

California State University, Sacramento

2021 Summer Program

STAT 303 Intermediate Statistics

Course Outline

Course Code: STAT 303

Instructor: Byung-Joo Lee

Home Institution: University of Notre Dame

Office Hours: By appointment

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Credit: 3

Course Description:

This course teaches intermediate statistical concept applied to the economics data analysis. This course emphasizes the understanding of statistics and how statistics are used in the business problems. Topics includes simple hypothesis testing, multiple hypothesis testing, statistical inferences involving two or multiple populations for mean and variance comparisons, independence of populations, simple and multiple regressions, ANOVA, and nonparametric test statistics such as Wilcoxon rank-sum test, Kruskal-Wallis test.

This course consists of 4 sessions of 120 minutes each per week for 4 weeks. This course is very intensive and covers course content equivalent to one regular semester three credit course in U.S. university.

We will use Microsoft Excel to do various statistical analyses. Microsoft Excel is designed for spreadsheet program, but it also has good statistical data analysis functions. I will teach various Excel functions in class for the statistical analysis.

Textbook:

1. Statistics for Business and Economics, 14th ed., Anderson, Sweeney, Williams, Camm, Cochran, Fry, and Ohlmann, CENGAGE Learning, 2020
2. Lecture slides will be provided in the class.

Prerequisite:

1. Introductory Statistics, or equivalents.

GRADING SYSTEM:

A 4.0

A- 3.7

B+ 3.3

B 3.0

B- 2.7

C+ 2.3

C 2.0

C- 1.7

D+ 1.3

D 1.0

D- 0.7

F 0.0

Attendance:

Students should attend class regularly, arrive on time and not leave early. While you are in class, show the proper respect to your instructor and to your classmates. When you must miss a class, it is your responsibility to get the class material from me or your classmates. Class attendance will be checked. You will earn maximum 15 points for attendance for the final grade. Late arrival and excused absence will cost 0.5 point. Excessive absence may result in the course grade of "F". Grading scale is as following with appropriate curve:

A: 86-100% B: 71-85% C: 51-70% D: 41-50% F: Below 40%

Academic Honor Code:

The Code of Honor will be strictly applied. Honor Code pledges "I will not participate in or tolerate academic dishonesty." Students will not give or receive aid on exams. This includes, but is not limited to, viewing the exams of others, sharing answers with others, and using books or notes while taking the exam. You can collaborate to study your homework, but you have to submit your own completed homework to receive appropriate credit. Copying solutions from others, whether they are current or past, constitutes plagiarism.

Computer Program:

We will use Microsoft Excel to do various statistical analyses. Microsoft Excel is designed for spreadsheet program, but it also has good statistical data analysis functions. I will teach various Excel functions in class for the statistical analysis. Microsoft Office Excel and Power Points are required for the class

Tentative Course Schedule

Week 1: Sampling Distribution

Video Lectures

Session 1: Chapter 7: Sampling Distribution: *Normal dist., Central Limit Theorem* 2

Session 2: Chapter 8: Interval Estimation 2

Session 3: Chapter 9: Hypothesis Testing: *z-test, t-test* 3

Week 2: Statistical Inferences on Population Variances

Session 4: Chapter 10: Inferences About Means and Proportions 3

Session 5: Chapter 11: Inferences About Population Variances: χ^2 - test 2

Session 6: Chapter 12: Test of Goodness of Fit, Independence and Multiple Proportions 3

Session 7: **Midterm Exam: Chapters 7-12**

Week 3: Regression Analysis

Session 8-9: Chapter 14: Simple Linear Regression 4

Session 10: Chapter 15: Multiple Regression 3

Week 4: ANOVA & Nonparametric Statistics

Session 11-12: Chapter 13: Analysis of Variance (ANOVA) 4

Session 13-14: Chapter 18: Nonparametric Statistics 4

Session 15: **Final Exam: Chapters 13-15, 18** **Total Number of Video Lectures** **30**