0701S201
Introduction to Statistics

Instructor: Yan Shi
Time: Monday through Friday (June 17, 2019 - July 19, 2019)
Office Hours: 2 hours (according to the teaching schedule)
Contact Hours: 60 (50 minutes each)
Credits: 4
Location: Huiquan Building
Office: Huiquan Building 518
E-mail: TBA

Course Description

Statistics and probability constitute the mathematics of uncertainty. This is an introductory course that gives the students' knowledge on both descriptive and inferential statistics. Topics include graphic and numerical representations of various types of data; probability and statistics, discrete and continuous probability distributions; sampling and estimations; statistical inferences.

Required Textbook(s)

Introduction to Probability and Statistics, 13th Edition by William; Beaver, Robert J.; Beaver, Barbara M. Mendenhall (2006)..

Prerequisites

No prerequisites

Course Hours

The course has 25 sessions in total. Each class session is 120 minutes in length. The course meets from Monday to Friday.

Course Schedule

Please note that the schedule is meant to give an overview of the major concepts in this course. Changes may occur in this calender as needed to aid in the student's development.

Week 1: Describing data and basic probabilities
- Monday: Introduction
- Tuesday: Discrete and Continuous variables, bivariate data
- Wednesday: Describing data with graph and numerical measures
- Thursday: Basic probability
- Friday: discussion session (case study)

Week 2: Expectation, probability distributions
- Monday: Discrete/absolutely continuous expectations, conditional expectation
- Tuesday: Variance, covariance, correlation, generating functions
- Wednesday: Bayes' rule
- Thursday: Binomial, Poisson, Hypergeometric probability distribution
- Friday: discussion session (case study)

Week 3: More on normal distribution, Sampling distributions and limit theorems
- Monday: Normal distribution
- Tuesday: Distribution approximation
- Wednesday: Sampling distributions,
- Thursday: The law of large numbers, the central limit theory
- Friday: Midterm

Week 4: Large-sample estimation, test of hypotheses
- Monday: Point, interval and difference estimations
- Tuesday: Likelihood function, maximum likelihood estimation,
- Wednesday: Testing hypotheses and P-values
- Thursday: Sample-size calculations
- Friday: discussion session (case study)

Week 5: Statistical inferences from small samples
- Monday: Prior and posterior distributions, inferences based on the posterior
- Tuesday: Student's t distribution
- Wednesday: Small sample inferences
- Thursday: Reviews
- Friday: Final Exam

Course Requirements

Course Assistants

The CA will run a weekly one-hour problem session on the relevant material. You are invited to attend as many of these problem sessions as you like. Their times and locations will be announced in the first class.

Homework

There will be an assignment due at the beginning of each class covering the material from the previous day and introducing some of the material from the day on which it is due. No late homework will be accepted, except for the last one. You are encouraged to make sure of the following resources: your classmates, course assistants and the textbook. When you work in a team, you should write down all people's name in your term.

Exams

There will be one midterm and one final exam. No calculators or notes may be brought into the exams. The times will be posted or announced later. If you must miss a midterm exam because of an approved conflict, please contact me as soon as possible, and no later than one week before the exam.

Grading Policy

Midterm is worth 30% of the final course grade, the homework is worth 40%, and the final exam is worth 30%.

Grading Scale

The instructor will use the grading system as applied by JNU:

Definition	Letter Grade	Score
Excellent	A	90~100
Good	B	80~89
Satisfactory	C	70~79
Poor	D	60~69
Failed	E	Below 60

Attendance

Attendance is mandatory in the class. It would be recorded each class and forms part of students' participation record. Students should inform the instructor at the earliest opportunity if they need to ask for a leave. All absences may have negative effect on students' final grades. Any students with more than three unexcused absences will automatically fail the course.

Academic Integrity

As members of the Jinan University academic community, students are expected to be honest in all of their academic coursework and activities. Academic dishonesty, includes (but is not limited to) cheating on assignments or examinations; plagiarizing, i.e., misrepresenting as one's own work any work done by another; submitting the same paper, or a substantially similar paper, to meet the requirements of more than one course without the approval and consent of the instructors concerned; or sabotaging other students` work within these general definitions. Instructors, however, determine what constitutes academic misconduct in the courses they teach. Students found guilty of academic misconduct in any portion of the academic work face penalties that range from the lowering of their course grade to awarding a grade of E for the entire course.