Capital University of Economics and Business
Overseas Chinese College
Course Syllabus

Year and Semester	2024 Fall					
Course Name	Management Statistics					
Course Code	MAT330					
Course Type	☐ General Education (Required) ☐ General Education (Elective) ☑Basic Disciplinary Course ☐ Professional Course (Required) ☐Professional Course (Elective) ☐Professional Course (Expanded) ☐Professional Course (Advanced)					
Course Credits	3					
Course Hours	Total Class Hours	51	Lecture Hours	35	Experiment (Computer) Hours	16
Applicable object	☐ Freshman ☐ Sophomore ☑ Junior ☐Senior					
	☐Business Administration (Accounting)					
	☑ Information Management and Information Systems (Finance)					
Prerequisites	Calculus, Linear Algebra, and Probability & Statistics					
Instructor	Prof. Emma Zhu					
Contact Information	Office: C217					
	Tele: (010)83951082					
	Email: zhuleilei@cueb.edu.cn					
Office Hour						
Learning Centre						
Grade/Section	2022CFA; 2022IT					
Course Time/Place	2022CFA; F: 9:55-12:20 /B208 2022IT; W: 9:55-12:20 /B208					
Textbook	David R. Anderson, Dennis J. Sweeney, Thomas A. Williams, *STATISTICS FOR BUSINESS AND ECONOMICS*; *13e*, Thomason Learning, ISBN:.978-7-111-57327-2					

Reference Book

- M. R. Spiegel. *Schaum's outline of theory and problems of probability and statistics. Schaum's outline series*. McGraw-Hill, New York, 1975.
- L. Blank. *Statistical procedures for engineering, management, and science*. McGraw Hill, New York, 1980.
- K. Subrahmaniam. *A primer in probability, volume 111 of Statistics: textbooks and monographs.* Marcel Dekker, New York, second edition, 1990.
- W. Feller. *An introduction to probability theory and its applications. Wiley series in probability and mathematical statistics.* Wiley, New York, third edition, 1967-1968.

- N. C. Giri. *Introduction to probability and statistics (in two parts), volume 7 of Statistics: textbooks and monographs*. Marcel Dekker, New York, 1974.
- Y. G. Sinay. *Probability theory, an introductory course*. Springer-Verlag, Berlin; New York, 1992.
- David Salsburg. *The Lady Tasting Tea: How Statistics Revolutionized Science in the Twentieth Century.* Holt McDougal, 2002.

Course Description

Statistic theory is an applications-oriented, basic disciplinary course for students majored in information system management and business management. The main content is an introduction to mathematical statistics that emphasizes the probabilistic foundations required to understand probability models and statistical methods, topics covered will include confidence interval, hypotheses testing, analysis of variance, linear regression and applications in management. Students will not only develop skills of data analysis and ability of data-driven decision making, but also scientific thinking which are all indispensable for future study and professions.

Student Learning Objectives

After completing this course, students will be able to:

Knowledge	• estimate unknown parameters, including population mean, proportion. and variance; • identify situations of application of hypothesis testing procedures, including hypothesis testing about population mean, proportion and variance, and goodness fit; • explain the concept of experiment design and the method of ANOVA; • describe and interpret regression models;
Capability	• analyze data using descriptive and inferential statistics; • develop ability of data-driven decision making by statistical methods, including hypothesis testing, experimental design, and regression models; • construct the scientific thinking and mindset, include systematic thinking, logic thinking, critical thinking and strategic thinking;
Mindset	• develop the quality and morals of being objective, integrity and. dedication; • criticize the world with statistical philosophical view; • enhance national identity and pride.

Website Source

- Statistics & Probability: http://42explore.com/statistics.htm
- Charles M. Grinstead and J. Laurie Snell's textbook Introduction to Probability: http://www.dartmouth.edu/~chance/teaching_aids/books_articles/probability_book/book.html, an on-line textbook on probability and statistics.
- The Chance Website: http://www.dartmouth.edu/~chance/index.html

The goal of Chance is to make students more informed, critical readers of current news stories that use probability and statistics.

- Math Archives. Probability: http://archives.math.utk.edu/topics/probability.html. Statistics: http://archives.math.utk.edu/topics/statistics.html
- The Probability Web: http://www.mathcs.carleton.edu/probweb/probweb.html

Teaching Methods

This course consists of lectures, discussions, group projects, assignments, individual presentations and online activities. Students must be prepared to finish some small questions and small quiz during the class on Xuexitong application.

Grade Criterion

Component	Weight	Description
Final Exam	20%	A cumulative final examination will be given based on all of the contents of the class. The exam paper may be composed of multiple-choice questions, short answer questions, essay questions, problems, preparation of financial statements and a summary of gains from a particular course. Students should rely primarily on homework assignments to give them a sense of what they may see for material on exams.
Mid-Term Test	20%	A cumulative midterm test will be given based on all of the contents that have been taught in class. The test paper may be mainly composed of multiple-choice questions and it should be completed within 15 minutes in class.
Homework	15%	Most of the assigned homework is taken from the Exercises in the textbook. Assignments will be collected at the clearly stated date. Late assignments will not be accepted. The graded assignments will be kept by the tutor for reference and won't be returned to students.
Quizzes	15%	There will be at least 2 quizzes during the semester. Quizzes may or may not be announced in advance. It may also be used as a way to check the attendance. Quizzes will test your knowledge of both concepts and the application of those concepts.
Presentation	10%	The students will be divided into several groups to prepare a presentation. Each student is required to be involved in the presentation. The topics can be selected from the textbook or lectures. Each group need to finish a PPT related to the topic which is given and hand in the related resources to the teacher before the presentation.
Participation	10%	Individuals will be asked to participate individually in a question and answer at least 5 times during the semester. The performances should be counted in their participation.
Attendance	10%	Refer to attendance policy listed below
Total	100%	

Detailed Grade Computation

	Before Midterm	After Midterm
Attendance	5%	5%
Participation	5%	5%
Homework	5%	10%

Quizzes	5%	10%
Presentation		10%
Midterm test	20%	
Final exam		20%
Total	40%	60%

Assessment of Student Performance

☞ ***Self-Study and Reading ability Practice***

Instructor will give out the chapters or the reference books to read and use class hours to have discussion; students should be able to show a proactive attitude and ability for self-study and reading. Knowledge and oral English will be elements of homework or presentation score.

