
Math 338 – Statistics Applied to Natural Sciences

Fall 2009 - Section 7, MH 452, MW 1:00-2:15 p.m.

Section 8 (lab), MH 452, MTWR 2:30-3:20 p.m.

Instructor: Mortaza (Mori) Jamshidian, Professor

Office: MH 180, **Phone:** 657-278-2398

Office Hours: MW 4:00-5:30 p.m., or by *appointment*

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Text: Introduction to the Practice of Statistics, Sixth Edition, by Moore, McCabe, and Craig, Publisher: W. H. Freeman.

StatsPortal: You need to purchase a student access code to the **StatsPortal** (see the last page of this syllabus for more information).

Calculator and software: A **calculator** with statistical functions is required. We will use the statistical **package R**.

Your e-mail address wanted: You are **required** to fill out the “Student Information Form” ([click here](#)) and submit it to mori@fullerton.edu no later than **tomorrow**, 5:00 p.m. **Do not** save the Student Information Form as a PDF file and attach to an e-mail. You need to **use the submit button** on the form and follow the instructions. **If you’re unable to submit the form**, send me an e-mail with all the required information on the form. **Make sure** to include your **name** and your course “**Math 338**” on your e-mail. Also, **make sure** to provide an e-mail address that you check frequently. I will send class notes, various communiqué, and announcements about our class through e-mail. **Note:** Any credits that you lose due to not establishing your e-mail connection with me on time will be your responsibility.

I will send a “test e-mail” to all who submit their information. Please check your e-mail before you come to the class on **Wednesday August 26th**. If you do not receive my test e-mail, please see me after class to resolve any problems there may be.

Course topics: Students will learn how to produce data using sampling survey methods as well as design of experiments. Tabular, graphical and numerical techniques that can be used to explore and summarize data will be introduced. Students will understand basic probability theory concepts of random variables, probability mass and probability density functions, expected value and variance. A few commonly used discrete and continuous probability models will be introduced. The probability theory learnt will be utilized in introducing concepts of sampling distributions, point estimation, confidence intervals, and hypothesis testing. The course will also include a preliminary introduction to discrete data analysis (two way contingency tables), analysis of variance, and regression analysis.

Math 338 fulfills a General Education requirement. Further details on learning goals are given below. The writing requirement for the course will be fulfilled through the reports that will be prepared for the lab activities.

Course requirements and grading policy: After every class session you will have homework that will be due by the beginning of the next session. Quizzes will also be assigned. **Homework and Quizzes (15%)** will be assigned and graded through StatsPortal. There will be **lab projects (15%)**, for which you will prepare written reports.

Finally, there will be two midterm exams (**40%**) and a final exam, theory (**25%**) and lab (**5%**). The exams will be closed book and closed notes. However, you will be allowed to bring a page of crib-sheet for each exam.

The following is a tentative exam schedule:

<i>Exam I</i>	<i>Exam II</i>	<i>Final</i>
Mon. Sept. 28	Wed. November 4	Mon. Dec. 14 (2:30-4:20)
		Wed. Dec. 16 (Lab, 2:30-4:20)

The exams will be designed to test your understanding of the concepts being covered in the course. This means that the exams will not consist solely of problems that closely resemble the homework. Instead, they may contain problems that combine two or more different concepts or test your understanding of a definition or a theorem. Some questions will require a written response. These will be graded for exposition as well as for mathematical content.

Letter grades will be assigned as follows:

Percent	97-100	90-96	88-89	85-87	80-84	78-79	75-77	70-74	67-69	60-66	00-59
Grade	A+	A	A-	B+	B	B-	C+	C	D+	D	F

CNSM Study 25-35: I am an advocate of the **CNSM Study 25-35** campaign. **CNSM Study 25-35** represents the need for a full-time student (12 to 15 units) to spend *25 to 35 hours per week* studying to succeed in her/his classes.

Make-up exams will be given only in extreme instances and only with advance permission of the instructor. Any student who does not take an exam at the scheduled time without prior consent of the instructor will receive a grade of zero on that exam. If any student feels that a sudden illness is sufficiently extreme to warrant a make-up exam, the instructor must be provided with documentation prepared by an appropriate authority.

