



## Shanghai Jiao Tong University

### EC313 Introduction to Statistics

|   |   |                |         |
|---|---|----------------|---------|
| <b>Instructor Information</b>   | Jin Zhang<br>Home Institution: Shanghai Maritime University<br>Email: zhj0314@hotmail.com<br>Office Hours: Determined by Instructor   |                |         |
| <b>Term</b>   | June 28, 2021<br>- July 23, 2021  | <b>Credits</b> | 4 units |
| <b>Class Hours</b>  | Monday through Friday, 120 mins per teaching day  |                |         |
| <b>Discussion Sessions</b>  | 2.5 hours each week, conducted by teaching assistant(s)   |                |         |
| <b>Total Contact Hours</b>  | 66 contact hours (1 contact hour = 45 mins, 3000 mins in total)   |                |         |
| <b>Required Texts (with ISBN)</b>   | Business Statistics—A First Course, David Levine, Kathryn Szabat, and David Stephan, 7th edition (global edition),<br>ISBN 10: 1-29-209593-8.<br>ISBN 13: 978-1-292-09593-6 (Print)<br>ISBN 13: 978-1-292-09602-5 (PDF) |                |         |
| <b>Prerequisite</b>   | N/A   |                |         |
| The course might be moved to online delivery due to COVID-19 pandemic. Students will be notified once the decision is made. |   |                |         |



### Course Overview

This course is an introduction to the basic concepts and procedures behind probability and statistics. Some of the topics covered are descriptive statistics, experimental design, regression, probability, discrete random variables including the binomial distribution, the normal distribution, confidence intervals, hypothesis tests for a single parameter, inference on two samples and the chi-square distribution to test goodness-of-fit and independence. Knowledge in calculus is preferred.

### Learning Outcomes

After the course, students should learn some basics concepts and methods in statistics to analyze simple problems in business.

### Grading Policy

|                      |     |
|----------------------|-----|
| Quizzes and Homework | 30% |
| Midterm Examination  | 30% |
| Final Examination    | 40% |

### Grading Scale is as follows

| Number grade | Letter grade | GPA |
|--------------|--------------|-----|
| 90-100       | A            | 4.0 |
| 85-89        | A-           | 3.7 |
| 80-84        | B+           | 3.3 |
| 75-79        | B            | 3.0 |
| 70-74        | B-           | 2.7 |
| 67-69        | C+           | 2.3 |
| 65-66        | C            | 2.0 |
| 62-64        | C-           | 1.7 |
| 60-61        | D            | 1.0 |
| ≤59          | F (Failure)  | 0   |

Due to the on-going pandemic, there is a possibility that in-person courses move to online delivery. Students will be notified once the decision is made.

If the in-person courses are to be changed to online courses, we will make a few adjustments:

**Lecture:** Each lecture will be uploaded on SJTU SCE online learning platform on a daily basis. Students are required to watch them according to the course schedule.

**Discussion:** There will be two hours open session on ZOOM every week. The attendance of the discussion is important as it is part of your final score.

**Homework:** homework sets will be collected on blackboard.

**Office hours:** office hours will be conducted via Zoom.

**Exam:** the midterm and final exams will be conducted remotely.



### Class Schedule

| Date   | Lecture  | Readings     |
|--------|--|--------------|
| Day 1  | Introduction, Defining and collecting data           | Chapter 1    |
| Day 2  | Organizing and visualizing variables                 | Chapter 2    |
| Day 3  | Numerical description measures                       | Chapter 3    |
| Day 4  | Basic probability 1                                  | Chapter 4    |
| Day 5  | Basic probability 2                                  | Chapter 4    |
| Day 6  | Discrete probability distribution                    | Chapter 5    |
| Day 7  | Normal distribution                                  | Chapter 6    |
| Day 8  | Sample distribution                                  | Chapter 7    |
| Day 9  | Midterm review                                       |              |
| Day 10 | <b>Midterm Examination</b>                           | Chapter 1-7  |
| Day 11 | Confidence interval estimation                       | Chapter 8    |
| Day 12 | Fundamentals of hypothesis testing: one sample tests | Chapter 9    |
| Day 13 | Two-sample tests                                     | Chapter 10   |
| Day 14 | One-way ANOVA  | Chapter 10   |
| Day 15 | Chi-square tests                                     | Chapter 11   |
| Day 16 | Simple linear regression 1                           | Chapter 12   |
| Day 17 | Simple linear regression 2                           | Chapter 12   |
| Day 18 | Multiple regression                                  | Chapter 13   |
| Day 19 | Final Review   |              |
| Day 20 | <b>The Final Examination</b>                         | Chapter 1-13 |