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Office Hours	TR 10-11am and by appointment.	
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Office Hours	M 1:15-2:15 and T 9:25-10:25	T 9:30-10:30 and F 11-12
Class Hours	TR 1:00-2:15 in 331 SMI	
Textbook	<i>Statistics for the Life Sciences</i> , 3d edition, by Samuels and Whitmer	
Web	<a href="http://www.stat.wisc.edu/courses/st371-ane">http://www.stat.wisc.edu/courses/st371-ane</a>	

- **Course Objective.** The goal is to provide undergraduate students in the Life Sciences with an introduction to modern statistical practice. An understanding of the concepts will be stressed along with applications. Mathematical complexity will be kept to a minimum and analysis of data will receive substantial attention. The development of the ability to interpret results and to evaluate critically the design and methods used will be of most importance.
- **Computing.** We will make use of the software R. R is an open source implementation of the S language and has excellent graphics. It is free and available on all platforms (Windows, Mac and linux). This tool is growing in importance in Biology. There is no assumption in this course of prior experience with R, with the S language, or with any other particular software. All information you need to use R will be provided to you. Most homework assignments will require the use of R.
- **Discussion Sections.** Attendance in discussion sections is strongly advised. One discussion will be held in a computing lab, on the week of February 6-10. More information (where, when, etc.) will be provided on the course web page.
- **Homework.** There will be weekly homework assignments. Doing homework on a regular basis is the best way to learn. Much of your learning will take place while working the problems. Homework has 2 aspects: It is The way to make yours all what you read and listen to, and it will provide you with feedback on your work. Homework will be posted on the course's web page on Thursdays and returned in lecture the following Thursday. Late homework will be penalized except under extenuating circumstances and if prior arrangements have been made with me. Your homework solutions should be well organized and neat. This way, you will demonstrate your ability to communicate your results. If homework assignment is hard to get through, because of organization or hand-writing, there will be a penalty.
- **Grading.** There will be two midterm exams and a final exam. Exams will cover lecture materials, handouts, homework and readings in the text. One sheet of notes will be allowed for the first midterm, while two sheets of notes will be allowed for the second midterm and the final exam. The second midterm and the final exam will also be open

book. Midterm exams will be on Tuesday **Feb. 21** and Tuesday **April 11**, both during the regular class time. The final exam will be Wednesday **May 10** at 2:45pm. Each midterm will count 20% of the course grade, the homework will count 20% and the final 40%. Final letter grades will depend on final scores. I will not give letter grades for midterm exams. Optional projects may also enter the grading system (see separate handout), unless it is taken for honors.

- **Honors.** Students taking the course for honors will complete a project, as described in the separate handout (optional project). In a project, students find their own study, obtain and analyze their own data, and write up their results. If you are involved in a research experience in a lab, the project could be tied together with this experience. Your project could also be tied together with work in another class. Expect that the work involved with a project may be substantial. If you are willing to participate in a project, I will ask you to sign up for a project no later than Tuesday **Feb 21** and write a proposal (typically 2 to 4 pages) no later than Friday **March 31<sup>st</sup>**. I will expect to have contact with you while you are developing your project to ensure that it is of the correct scope and I will be happy to provide feedback at any point in the process. The due date for the project write-up will be Friday **April 28**.
- **Academic honesty.** You are encouraged to talk to other students, your teaching assistant or me about your homework. I am convinced it is very beneficial to solve problems with other students, share and discuss ideas. However, you may not present other people's work as your own. If you work with other students solving problems, you still have to write up your own solution independently. You must work independently during exams. You may not share calculators or pass notes during exams.
- **Schedule.**

Tue. 1/17 and Th. 1/19	Introduction	Chapter 2
Th. 1/19 to Th. 1/26	Exploratory Data Analysis	Chapter 2
Th. 1/26 to Tue. 1/31	Probability and Random Variables	Chapter 3
Th. 2/2	Binomial distribution	Chapter 3
Tue. 2/7	Normal Distribution	Chapter 4
Th. 2/9 and Tue. 2/14	Sampling Distributions	Chapter 5
Tue. 2/21	Midterm	Chapters 2 to 5
Th. 2/16, 2/23 and Tue. 2/28	One-sample estimation	Chapter 6
Tue. 2/28 to Tue. 3/9	Two-sample comparison	Chapter 7
Tue. 3/21	Basic ideas of experimental design	Chapter 8
Th. 3/23 and Tue. 3/28	Paired samples	Chapter 9
Th. 3/30 and Tue. 4/4	Categorical Data	Chapter 10
Tue. 4/11	Midterm	Chapters 6 to 10
Th. 4/6, 4/13 and Tue. 4/18	Analysis of variance	Chapter 11
Th. 4/20 to Th. 4/27	Regression and correlation	Chapter 12
Tue. 5/2 and Th. 5/4	Review	Chapters 2–13
Sun. 5/10	Final exam	Chapters 2–13