • 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- | • 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- | • Demonstrate a basic understanding of the concepts involved  
• Present arguments in a well-structure manner |
### Assessment Rubrics

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
</table>
| D+ , D | • 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 | • 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 |

### 10. Course Grade Descriptors

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
</table>
| A+, A, A- | • 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- | • 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- | • 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 | • 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 | • 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 |

### 11. Course Content and Tentative Teaching Schedule

<table>
<thead>
<tr>
<th>Topic/ Date/ Time</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# 11. Course Content and Tentative Teaching Schedule

<table>
<thead>
<tr>
<th>Session</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>- Introduction to Quantitative Analysis- Basic Probability and Statistics (Ch. 2)</td>
</tr>
<tr>
<td>2</td>
<td>- Basic Probability and Statistics (Ch. 2)</td>
</tr>
<tr>
<td>3</td>
<td>- Decision Theory (Ch. 3)</td>
</tr>
<tr>
<td>4</td>
<td>- Decision Theory (Ch. 3)</td>
</tr>
<tr>
<td></td>
<td>- Linear Programming (Ch. 7,8,9)</td>
</tr>
<tr>
<td>5</td>
<td>- Linear Programming (Ch. 7,8,9)</td>
</tr>
<tr>
<td>6</td>
<td>- Linear Programming (Ch. 7,8,9)</td>
</tr>
<tr>
<td></td>
<td>- Project group member list due and Project release</td>
</tr>
<tr>
<td>7</td>
<td>- Reading / Field Trip Week</td>
</tr>
<tr>
<td>8</td>
<td>- Simulation (Ch. 13)</td>
</tr>
<tr>
<td>9</td>
<td>- Simulation (Ch. 13)</td>
</tr>
<tr>
<td>10</td>
<td>- Simulation (Ch. 13)</td>
</tr>
<tr>
<td>11</td>
<td>- Project due in class on Apr 12</td>
</tr>
<tr>
<td></td>
<td>- Regression Models (Ch. 4)</td>
</tr>
<tr>
<td>12</td>
<td>- Regression Models (Ch. 4)</td>
</tr>
<tr>
<td>13</td>
<td>- Regression Models (Ch. 4)</td>
</tr>
<tr>
<td></td>
<td>- Review</td>
</tr>
</tbody>
</table>
12. Required/Recommended Readings & Online Materials

**Reading**


13. 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 |

14. Course Policy

General requirements in plagiarism, academic honesty and attendance apply. Any lateness or absence to the class needs to have the lecturer(s) officially informed with sound reason – otherwise penalty in the form of mark deduction might apply.

15. Additional Course Information

Further to what has been described in the assessment section, participation and engagement in the class and tutorial is required in this course. Lecturers will help students to see into their own work and to assist to bring it into its fullest manifestation, through an effective and interactive learning.