Learning Goals: This course achieves all of the general education learning goals of category III A.1 of the Mathematics Department. This course achieves all of the general education learning goals in this category which are:

- To understand and appreciate the varied ways in which mathematics is used in problem-solving.
- To understand and appreciate the varied applications of mathematics to real-world problems.
- To perform appropriate numerical calculations, with knowledge of the underlying mathematics, and draw conclusions from the results.
- To demonstrate knowledge of fundamental mathematical concepts, symbols, and principles.
- To solve problems that requires mathematical analysis and quantitative reasoning.
- To summarize and present mathematical information with graphs and other forms that enhance comprehension.
- To utilize inductive and deductive mathematical reasoning skills in finding solutions, and be able to explain how these skills were used.
- To explain the overall process and the particular steps by which a mathematical problem is solved.

- To demonstrate a sense of mastery and confidence in the ability to solve problems that requires mathematical concepts and quantitative reasoning.

These goals are assessed through the course work, including homework, classroom and lab activities, quizzes, exams, and projects reports.

Two broad goals of the course are to provide students an appreciation of the very important role of the field of statistics in empirical research, and to teach students to use some useful statistical methods in empirical research. Particular goals of the course are

- To learn basic techniques for exploring and describing data sets.
- To understand and appreciate the importance of how data are produced and the difference between experimental and non-experimental studies.
- To learn basic inferential methods, understand why they work, and appreciate their basic theoretical properties.
- To learn use of a statistical software.

Academic Integrity: Students who violate university standards of academic integrity are subject to disciplinary sanctions, including failure in the course and suspension from the university. Since dishonesty in any form harms the individual, other students and the university, policies on academic integrity are strictly enforced. I expect that you will familiarize yourself with the academic integrity guidelines found in the current student handbook (see <http://www.fullerton.edu/deanofstudents/judicial/policies.htm>).

Examples of actions that constitute academic dishonesty include, but are not limited to:

1. Unacceptable examination behavior – communicating with fellow students, copying material from another student’s exam or allowing another student to copy from an exam, possessing or using unauthorized materials, or any behavior that defeats the intent of an exam.
2. Plagiarism – taking the work of another and offering it as one’s own without giving credit to that source, whether that material is paraphrased or copied in verbatim or near-verbatim form.
3. Unauthorized collaboration on a project, homework or other assignment.
4. Documentary falsification including forgery, altering of campus documents or records, tampering with grading procedures, fabricating lab assignments, or altering medical excuses.

Emergency Evacuation: In the event of an emergency such as earthquake or fire:

- Take all your personal belongings and leave the classroom. Use the stairways located at the east, west, or center of the building.
- Do not use the elevator. They may not be working once the alarm sounds.
- Go to the lawn area towards Nutwood Avenue. Stay with class members for further instruction.
- For additional information on exits, fire alarms and telephones, **Building Evacuation Maps** are located near each elevator.
- Anyone who may have difficulty evacuating the building, please see the instructor.

Furlough information

As you are probably aware, CSUF’s budget for this year has been significantly reduced affecting all areas of the campus. Faculty and staff are required to take furlough days without pay meaning that instruction and usual services will be disrupted at various times during the year. This semester, the Math Department Office will be closed on designated staff furlough days, which are posted outside MH-js157. Further, classes will not meet

formally on those days where a furlough day is observed by the instructor. The specific days when a class will not meet will vary from course section to course section and instructor to instructor. Wednesday **October 21st**, Monday **November 2nd**, and Wednesday **December 9th** are my furlough days that effect your class, and therefore our class will not meet. Please note that while faculty are on furlough, students are not and therefore assignments will be given for those days. This is a very difficult time for all of us. We are working to provide the best education possible given the resources available to us.

Some important dates

September 8 (Tuesday): Last day for students to ADD with a permit. All permits expire at midnight on September 8.

September 8 (Tuesday): Last day for students to DROP **without** a grade of "W". Students drop using Titan Online.

October 2 (Friday): Last day the Math Department will be flexible on the approval of late withdrawal requests. Beginning Monday, October 5, students must have a serious and compelling reason for withdrawing (e.g. medical reason) and must provide supporting documentation for their reason. **Students who are considering withdrawing, please do so BY October 2.**

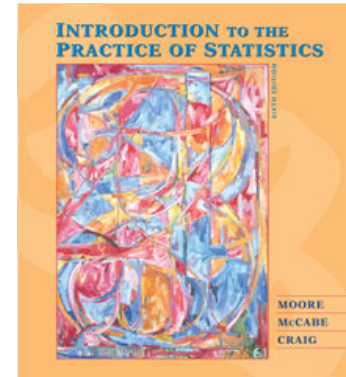
Furlough Day: October 21st. Campus closed.

November 13 (Friday): Last day to withdraw with a truly serious and compelling reason that is clearly beyond the student's control. Students must document their reason.

STATSPORTAL

One click. One place. For all the statistical tools you need.

Your Online Learning Solution
for Statistics!



