STAT 103 Intermediate Statistics

Course Code: STAT 103

Instructor: Byung-Joo Lee

Home Institution: University of Notre Dame

Office Hours: By appointment

Email: bjleend@gmail.com

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 Wilcoxson 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.

Prerequisite:

STAT 50 or instructor consent

Required Textbooks:

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.

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**

Grading & Evaluation:

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".

Letter Grade Assignment
Final grades assigned for this course will be based on the percentage of total points earned and are assigned as follows:

Letter Grade	Percentage	Performance
A	93-100%	Excellent Work

Letter Grade	Percentage	Performance
A-	90-92%	Nearly Excellent Work
B+	87-89%	Very Good Work
B	83-86%	Good Work
B-	80-82%	Mostly Good Work
C+	77-79%	Above Average Work
C	73-76%	Average Work
C-	70-72%	Mostly Average Work
D+	67-69%	Below Average Work
D	60-66%	Poor Work
F	0-59%	Failing Work

Course Policies

Build Rapport

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your instructor know as early as possible. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing your instructor when difficulties arise during the semester so that they can help you find a solution.

Understand When You May Drop This Course

It is the student's responsibility to understand when they need to consider disenrolling from a course. Refer to the Course Schedule for dates and deadlines for registration. After this period, a serious and compelling reason is required to drop from the course. Serious and compelling reasons includes: (1) documented and significant change in work hours, leaving student unable to attend class, or (2) documented and severe physical/mental illness/injury to the student or student's family.

Commit to Integrity

As a student in this course (and at this university) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this class and also integrity in your behavior in and out of the classroom.

Academic Honesty Policy & Procedures

"The principles of truth and honesty are recognized as fundamental to a community of scholars and teachers. University expects that both faculty and students will honor these principles, and in so doing, will protect the integrity of academic work and student grades."

Definitions

"**Cheating** is the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means."

"Plagiarism is a form of cheating."

"Plagiarism is the use of distinctive ideas or works belonging to another person without providing adequate acknowledgement of that person's contribution."