STAT 200
Basic Statistical Practice
On-Line and Video Course, Summer 2003

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Web page on WebCT or
http://www.udel.edu/FREC/ilvento/ST200OL/

Office Hours: The Instructor can be contacted directly by voice mail. I encourage you to ask questions via e-mail for the quickest response.

Required Text: Statistics, 8th Edition
McClave and Sincich

or

Statistics, 9th Edition
McClave and Sincich

COURSE DESCRIPTION: Statistics are a important part of both physical and social science research. They enable us to examine and test important research questions concerning individual variables and relationships among a set of variables. The focus of this course is on understanding the basics of statistics. I would like you to gain an appreciation for how descriptive and inferential statistics are used in everyday life and in research; how to analyze a set of data; and how to critique the use of statistics by others.

STAT 200 is designed to give the students an appreciation and understanding of the use of descriptive and inferential statistics. This course assumes that the students have not had any prior exposure to statistics. This course will be very much a hands on course. We are going to get down and dirty with the data. I firmly believe in looking at univariate statistics, graphing and plotting data, and in students interpreting the results. I will encourage the use of Microsoft Excel for calculations, but I will also require some hand calculations (on small data sets). I will also introduce other software packages such as SAS.

COURSE OBJECTIVES:
1. Understand the use of statistics in analyzing data
2. Differentiate the descriptive versus inferential nature of statistics
3. Feel comfortable in taking a set of data and understanding how it might be described and analyzed using various statistical techniques
4. Gain an appreciation of the use of statistics in the research process
5. Have the ability to critical look at statistical analysis and objectively assess the validity of the analysis

College of Agriculture and Natural Resources
**COURSE WEB PAGE:** A web page with the syllabus, Power Point files, assignments, handouts, an anonymous suggestion box, and other course material can be found at:  
http://www.udel.edu/FREC/ilvento/ST200OL/

I will put materials on the web page as they become available and immediately prior to their use in the course. Power Point files with lecture notes will be available in PDF formats (you must use Adobe Reader). The Anonymous Suggestion Box on the web site will allow you to give me feedback on the course with some assurance of privacy. Please use this in the spirit it is intended. I will post messages and my response on the web page.

**SUPPLEMENTAL MATERIAL:** I recommend that you have access to the following:

- A calculator which has multiple memory registers and the ability to take logs. This calculator need not include statistical functions or graphing and may be as cheap as $15 (you don’t need an expensive calculator). You will need the calculator for exams.
- Access to Microsoft Excel or another spreadsheet program. I do not require Excel or another spreadsheet, but I will demonstrate its use for statistics in class.

**GRADING POLICY:** The course grade will be based on 3 exams and six exercises. The three exams will be worth 30 points each. The exams will be spaced evenly through out the semester and focus on a section of the course. Students will be notified as to the exact time and location of the exams (see below). I will give you advanced notice if the date of an exam will change.

The exams will be a combination of True and False, multiple choice, definitions, and problem solving. The exams will not be cumulative. I will not require gross memorization of formulas for the exams, and will allow a single sheet of notes in the exam.

I do not have traditional homework as part of this course, but I will use six exercises to force you to try to work through problems. The exercises are required and are not extra-credit. The exercises are available on the web site. All you need to do is complete the exercises and mail or fax them to me BEFORE the following dates. If you complete the exercise you will receive 1.5 points toward your final grade for each exercise completed. Students will receive full credit for each exercise, regardless of whether their answers are correct as long as he/she made an honest effort to complete the problems. I will post the answers to each exercise after the due dates listed below r on the web page. The exercises will count for 9 points toward your final grade.

