

# STA 4202/5206 *Analysis of Variance and Design of Experiments* Spring 2006

## 1. Course Information:

Class meeting place: 110 Oceanography and Statistics Building (OSB)  
Class meeting time: Mon Wed 3:35pm – 4:50pm  
Class web site: <http://stat.fsu.edu/~somesesh/sta4202>

## 2. Instructor: Dr. Somesh Chattopadhyay

Phone: 644-9855  
E-mail: [somesesh@stat.fsu.edu](mailto:somesesh@stat.fsu.edu)  
Office: 106B OSB  
Office hours: Mon Wed 2:25pm – 3:25pm  
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](mailto:rubin@stat.fsu.edu)  
Office: The grader will hold office hours in **103 OSB**  
Office Hours: Tue 12:00 noon – 1:00pm  
Thur 1:00pm – 2:00pm  
or by appointment.

## 4. Prerequisites: One of STA 2122, STA 2171, STA 3032, STA 4322, STA 5126, and STA 5354.

## 5. Course Material:

- **Textbook:** *Design and Analysis of Experiments*, sixth edition, by Douglas Montgomery (Publisher: Wiley)
- **Calculator:** You will need to have a scientific calculator with the following operations: addition, subtraction, multiplication, division, raising to a power, logarithm, exponential, and factorial. 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 Union. A trial copy may be downloaded from <http://www.e-academy.com/minitab> for 30 days of use.
- **Class web sites:** <http://stat.fsu.edu/~somesesh/sta4202>  
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 material 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 course materials and grades on that site. 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 of designing the scientific experiments and making statistical analysis of the data for those designs.

## 7. Topics:

- Elements of a Design of Experiment
- Completely Randomized Design
- Multiple Comparisons

- Randomized Block Design
- Latin Square Design
- Factorial Design
- Blocking and Confounding in Factorial Design
- Repeated Measures Design
- Nested and Split-Plot Design
- Random and Mixed Effect Models
- Analysis of Covariance

8. **Grading:** Homework and data analysis assignments (40%), one midterm exam (25%), and a final exam (35%). There will be 0.4% extra credit for minute papers which will be discussed 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. **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 and apply it in his or her future life.

In addition to fulfilling the requirements of homeworks, project, exams and attendance, 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 effectively. 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.

#### 10. 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 instructor's permission when the instructor is teaching. More than one conversation creates noise and makes it difficult for the students to pay attention to what the teacher is teaching.

- **Homework and Data Analysis Assignments:** Data Analysis and homework assignments and their 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 on the due date. No late homeworks and data analysis assignments will be accepted for any reason other than medical or 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 or data analysis assignment 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.
- **Exams:** There will be one midterm exam 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 but you must show all your work on the paper. The date for the final is set by the Registrar's office and cannot be changed.  
**Midterm:** Monday, February 27 in class (tentative)  
**Final:** Wednesday, April 26, 12:30pm – 2:30pm.  
 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 grader about it as soon as possible.
- **Homework/exam regrades:** 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 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 10% 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 can make an appointment with me or the grader. Please do not ask me to explain the answer of a problem or explain 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 the instructor due to filters.
  - Always write your full name at the end of each e-mail message you send.

– Always write *STA 4202* or *STA 5206*, whatever is relevant for you, 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)  
sdr@admin.fsu.edu  
<http://www.fsu.edu/~staffair/dean/StudentDisability/>

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

Revised January 9, 2006