

Syllabus for STA 3032

***Course Number,
Title, and
Prerequisites***

Course Number: STA 3032
Course Title: Probability and Statistics for Science and Engineering
Credit Hours: 5 semester hours
Prerequisites: MAC 2312 Calculus with Analytic Geometry II.

***Course
Description***

This is a calculus-based first course in probability and statistics intended for scientists and engineers. The emphasis is both on theory and applications.

The course topics include the following: population parameters versus sample statistics, collection and analysis of data, descriptive statistics, measures of location and variability, histogram, stem-and-leaf and box plot graphical methods, basic probability concepts, axioms of probability, joint probability and marginal probability, conditional probability and independence, named discrete and continuous random variables and their probability distributions and cumulative distributions, interval estimation of parameters, tests of hypothesis for one-sample and two-sample problems, analysis of variance and design of experiments, linear regression and correlation, categorical data analysis, statistical quality control, and distribution-free methods (if time permits).

Course Materials

- Montgomery, D. and Runger, George. (2007). *Applied Statistics and Probability for Engineers, 4th Ed.* Boston: John Wiley and Sons, Inc. ISBN 0-471-74589-8
- *Minitab* Statistical Software Package (see page xii in preface)
- Course Study Guide (available on the course web site)
- Tentative Course Schedule (available on the course website)

Course Policies

Lectures

Lectures will be posted for each week by the preceding Friday. A typical week consists of four daily lectures reserving a fifth day for review and quizzes. Weeks with holidays and exams will reduce the number of lectures for that week.

From each day's lecture, a set of suggested homework assignments will be given. The assignments are usually posted at the end of the lecture notes immediately preceding the attachment, if any. They are *not* posted in the Assignments section. The number of exercises given varies from day to day. Practice makes perfect (statistics is not a spectator sport!). In fact the "secret" to excelling in this course is to complete or attempt to complete all of the suggested homework, seek out help (fellow students, mentor, or instructor) when needed, and keep current with the homework. To assist you, there will be a number of examples and worked-out exercises in each session.

Quizzes

With the exception of Week 1, there will be an **online quiz every Thursday through Friday** during the term, except for exams weeks and for Minitab assignments weeks. The quiz will be available to take for an entire 48-hour period over the particular Thursday and Friday. Questions will be very similar to the suggested homework problems. The two lowest quiz scores will not count toward your grade. There will be **no quiz make-ups**. A missed quiz will result in a score of zero. Note that you can miss up to two quizzes without the zeros adversely affecting your grade; however, it is in your best interest to at least attempt all online quizzes.

Posted Homework Assignments

Each week teams will be assigned one problem that will be posted on the discussion board. Each member is expected to post a response that contributes to the problem's solution or explains the solution with additional detail or insights. Each student is also expected to comment on at least one additional problem solution posting other than his or her own team's posting. This may be a critique, alternative solution, or additional insight. **Participation points will be awarded largely for the quality of the posting** as assessed by the mentor or instructor. Number of postings is only a secondary grade consideration; therefore, please refrain from repeating previous postings or posting unrelated discussion. Postings will be locked out by Friday of each week and a new discussion board will be opened for the next week.

Minitab Assignments

You will be asked to complete two data analysis assignment involving a data set and application of computer software. Each student will work complete the assignment individually. We will be primarily using the data analysis software, Minitab. The assignments will be submitted electronically in a word processor document such as Microsoft Word. Minitab output is to be copied and pasted into the document and any required discussion and interpretations are to be typed directly below the pasted object.

Tentative Minitab assignment due dates:

- Assignment 1: July 18, 2004
- Assignment 2: August 3, 2007

Penalties and Bonuses

Assignments must be turned into the digital drop box by the time and date they are due. A penalty will be assessed against any late assignment. Twenty-five percent (25%) of the grade will be subtracted from the overall score for the first 24 hours it is late beyond the due date. No assignment will be accepted for grade if it is submitted *more than 24 hours after the due date*. If some emergency prevents you from turning them in on time, written documentation must be submitted to the mentor for consideration.

Examinations

1. There will be a two-hour midterm examination and a two-hour final examination. *The **final** examination will **not** be **comprehensive**.*
2. The examinations will be closed books and closed notes, but the use of a pocket calculator is encouraged. You will be allowed to bring with you two sheets of formulas (both front and back on standard sized paper.) The formula sheets must be prepared in your own handwriting and they are to be submitted with the examination papers for review. (No shrinkage or machine-produced copy is permitted.)
3. The tentative Tuesday-Wednesday timeframes for the examinations in Summer 2007 are:
 - Midterm Examination: June 27, 2007
 - Final Examination: August 1, 2007
4. The weights for the midterm and final examinations are 25% each.
5. The examinations must be taken at the scheduled time and at a designated location. *No student is exempt from any examination.* Any request for a makeup examination must be approved **prior** to the scheduled time for the regular examination. Written evidence must be provided for any such request, and excuses will be approved for personal reasons only in extremely serious cases. Makeup examinations should be completed within 48 hours of the scheduled time for the regular examination.
6. You will receive a zero (0) for missing a scheduled examination without excuse. No request for a makeup examination will be granted after the examination has taken place.

Need Help?

Michael Crane is the mentor for STA 3032 You may reach her and ask questions by email at mcrane@stat.fsu.edu Soon after the course begins, he will set up an email response schedule. This schedule will be designed with your needs in mind and to establish expectations for a response.

Other resources may be utilized after the course begins to further enhance the help process.

Grading

The evaluation of your course performance consists of five components: participation, quizzes, Minitab assignments, midterm examination, and final examination. *Partial credit* will be awarded in both the Minitab assignments and the examinations. The weights for the components are the following:

- Participation=15%
- Quizzes = 20%
- Minitab Assignments = 15%
- Midterm Exam = 25%
- Final Exam=25%.

Consistent with the University policy, the letter grades will be assigned according to the following scale:

(FSU does not assign A+ grade)	A: 93% and up	A-: 90% and up
B+: 87% and up	B: 83% and up	B-: 80% and up
C+: 77% and up	C: 73% and up	C-: 70% and up
D+: 67% and up	D: 63% and up	D-: 60% and up
F: less than 60%		
For the S/U grade system, an "S" is equivalent to a "C-" or better grade.		

Drop Date

- May 14, 2007 (Wednesday) is the last day to drop a course without receiving a grade. Dropping may require the Dean's permission.

Disclaimer: This is a tentative syllabus only. Deviations may be necessary.