

Vesalius College

Course description

Course title: Intermediary Statistics

Course code: STA 201E

Teacher responsible: Scott Gassler

Course description:

Statistics is concerned with: (1) describing a data set (describe and extract information from a large set of data, organize and summarize sample data) (descriptive statistics); (2) make predictions or decisions about a data set based on information contained in a sample (inferential statistics). This course is following STA101 in which an introduction to both branches of statistics was given. It concentrates more especially on (1) the comparison of more than two populations (e.g. analysis of variance), (2) methods that include more than one explanatory variable (e.g. multiple regression), (3) time series.

Course objectives:

This course aims at providing students with a more advanced understanding of inferential statistics (drawing conclusions from data) and its applications. The emphasis is on the practice of statistics rather than on mathematical proofs. (This does not imply that the course lacks rigor.)

At the end of the course, you should be able to:

- critically analyse data sets and apply the tools of statistics to data in order to improve decision making;
- use statistical software and a scientific calculator to do statistical computations;
- communicate the results of your statistical work, and more specifically:
- write up the results of your statistical analysis in a consultancy report consisting of:
 1. a non-technical summary aimed at decision makers, so that they can improve their decisions, and
 2. a section –aimed at peers– explaining the technical details and exact interpretation of your results.

Grade weighting scheme:

Attendance, preparedness, class participation	10%
Problem sets (three, each carrying 1/3) (all have a summary writing component)	20%
Midterm exam	30%
Final exam	40%

Used course material (handbooks, readers, readings, newspapers, magazines) and references:

- The **main text** is: Gerald KELLER & Brian WARRACK, *Statistics for Management and Economics, 6th ed.*, Duxbury Press, 2003. ISBN: 0-534-36186-9. STA101 Introduction to Statistics roughly covers the first half of Keller and Warrack, STA202 Intermediate Statistics the second half.
- A **Calculator** is required for this course.
- For some of the assignments with bigger datasets, you'll need a **personal computer** (Mac or PC) that runs **Microsoft Excel**. Install the **Analysis ToolPak** from the Value Pack on the Office CD-ROM **and Data Analysis Plus 4.0** from the CD accompanying Keller and Warrack's book. Remember that copying software is theft, regardless of whether you like Microsoft or not. As a student, you get a considerable discount on Microsoft Office.
- If you don't have your own computer, use the computers from the computer rooms on campus, or ask someone to use his/her computer for the assignment.