☞ ***Homework***

Students should finish their homework by themselves. Copying from others will be treated as cheating and the homework scores will be lowered. Students should hand in all assignments on time. Late assignments will be accepted at the discretion of the instructor (i.e., when the student was ill or had an excused absence). Late assignments without reasonable proof will be reduced in score by 50%.

☞ ***Attendance***

Because the course covers a great deal of material, attending every class session is very important for performing well.

- Being late for 15 minutes or more is considered an absence.
- Five hours or above of unexcused absences will result in the lower level of the final grade by one grade band (e.g. from C – to D +). Any excused absence must be discussed directly with the teacher.
- Absence which is more than 1/3 of the total teaching hours will cause an F (a failing grade) directly. but students are welcome to continue attending classes.
- An incomplete grade (I) will be considered in case of medical or family emergencies.

☞ ***Participation***

- Students should participate in classes actively. Half of participation grade is determined by their presentation in class. They are encouraged to ask questions relevant to the subject and express their own opinions. Every student should respect the ideas, opinions, and questions of their classmates.
- Students should also use office hours to ask questions or talk with the instructor for good communication and effective learning.
- Frequent visiting the instructor and chatting in English during office hours is highly recommended.
- Any misbehavior and non-class related activities in class will result in the lower level of the participation grade, including ringing cell phones.
- All above behaviors will be solely evaluated by the instructor for scoring.

Topical Course Outline

Week	Content	Platform	Homework
1	● Syllabus & Orientation ● Review Hypothesis Tests • Test of Population Means • Test of Population Proportion	Tencent Meeting & XueXi tong & Excel	XueXitong
2	● Ch10 Inferences About Means & Proportions With Two Populations • Inferences About the Difference Between Two Population Means: Independent Samples	Tencent Meeting & XueXi tong & Excel	XueXitong
3	•Inferences About the Difference Between Two Population Means: Matched Samples •Inferences About the Difference Between Two Population Proportions: Matched Samples **•Summary and discussion of HW**	Tencent Meeting & XueXi tong & Excel	XueXitong
4	● Ch11 Inferences About Population Variances • Inference about one population variance •Inference about two population variances **•Summary and discussion of HW**	Classroom & XueXi tong & Excel	XueXitong
5	● National Holiday		XueXitong
6	● Ch12 Comparing Multiple Proportions, Tests of Independence and Goodness of Fit • Testing the Equality of Population Proportions for Three or More Populations	Classroom & XueXi tong & Excel	
7	• Multiple comparison test • Test of Independence	Classroom & XueXi tong & Excel	XueXitong
8	• Goodness of Fit Test, Multinomial distribution • Goodness of Fit Test, Normal distribution **•Summary and discussion of HW**	Classroom & XueXi tong & Excel	XueXitong
9	● Review and Midterm	Classroom & XueXi tong & Excel	XueXitong
10	●Ch13 Experimental Design &ANOVA • Completely randomized design • ANOVA	XueXi tong & Excel	XueXitong

11	• Randomized block design • Factorial experiment •**Summary and discussion of HW**	Classroom & XueXi tong & Excel	XueXitong
12	● Ch14 Simple Linear Regression • Simple linear regression model • Least Square Methods • Coefficients of determination •Test of significance • Estimation and Prediction	Classroom & XueXi tong & Excel	
13	● Ch15 Multiple Regression • Multiple regression models • Least square methods • Coefficients of determination	Classroom & XueXi tong & Excel	XueXitong
14	• Test of significance • Estimation and Prediction • Residual analysis •**Summary and discussion of HW**	Classroom & XueXi tong & Excel	XueXitong
15	● Ch16 Regression Analysis: Model Building • General linear model • Determine when to add or delete variables • Variable selection procedure •Autocorrelation and the Durbin-Watson test	Classroom & XueXi tong & Excel	XueXitong
16	● Presentation	Classroom	
17	● Final Review	Classroom & Excel	

Note: *Some chapters or sections may leave for self-study, this is the students' duty to learn and understand, they may also be included in the quizzes or exams.*

A review in Chinese may be held during L.C. and O.H. in the semester.

Teacher's Office Hour

- The instructor's office hour is shown in the front of the office door.
- Students are suggested to use the instructor's office hour and learning center to ask questions or talk with the instructor once at least per week for good communication and effective learning, which is recorded in the students' participation.
- The time can be scheduled by instructors or students, or both.

Cheating and Plagiarism

Cheating is not tolerated. Any student caught cheating on a quiz; test or exam will be given a mark of zero (0) for the particular work. At the beginning of the semester the definition of plagiarism will be carefully explained, when any thoughts or writings of another person are used, they must be clearly identified (usually one uses quotation marks) and the source notes. **If any student is caught cheating on any homework assignment, the highest score the student can earn in that course is a "C"**

Important Dates

Midterm Test	Midterm Test: 8th week
Final Exam	Final Exam: Jan 2nd – Jan 10th

Note: *This syllabus is tentative and may be changed or modified throughout the semester. All students will be notified and a new syllabus will be given.*

Instructor: Leilei Zhu **Department Head: Jingning Li**