Instructor
Hsienming Lien
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Lectures
Wednesday: 13:00-16:00, Computer Center Classroom 5

Office Hours
Wednesday: by appointment.

Overview
This course is a series of two-semester course at undergraduate level. It is designed to give students a basic knowledge of statistical methods, particularly with applications in the fields of business and economics. The purpose of this course is to develop critical reasoning skills necessary to understand, interpret, and draw conclusions from the abundant quantitative data in the real world. Thus, students can effectively communicating the results of statistical analyses and assess much of the research literature in his or her own particular field. Topics in the first semester include descriptive statistical measures, probability distributions, hypothesis testing and with applications of the theory to portfolio selection and gambling. In the second semester, we will study ANOVA, basic regression models, interpretations and forecasting of regression models. We also learn how to use statistical software packages such as EXCEL to analyze data.

TA Session
There will be one hour TA session every week. Time and place to be announced later.

Textbooks
The required textbook for this course is:

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Additionally, students may find the following books useful:

Grading

There will be a three-hour mid term examination and a three-hour final examination, dates and times to be announced in class. There will be four in-class test quizzes held every three weeks, of which scores of the higher three will be selected for grades. Between exams and quizzes, there will be problem sets assigned every week (about 5 problems at each week). Grading will be as follows. There will be one midterm and one final exam. In addition, you will have to take quizzes frequently on the TA meetings. The grading policies are as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Problem Sets</td>
<td>10%</td>
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<tr>
<td>Quizzes</td>
<td>20%</td>
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<tr>
<td>Midterm</td>
<td>35%</td>
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<tr>
<td>Final</td>
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Course Outline

First Semester

1. Introduction to Statistics
   - Data Collection
   - Presenting Data in Tables, Charts and Graphs
   - Numerical Descriptive Measures (Location and Dispersion)

2. Probability
   - Basic Probability
   - Discrete Probability Distributions
   - Normal Probability Distribution and Other Continuous Distributions
   - Sampling Distributions

3. Statistical Inference I
   - Point Estimation
   - Confidence Interval Estimation

Second Semester

1. Statistical Inference II
   - Introduction
   - Hypothesis Testing for Single Population
   - Hypothesis Testing for Two Populations

2. Analysis of Variance (ANOVA)
   - One-way ANOVA
   - Two-way ANOVA

3. Nonparametric Statistics – Chi-Square Applications
• Test of homogeneity
• Test of independency
• Test of goodness of fit

4. Simple Linear Regression and Correlation

• Introduction to regression analysis
• Ordinary least squares method (OLS)
• Correlation analysis

5. Multiple Regression Analysis

• Multiple regression model
• Dummy variable
• Other issues
• Excel/SPSS manipulation