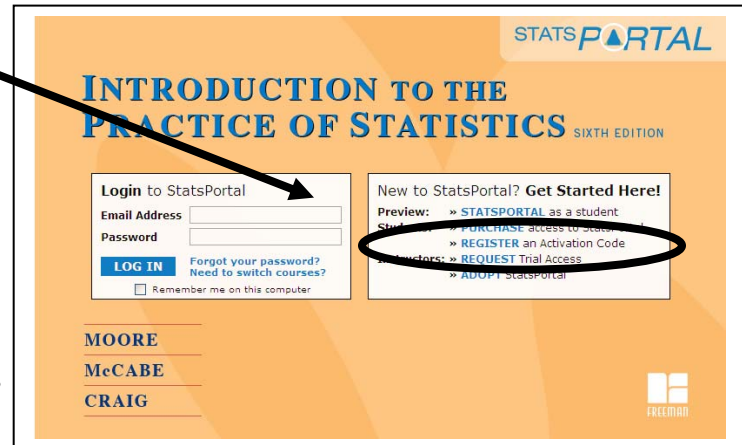
StatsPortal is required for this course.

You will need to obtain access to StatsPortal by purchasing it as a package with the textbook through the bookstore, or directly from the StatsPortal Web site at <http://portals.bfwpub.com/ips6e>. Please note that the StatsPortal *includes the eBook* – therefore you do *not* need to acquire both it and the textbook, but if you prefer a printed text, it can be purchased with the text for a nominal fee.

Accessing StatsPortal.

Below are purchasing options. Once you have your access, registering is simple. Follow these steps:

- 1) Go to <http://portals.bfwpub.com/ips6e>.
- 2) Select the “Register an Activation Code”
- 3) Fill in the requested information
(note: be sure to write down your password for future use)
- 4) Click “Next” at the bottom of the page, confirm the information on the following screen, and click “Create Account” to complete the registration process
- 5) Once you have registered and you log into the site, you will be taken to the homepage, where you can find “eBook,” “Resources,” and “Assignments” tabs along the top banner of the site



PURCHASE OPTION #1: Bookstore

You may purchase the printed textbook packaged *with* a 12 month *StatsPortal Access Card* directly from your campus bookstore...

*Cost for *StatsPortal* access card packaged with the text is an additional \$10 net.

*Cost for *StatsPortal* stand alone access card is \$42 net (not including any additional bookstore mark-up).

PURCHASE OPTION #2: Online

You may purchase *StatsPortal* access online directly from W.H. Freeman & Company . <http://portals.bfwpub.com/ips6e>. *Remember – *StatsPortal* includes the complete eBook!

*Cost for *StatsPortal* direct is \$52 to the student.

Technical support is available 24/7 for both you and your instructors.

Toll Free: (800) 936-6899 or via e-mail at techsupport@bfwpub.com, or visit us at <http://bfwpub.com/techsupport>

* Results from schools participating in a focus group surveys conducted Spring 2007 (1 section per school).

* Prices subject to change

Features Include:

StatsPortal is organized around three main components:

1) Interactive eBook

Integrates a complete and customizable online version of the text with all of its media resources. This ebook is not just PDFs of the text. You can quickly search the text, highlight key areas, and add notes. There are also integrated learning tools, such as Data Sets, StatsTutor, CrunchIt statistical software and Applets.

2) Resources:

Organizes all of the resources into one location for ease of use. Resources include:

- **StatTutor Tutorials** tied directly to the textbook, containing visuals, audio, applets, and animations.
- **Statistical Applets** to help students master key concepts through visualization.
- **CrunchIt! Statistical Software** is easily accessible and also easy to use, offering the basic statistical routines covered in the introductory courses and more.
- **Stats@Work Simulations** put the student in the role of consultant, helping them better understand statistics within the context of real-life scenarios.
- **EESEE Case Studies** developed by The Ohio State University Statistics Department are timely, real examples with real data. Each is built around questions that make students think carefully about the statistical issues raised by the stories.
- **Data sets** are available in ASCII, Excel, JMP, Minitab, TI, SPSS, and S-Plus formats.
- **Student Solutions to Odd-Numbered Exercises** includes explanations of crucial concepts and detailed solutions to odd-numbered problems with step-by-step models of important statistical techniques.
- **Statistical Software Manuals** for Excel, Minitab, JMP, SPSS, and TI-83/84 provide instruction, examples, and exercises using specific statistical software packages. Also available for Excel are “add-ins.”

3) Assignment Center:

Where instructors can post additional materials and homework. Be sure to check is often for any new assignments.