

Math 121: Introduction to Statistics

Spring 2006, Hampden-Sydney College

Course Information and Syllabus

Professor:

Marcus Pendergrass, Ph.D.

email: Marcus.Pendergrass@GMail.com

office and hours: TBD

Course description: The goal of this course to to introduce the student to the ways in which probability and statistics are used in problem solving and decision making. Topics include graphical representation of data, measures of central tendency and variability, elementary concepts in data collection and design of experiments, elementary probability concepts, distributions including the binomial and normal distributions, correlation and regression, confidence intervals, and elementary hypothesis testing. Special emphasis is placed upon the understanding of concepts and the proper use of statistics in real life situations. This is a four-hour course. In order to increase the likelihood of success in this course it is *strongly recommended* that you attend class without fail, do all assigned homework, read the textbook, focus on understanding the concepts (not just the rote computations), and that you seek help from the professor and other sources (tutoring, library, textbook CD and/or website, etc.) when needed.

Meeting times and locations:

- MWF, 9:30 - 10:20, in Johns 207
- T, 2:30 - 3:20, in Bagby 111

Text:

Introduction to the Practice of Statistics, Fifth Edition, by David S. Moore and George P. McCabe. If you have purchased a new textbook it

will include a CD-ROM which we will be using in the class. The CD includes data sets from the textbook as well as applets you can run. These data sets and applets are also available for free on the textbook website (<http://bcs.whfreeman.com/ips5e/default.asp>).

Required technology:

- TI-83 graphing calculator
- Microsoft Excel

Grade determination:

- Three in-class exams: 50%
- Comprehensive Final Exam: 25%
- Quizzes/Homework: 15%
- Written Project: 10%

Attendance and make-up policy:

You are expected to attend all class meetings. If you miss classes it will most likely be reflected in your grades (i.e. you will perform poorly). Absences are excused only for illness, college sponsored activities, and recognized emergencies. You must have the proper documentation for an excused absence. If at all possible, you must obtain my permission for an excused absence **before** you miss class. (For example, if you know you are going to miss a scheduled exam due to illness or a college-sponsored activity, you must tell me that before the exam.) You must also assume full responsibility for all material covered during your absence, including scheduling any make-up quizzes or exams. A grade of 0 will be assigned for all work missed due to unexcused absences. Make-up assignments will be given only when the reason for missing the assignment meets the criteria for an excused absence.

Class schedule:

- Jan. 15 - 21. Graphical and numerical displays of data; the normal distribution
- Jan. 22 - 28. Looking at relationships; single-variable regression
- Jan. 29 - Feb. 4. More on relationships and regression
- Feb. 5 - 11. Test 1; producing data; design of experiments and sampling design
- Feb. 12 - 18. Basic probability
- Feb. 19 - 25. Sampling distributions and the Central Limit Theorem
- Feb. 26 - Mar. 4. More on sampling distributions and the Central Limit Theorem
- Mar. 5 - 11. Test 2; introduction to inference
- Mar. 12 - 18. Spring Break - no classes
- Mar. 19 - 25. More on basic inference
- Mar. 26 - Apr. 1. Inference for distributions
- Apr. 2 - 8. Inference for distributions and proportions
- Apr. 9 - 15. Inference for proportions and differences of means; Test 3
- Apr. 16 - 22. Inference for differences of means and differences of proportions
- Apr. 23 - 29. Inference for regression
- Apr. 30 - May 6. Tuesday 2 May is last class meeting. Study days and Final Exams.
- May 7 - 13. Final Exams. Wednesday May 10 is the last day of Finals.