Capital University of Economics and Business
Overseas Chinese College
Course Syllabus

MAT 332 SYLLABUS

Semester and Year	2018 Spring (March 4, 2018 - July 20, 2018)
Course Name	Statistical Thinking and Data Analysis
Course Code	MAT 332
Course Credits	3
Teaching Hours	48 Hours
Prerequisite Course	Calculus, Linear Algebra, and Probability
Instructor	Dr Stewart Dods
Contact Information	Office: C217, Tele: 83951082 Email: stewart.dods@cueb.edu.cn
Learning Center Hours	W 13:30-15:30
Office Hours	M 15:30-17:30
Time/Place	Y01 ACCA M 08:00–09:50 博学楼 208 & W 08:00–08:50 博学楼 210 Y01 CIMA M 13:30–15:20 博学楼 208 & W 09:00–09:50 博学楼 210
Textbook	David R. Anderson, Dennis J. Sweeney, Thomas A. Williams, STATISTICS FOR BUSINESS AND ECONOMICS, 11 EDITION, Thomason Learning, ISBN: 9787111350293

Course Description

An introduction to mathematical statistics that emphasizes the probabilistic foundations required to understand probability models and statistical methods. The purpose of *Statistics for Business and Economics* is to provide students, primarily in the fields of business administration and economics, with a sound conceptual introduction to the field of statistics and its many applications. The course is applications-oriented, and topics covered will include the sampling process, point estimate, confidence interval, hypotheses testing, analysis of variance and linear regression.

Student Learning Objectives

- To provide students with a good understanding sampling process.
- To help students develop the ability to estimate unknown parameters.
- To introduce students to some of procedures of decision making using hypothesis testing.

- To develop the ability and skill of data analysis and model building by using linear regression models.

References

- 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.

Some Websites

- 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 and individual presentations. Students must be prepared to finish some small questions and small quiz during the class. After each chapter there will be some mini presentations which should be held by individuals.

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Grade Criterion:

Component	Weight	Description
Final Exam	20%	A cumulative final examination will be given based on all of the contents of the class. A minimum of 25% of the exam (5 of the 20%) will consist of questions utilizing the application of critical thinking.
Mid-Term Test	20%	A cumulative midterm test will be given based on all of the contents of the first half of the class. A minimum of 25% of the test (5 of the 20%) will consist of questions utilizing the application of critical thinking.
Homework	15%	Homework problems will be assigned throughout the term, including but not limited to: terminologies, research project, and reading assignments.
Quiz	15%	There will be several times quizzes during the semester. The purpose of the quizzes is to ensure that students keep up with the readings.
Participation	10%	Individuals will be asked to participate individually in questions during the semester. Students are required to meet with their teachers every week. Their performances should be counted in their participation.
Presentation	10%	Refer to the handouts.
Attendance	10%	Refer to attendance policy listed below.
Total	100%	

Note: Quizzes and examinations will also cover self-study contents.

Detailed Grade Calculation

In the semester, the grades of attendance, participation, homework assignments, and quizzes account for 60 percent of a student's final grade, and the midterm exam and final exam both account for 20 percent of the final grade. 40 percent of the final grade comes before midterm and 60 percent after midterm, as shown in the following table:

	Before midterm	After midterm
Attendance	5%	5%
Participation	5%	5%
Homework/assignment	5%	10%
Quiz	5%	10%
Midterm exam	20%	
Final exam		20%

Presentation		10%
Total	40%	60%

Grading Policy

A+ 100 – 97	A 96-93	A- 92–90	B+ 89-87	B 86-83	B- 82–80
C+ 79–75	C 74-70	C- 69–67	D+ 66–63	D 62-60	F 59 -0

Exam Schedule

- **Midterm Test: April 23rd – April 27th 2018**
- **Final Exam: June 25th – June 29th 2018**

Homework

Students should finish their homework (except for group projects) by themselves. **Copying from others will be treated as cheating. Students' homework scored will be lowered.** Students should hand in all assignments promptly and on time. Late assignment will be accepted at the discretion of the instructor (i.e., when the student was ill or had an excused absence). Assignment turned in late without proof of illness or had an excused absence will be reduced in score by 50%.

Assignment should be printed out. Anything that cannot be read will be marked wrong. Printing requirements are as followed: single space between lines, double space between paragraphs, font size is 12 (maximum).

Attendance

Being late for 15 minutes will result in unexcused absence. Each unexcused absence will result in 10% reduction of attendance grade. Five hours of unexcused absences will result in the lowering of grade by one level, i.e. A to A-. 18 hours (30% of total class hours) of absences under any circumstances forces a withdrawal from the course and get a grade of "F". An excused absence must be discussed directly with the teacher. An incomplete grade (I) will be considered in case of medical or family emergencies. **Students must bring their textbook to class.**

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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 hour to ask questions or talk with the instructor for good communication and effective learning. Any misbehavior and non-class related activities in class will result in the lowering of the participation grade, including ringing beepers and cell phones. All the above behaviors will be solely evaluated by the instructor for scoring.

Topical Course Outline

Week Index	Content
Week 1 5–9 Mar	**Syllabus & Orientation** **Ch10 Inferences About Means & Proportions With Two Populations**
Week 2 12–16 Mar	**10.1, 10.2&10.3 Inference About the Difference Between Two Population Means**
Week 3 19–23 Mar	**10.4 Inference About the Difference Between Two Population Proportions**
Week 4 26–30 Mar	**Ch11 Inferences About Population Variances**
Week 5 2–6 Apr	**Ch12 Tests of Goodness of Fit and Independence**
Week 6 9–13 Apr	**12.2 Test of Independence** I **Ch13.1 Experimental Design &ANOVA** **13.2 ANOVA and the Completely Random Design**
Week 7 16–20 Apr	**13.3 Multiple Comparison Procedures** **13.4 Randomized Block Design**
Week 8 23–27 Apr	**13.5 Factorial Experiment**
Week 9 30 Apr – 4 May	**Quiz I** **Review**
Week 10 7–11 May	**Midterm Exam**

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Week 11 14–18 May	**Ch14 Simple Linear Regression**
Week 12 21–25 May	**Ch15 Multiple Regression** **15.1-15.5**
Week 13 28 May – 1 June	**Ch15 Multiple Regression** **15.6-15.9**
Week 14 4–8 June	**Ch16 Regression Analysis: Model Building**
Week 15 11–15 June	**Presentation**
Week 16 18–22 June	**Quiz II** **Review**
Week 17 25–29 June	**Final Exam**

Note: Self-Study contents will be also included in your quiz and examinations.

Teacher's Office Hours

The instructor's office hour is shown in the front of the office door. Students are required to use the instructor's office hour 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.

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.*

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Important Dates

Spring Semester, 2018 **March 4, 2018— July 20, 2018**

Mar.4	Registration
Mar.5	Classes Begin
Mar.16	Last Day to Drop or Add a Course
Apr.5	Qingming Festival (tentative)
Apr.20	Spring Sports (tentative)
May 1	Labor Day Holiday (tentative)
May.7-11	Midterm Exams
May 14-18	Summer School Registration (tentative)
June 18	Duanwu Festival (tentative)
June 25-29	Sophomore and Junior students' Final Exam
July 2-20	Sophomore and Junior students' Social Practice，Summer School
July 16-20	Revision and Final Exam Period
July 23	Summer Vacation Begins

Summer School **July 2, 2018—July 20, 2018**

May 14	Courses Registration (tentative)
July 2	Summer School Begins
July 20	Summer School Ends

Instructor: Dr Stewart Dods **Department Head：Prof. Jingning Li**