



1. General Information

Course Subject	IIMT
Course Number	1640
Course Title	Probability and Statistics for Business
Academic Years	2026-2027
Grading Method	Letter

2. Instructors

Professor ZHANG, Wei
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Subclasses: 1B

Professor CAI, Zhanrui
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Professor DUAN, Juntong
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Subclasses: 2C,2D,2E

4. Course Description

Course Description	This course introduces fundamental concepts of probability and statistics. It helps students to understand how to evaluate uncertainty using probability and conduct statistical inference. Students will learn how to solve real world problems with Excel and linear regressions.
Mutually exclusive	ECON1280 Analysis of Economic Data STAT1602 Business Statistics STAT1603 Introductory Statistics STAT2601/SDST2601 Probability and Statistics I STAT2901/SDST2901 Probability and Statistics: Foundations of Actuarial Science
Free Elective	Yes

5. Course Objectives

1. Descriptive statistics
2. Concept of probability, basic laws of probability, conditional probability
3. Random variables, expectation, variance and frequently used distributions
4. Statistical inference: sampling distribution, confidence interval, hypothesis testing, p-values

5. Course Objectives
5. Simple linear regression and model diagnosis

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						
Course Teaching and Learning Activities	Aligned Faculty Learning Goals					
	1	2	3	4	5	6
CLO1. Describe uncertainty by probability	✓	✓	✓			
CLO2. Comprehend basics of statistical inference	✓	✓	✓			
CLO3. Solve real-world problems by simple Monte Carlo simulations and linear regressions	✓	✓	✓			

8. Course Teaching and Learning Activities		
Course Teaching and Learning Activities #	Expected Study Hours	Study Load (% of study)
T&L1. Lectures	36	30
T&L2. Homework	36	30
T&L3. Self study	48	40
	Total: 120	Total: 100

9. Assessment Methods			
Assessment Methods	Description	Weight %	Aligned Course Learning Outcomes
A1. Individual Take-home Assignment	4 individual take-home assignments	15%	1,2,3
A2. In-class Activities/ Discussion	In-class participation and quiz	15%	1,2,3
A3. Mid-Term Test/ Assessment		20%	1,2,3
A4. Final Exam		50%	1,2,3

10. Course Grade Descriptors	
A+,A,A-	Strong evidence of superb ability to fulfill the intended learning outcomes of the course at all levels of learning: describe, apply, evaluate and synthesis.
B+,B,B-	Strong evidence of the ability to fulfill the intended learning outcomes of the course at all levels of learning: describe, apply, evaluate, and synthesis.
C+,C,C-	Evidence of adequate ability to fulfill the intended learning outcomes of the course at low levels of learning such as describe and apply but not at high levels of learning such as evaluate and synthesis.
D+,D	Evidence of basic familiarity with the subject.
F	Little evidence of basic familiarity with the subject.

11. Course Content and Tentative Teaching Schedule	
Topic/ Session	Content
1	Introduction, descriptive statistics: visualization and numerical summaries
2	Probability and conditional probability
3	Discrete random variable i
4	Discrete random variable ii, continuous random variable i
5	Continuous random variable ii
6	Sampling distribution
7	Confidence interval
8	Hypothesis testing i
9	Hypothesis testing ii
10	Simple linear regression i
11	Simple linear regression ii
12	Review class

12. Required/Recommended Readings & Online Materials	
Reading	There is no mandatory reading, the course material will be self-contained. For reference, see Stine and Foster: Statistics for Business (2nd editor) Sheldon Ross: A first course in probability (20th editor)

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

An orderly learning environment is extremely important for this course. Disruptive behaviors are absolutely unacceptable. Academic dishonesty includes cheating, plagiarism, unauthorized collaboration, falsifying academic records, and any act designed to avoid participating honestly in the learning process. Any such dishonesty will result in an F grade.

15. Additional Course Information

No late submission of assignments will be accepted.

All lecture notes and necessary materials will be posted on Moodle.

The instructor reserves all the rights to make necessary changes to the syllabus. All modifications will be announced as soon as possible.