

STA 2171-02 *Statistics for Biology*
Spring 2006

1. Course Information:

Class meeting place: OSB 108
Class meeting time: M W 12:20pm – 1:10pm, 1:25pm – 2:15pm
Class web site: <http://stat.fsu.edu/~somesh/sta2171>

2. Instructor: Dr. Somesh Chattopadhyay

Phone: 644-9855
E-mail: somesh@stat.fsu.edu
Office: 106B OSB
Office hours: M W 2:25pm – 3:25pm (106B OSB)
or by appointment.
Mailbox location: 214 OSB (accessible during 8:00am-5:00pm on working days only)

3. Grader: Evgenia Rubinshtein

Phone: 644-1372
E-mail: rubin@stat.fsu.edu
Office Hours: Tue 12:00 noon - 1:00pm (103 OSB)
Thur 1:00pm - 2:00pm (103 OSB)
or by appointment.

4. Prerequisites: MAC 2311 (Calculus I).

5. Course Material:

- **Textbook:** *Statistics for the Life Sciences*, third edition, by Samuels and Witmer (Publisher: Prentice Hall). Please bring your textbook to the class as we will solve problems from the textbook.
- **Calculator:** You will need to have a scientific calculator with the following operations: addition, subtraction, multiplication, division, raising to a power, logarithm, exponential, factorial and preferably combination or binomial coefficient (nC_r or $\binom{n}{r}$). You do not need a graphing calculator or one with statistical operations, but if you have one that is fine. However, if you use a calculator's statistical operations to find the answer of a question on the homework or test, still you will have to show all steps of the calculation like you would do if you had a calculator without statistical operations. Please bring your calculator to the class and to the tests.
- **Software:** We will use Minitab to do the data analysis. Minitab is available in the computer labs in Strozier, Carothers, and the Union. The student version may be obtained from <http://www.e-academy.com/minitab> for \$29.99 for five months, \$49.99 for 12 months, or \$99.99 forever. A trial copy may be downloaded for 30 days of use.
- **Class web sites:** <http://stat.fsu.edu/~somesh/sta2171>
The class web site will have important information about the course. I will initially put all the resources on the class web site. Most of the materials will be moved to Blackboard class site after the drop/add deadline, but this site will still continue to list the helpful resources. Please use it in conjunction with the Blackboard class web site.
- **Blackboard class web site:** To access the blackboard site go to <http://campus.fsu.edu/> and login using your ACNS (garnet or mailer) username and password. After the drop/add deadline, I will post all resources on this site. Also the grades will be posted on that site and you can access it. Also announcements may be posted there. I will encourage you to frequently check that web site.

6. **Objective:** In this course we will learn the basic statistical concepts and tools that are needed to perform statistical analysis for biological data.

7. **Topics:**

- Descriptive Statistics
- Probability
- Discrete and Continuous Probability Distributions
- Sampling Distributions
- Estimation
- Tests of Hypotheses
- Analysis of Categorical Data
- Correlation and Linear Regression

8. **Grading:** homeworks (20%), two midterm exams (each 20%), a final exam (30%) and a project (10%). There will be 0.4% extra credit for minute papers about which I will discuss later in the syllabus. *There is no curving in this class.* The following scheme will be used to convert the percentage points to letter grades.

		93 or more	A	90 - less than 93	A-
87 - less than 90	B+	83 - less than 87	B	80 - less than 83	B-
77 - less than 80	C+	73 - less than 77	C	70 - less than 73	C-
67 - less than 70	D+	63 - less than 67	D	60 - less than 63	D-
less than 60	F				

9. **Teaching Philosophy:** In each topic or subtopic I will first give the motivation through some examples. Then I will go over the fundamental ideas and the methods and formulas in that topic or subtopic and give some more examples. The problem solving skills are very important, but grasping the concepts is more important as without them the problems cannot be solved. Also, the knowledge in statistics is cumulative. So, often I will refer to the topics that we will already have covered.
10. **Recommendations for Success in the Course:** Success in a course comes from proper learning of materials in the course and being able to apply the knowledge during various modes of testing procedure. In a broader sense, successful learning occurs when one is able to learn the material, retain the knowledge and apply it in his or her future life.

In addition to fulfilling the requirements of homeworks, project, and exams, the following recommendations listed below will help you succeed in the course and get the most out of this course that will be useful in future.

- In the beginning of the semester, review the materials covered in the prerequisite course.
- Be attentive in the class and read the materials before the next class. That is, come to the class prepared.
- Participate in the class. It is extremely important because in this way you will assimilate the knowledge most. Always participate in the individual or group exercises in the class. Try to answer any questions that I ask in the class and ask me any questions that you have about the course materials. If you do not follow something, please ask me to explain it.
- If you cannot see the board or the screen or cannot read the materials written or projected on it or if you cannot hear or understand me, please let me know. I will be happy to try to make it clear for you.

11. **Course Policies**

- **Classroom policies:** The classroom environment is an important factor for effective learning. In order to not distract or cause interruption in the attention of other students please follow the following classroom policies. The first one of these is the university policy.

