

## Information Sheet for STAT 3401—Spring 2006—Dr. Trumbo

**TEXT:** Wackerly, Mendenhall, Scheaffer: *Mathematical Statistics with Applications*, 6th ed. Duxbury, 2002 (ISBN 0-534-37741-6).

**PREREQUISITES:** Differential and integral calculus. (Concurrent enrollment in integral calculus is acceptable; but *not recommended* for students with lower than a "B" grade in differential calculus.) Calculus is used *frequently* in this course, differential almost from the start, integral from about the 3rd week. A brief quiz on some parts of calculus *actually used in the course* will be given at the second class meeting.

**TENTATIVE OFFICE HOURS/ MESSAGES:** Office: SC N319. Phone: (510) 885-4133. Messages: 885-3435. Email: [bruce.trumbo@csueastbay.edu](mailto:bruce.trumbo@csueastbay.edu). (Subject line must begin STAT3401=. Your name must appear in the subject line if not in the sender line. *No attachments.*)

**Tuesday:** 5:50-6:20pm

**Thursday:** 3:30-4:00pm

Notes: If I am not in my office at the moment you call or arrive, please check with the Statistics Department office, SC N229, (510) 885-3435. Sometimes I have to go to the Statistics Office when advising a student.

**STUDY GROUPS:** You are strongly encouraged to form small study groups for mutual self-help. At a minimum, you should exchange telephone numbers or email addresses with other class members so you can trade information, class notes, or homework answers. As explained below, I do not grade "on the curve"; you are not competing with other students for grades.

**COURSE OBJECTIVES AND TOPICS COVERED:** This course covers basic rules of probability theory and their applications to probability modeling. It counts towards majors in Statistics, Mathematics and CS. The course is prerequisite for the MS program in Statistics and covers many of the probability topics normally included in comprehensive exams for the MS in Mathematics and in Statistics.

We will cover all of Chapters 1–4 (except sections marked as optional) and selected parts of Chapters 5–7 as announced in class. Lectures will contain a few topics not found in the text, including the use of software for computations (see below)—for example, an introduction to R statistical software, which is useful for computing probabilities and doing simulations. (R is excellent free software available from [www.R-project.org](http://www.R-project.org). Download it immediately.) You will also be responsible for a some specified items in the text that are not covered in lectures.

In summary, *your job* is to master the material in Chapters 1–4 and selected topics in Chapters 5–7; *my job* is to provide guidance and emphasis and to provide demonstrations and examples in order to make your work as productive and interesting as possible.

**EXAMINATIONS AND QUIZZES:** There will be two midterm exams and a final exam. All exams will be "closed book" with a "formula sheet" permitted according to rules specified in class. The first midterm (*tentatively* scheduled for Thurs., Apr. 20) will include mainly topics in Chapters 1–3 and the second midterm (*tentatively* Tues, May 16) will cover mainly topics in Chapters 3 and 4. The final exam (as scheduled by the University) will emphasize topics from Chapters 4 and designated parts of Chapters 5–7, but will, in effect, be comprehensive because of the cumulative nature of the material. You must provide your own paper (8.5" x 11"), graph paper, and a hand calculator for use during exams. Bring your student ID with you to all exams. Unannounced open-book quizzes covering current material may occur at any time. Some will require Scantron sheets, keep 4.25" x 11" Scantron sheets with your book or notes and bring to all classes.

**GRADING:** The exams (each with a total of 100 points) count as three equal parts of the course grade. Each quiz counts 10 points (ignoring the two quizzes with lowest scores). One or two projects may also be assigned

(30 points each). In addition, subjective factors such as maturity of approach on the final exam, regular class attendance, and quality of classroom participation may be taken into account in determining your course grade. I do not grade on the curve. The *approximate* average exam scores separating letter grades are

A 85 B 75 C 60 D 50 F.

I have a "zero tolerance" policy on academic dishonesty. *All* incidents involving academic dishonesty will be reported to the University administration, and will ordinarily result in a grade of F for all involved. During exams, it is *your obligation* to keep your work out of the sight of others.

**POLICY ON MAKE-UP WORK:** Generally, midterms must be taken as scheduled and may not be made up. If one midterm is missed, *at my option* a substitute score may be constructed based on your standing relative to the rest of the class on the other midterm and the final. If two midterms are missed, the grade F will ordinarily be assigned for the course. With appropriate documentation, your request in advance, and my agreement, a missed final exam will result in an IN grade, usually with an explicit make-up date specified within a few weeks. Otherwise, a missed final exam will ordinarily result in an F grade. Quizzes may not be made up.

**HOMEWORK:** Suggested minimal homework assignments will be made in class, but at most a few designated assignments will be collected and corrected. Probability is both theoretical and applied. Unfortunately, the theory does not always provide a straightforward guide to applications. It is only by working problems that the theory can be mastered and that some applied principles can be learned. You will probably need to work more problems than I assign, and you need to work at least the assigned problems *between one lecture and the next* in order to keep current with the material.

Some homework problems will be discussed in class. Some exam and quiz problems will be similar to assigned homework problems. You should compare your answers to those in the back of the book, discuss your answers with other students, and consult with me in case of difficulties not resolved otherwise. A student solutions manual to some of the problems in the book is available. If you are interested in buying it, order online or contact the Pioneer bookstore early in the quarter.

**KEEPING UP TO DATE:** The material in this course is highly cumulative. To a large extent, you have to master one concept before you can begin to understand the next. You will need to keep up to date on a *daily* basis. Waiting a full week to do any study or problems is risky. Waiting to do homework until just before exams is a strategy for disaster.

**STATISTICAL SOFTWARE:** In recent years, the use of software to do computations in probability and statistics has become increasingly important. This is true in education to make ideas clearer, in research to explore new ideas, and in on-the-job applications of probability modeling and statistical inference. In this course we will use the R statistical package. R is especially suitable for computing distributions and doing simulations. It is excellent free software available from [www.R-project.org](http://www.R-project.org). Before the second week of class you are expected to install R on a suitable PC, Mac or UNIX machine. Learning a few of the basics of R is a requirement of the course. An introduction to R will be included in the course. (If you want to learn more about R than is required in this course, excellent manuals and instructional materials are available online.) Occasional class demonstrations may use Minitab software. (Minitab is available on the computers in the College of Science Computer Lab and, under University license, on your personal computer. Learning how to use Minitab is optional. Statistics majors will find it useful for purposes beyond this course.)

**CLASSROOM COURTESY:** Your cooperation in maintaining a satisfactory learning environment in the classroom is expected: Cell phones *always* turned off in the classroom and computer lab; no food in the classroom (water OK); no personal discussions with other students while I am lecturing (not even about the course); arrive *on time* and stay for the full length of lectures. There will be snack/restroom breaks in each scheduled class period.

Bay Area traffic being what it is, *occasional* late arrival may be unavoidable. In this case, please try to enter the classroom as inconspicuously as possible and take an empty seat as near as possible to the door — usually NOT your regular seat.