- Remember that **no food or drinks** are allowed in the classroom.
- Turn off all audible alarms (cell phones, pagers, calculators, watches *etc.*)
- Do not use cell phones in the class.
- Come to the class on time. Opening and closing the classroom door in the middle of a class cause distraction to the students and the teacher.
- Do not talk to other students without teacher's permission when the teacher is teaching. More than one conversation creates noise and makes it difficult for the students to pay attention to what the teacher is teaching.
- **Homeworks:** The homework problems and due dates will be posted on the web site and will be notified to you in the class or by e-mail. The solutions must be handed to me in the class or put in my mailbox before 5:00pm on the due date. No late homeworks will be accepted for any reason other than medical and family emergencies. If you have any medical or family emergencies, you should let the instructor know about it as soon as possible and you must write a letter to the instructor explaining the reasons along with the documents to support your case as soon as possible. Depending on the situation, either you may get an extension with the permission of the instructor, or that particular homework will not be counted for your homework grade. In any situation, even if you talk to me or e-mail me and I agree either verbally or by e-mail to give an extension or to not count a particular homework for grades, still you **must** give me the signed hard copy of the letter with the supporting documents. The lowest homework grade will be dropped. Please write detailed answers to the homework problems. Homework solutions will be posted on the Blackboard class website.
- **Exams:** There will be two midterm exams and one final exam. The exams are closed book and closed notes, but you may use a 8.5" × 11" formula sheet. The formula sheet must be prepared by you and must be submitted with the exam. You may use a calculator during the exams for arithmetic calculations. The date for the final is set by the Registrar's office and cannot be changed.
Midterm 1: Monday, February 13 in class (tentative)
Midterm 2: Monday, March 27 in class (tentative)
Final: Thursday, April 27, 3:00pm - 5:00pm
 No student is exempt from any exams. If you have a foreseeable situation that prevents you from taking the exam, you must talk to me and obtain permission in advance. In case of unforeseeable emergency, for which you are unable to take the exam, you should contact me as soon as possible.
- **Collecting returned homework/exam:** It is the student's responsibility to collect his or her homeworks and tests whenever they are returned and to check grades on homeworks and tests on the Blackboard class page. If you notice any mistake in recording grades on the Blackboard page, please inform the instructor or the grader about it as soon as possible.
- **Homework/exam regrade:** You have one week to request a regrade of a homework or exam from the date on which the graded homework/exam is available to the students of the class. Submit a written request detailing the nature of the grading error to the grader or instructor along with the relevant homework or exam.
- **Attendance:** You are strongly encouraged to attend all classes. The class activities will help you assimilate the lessons more easily. The classroom gives you an opportunity for active learning. Do not let this opportunity slip away. Also there will be some discussions in the class that you will not find in the textbook.
- **Minute paper:** A minute paper is a brief response by a student at the end of a class period to a set of questions about the class period. The main reason for using minute papers is to form a team with students with the objective of systematically improving the quality of the course while it is being taught. At the end of each class I will give the minute papers to about 8% of the students randomly selected from the class in such a way that each student is chosen two times in the whole semester. I will address the issues from the minute papers in the following class. For each minute paper you will be given an extra credit of 0.2% points

totaling to a maximum possible 0.4% extra credit.

- **Contacting the instructor or grader outside the class:** You are strongly encouraged to come to the instructor or grader during their office hours. If your schedule conflicts with the office hours, you may make an appointment. Please do not ask the instructor or grader to explain the answer of a problem or some topic by e-mail. Please try to ask whatever questions you have in the class or during the office hours.

When you send e-mails remember the following:

- Always e-mail from your FSU accounts. The e-mails from non-FSU accounts may not reach me due to filters.
- Always write your full name at the end of each e-mail message you send.
- Always write *STA 2171-02* at the beginning of the subject line.

- **Academic Honor System:** Violation of the academic honor system of the Florida State University will not be tolerated for this class. Please read the “Academic Honor System” in its entirety from FSU General Bulletin and FSU Student Handbook and ask the instructor to clarify any of its expectations that you do not understand.

Academic Honor Code: *“The Academic Honor System of Florida State University is based on the premise that each student has the responsibility*

- 1. to uphold the highest standards of academic integrity in the student’s own work,*
- 2. to refuse to tolerate violations of academic integrity in the University community, and*
- 3. to foster a high sense of integrity and social responsibility on the part of the University community.*

- **Students with Disabilities:** Students with disabilities needing academic accommodations should:

1. Register with and provide documentation to the Student Disability Resource Center (SDRC);
2. Bring a letter to the instructor from the SDRC indicating you need academic accommodations. This should be done within the first week of class.

For more information about services available to FSU students with disabilities, contact the

Student Disability Resource Center
97 Woodward Ave. South
108 Student Services Bldg.
Florida State University
Tallahassee, FL 32306-4167
(850) 644-9566 (Voice)
(850) 644-8504 (TDD)
sdrc@admin.fsu.edu
<http://www.fsu.edu/~staffair/dean/StudentDisability/>

12. **Syllabus Change Policy:** This syllabus is a guide for the course and is subject to change without advanced notice.

Revised January 9, 2006