Finally, I will give you one free point toward your grade (out of 100) if you e-mail me in the beginning of class. I want to build an class e-mail list to keep in touch with you. Please e-mail me as soon as possible.
Your final grade will be based on the following:

- 3 exams @ 30 points each   90 pts
- 6 exercises @ 1.5 points each  9 pts
- 1 free point if you e-mail me   1 pt

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100 pts

EXERCISE DUE DATES AND EXAM DATES:

- Exercise 1 June 13 Answer posted June 16
- Exercise 2 June 20 Answer posted June 23
- **Exam I** June 25
- Exercise 3 July 3 Answer posted July 4
- Exercise 4 July 11 Answer posted July 14
- **Exam II** July 16
- Exercise 5 July 21 Answer posted July 22
- Exercise 6 July 28 Answer posted July 28
- **Exam III** July 30

PREREQUISITE SKILLS:  Statistics necessarily require the use of math and the computer. The level of math will not be beyond basic algebra. If you have any concerns about your math skills I suggest you get a review book much like is sold for the SAT test to help you review basic algebra. I will use class time to show you basic approaches to analysis on Excel. If you feel weak in the use of a spreadsheet, there are tutorials and short courses available to you. A spreadsheet is one of the more flexible computer programs for academic, business, and personal use and it is wise to feel proficient in its use.

OTHER POLICIES:

- The in-class notes will be important in the course. I will cover other ideas and concepts than what is found in the book.
- I allow a single sheet of paper, printed on both sides, for each of the exams. I will include any and all statistical tables as part of the exam.
- I expect all students to do their own work. Let’s all follow the rules as outlined in the student handbook (http://www.udel.edu/stuhb/)
- If you have a certifiable disability that may affect your class performance, please inform me privately so that appropriate arrangements can be made.

ONE FINAL NOTE. Statistics often scare students, particularly if they don’t feel confident in their math skills. I personally feel it doesn't have to be that way as long as you commit to working at it. I will provide plenty of in-class examples to help take the mystery out of formulas and such. However, you will have to take good notes, do the assignments, and read the text. I don’t require attendance, but the class lectures will be an important part of the course. I’m committed to working with you to help you learn the material. If you feel in trouble, by all means come and see me or contact me by phone or by e-mail.
IF YOU HAVE ACCESS TO E-MAIL:
Please e-mail me in the beginning of the course and I will build a course list to send out supplemental material to you.

IF YOU DO NOT HAVE ACCESS TO E-MAIL:
Call into my office and leave a contact fax or phone number so that I can get additional or supplemental material to you.
<table>
<thead>
<tr>
<th>Lecture</th>
<th>Topic</th>
<th>Book</th>
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<td>Statistics, Data, Critical Thinking, and Describing Data</td>
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<td>4</td>
<td>Measures of Variability I</td>
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<tr>
<td>5</td>
<td>Measures of Variability II</td>
<td>Chapter 2</td>
<td>DIS2</td>
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<tr>
<td>June 25</td>
<td>EXAM 1 - Overview of statistics, Measures of Central Tendency and Variability</td>
<td>Chapters 1and 2 and in-class notes</td>
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<td>Chapter 3</td>
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<td>Probability - Additive Rule, mutually exclusive events, conditional probability, multiplicative Rule and Independent Events</td>
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<td>Discrete Random Variables - probability distributions and expectation</td>
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<td>Binomial Random Variable</td>
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<td>Chapter 5</td>
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<td>July 16</td>
<td>EXAM 2 - Probability, random variables, normal distribution, and estimators</td>
<td>Chapters 3, 4, and 5 and in-class notes</td>
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<td>Chapter 6</td>
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<td>15</td>
<td>Inferences Based on a Single Sample - Hypothesis Testing II</td>
<td>Chapter 8</td>
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<td>17</td>
<td>Two sample inferences for means/proportions II</td>
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<td>19</td>
<td>Bivariate Regression</td>
<td>Chapter 11</td>
<td>REG</td>
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<td>July 30</td>
<td>EXAM 3 - sampling distributions, inferences on a single sample, confidence intervals, hypothesis testing, inferences on two samples, correlation and Regression</td>
<td>Chapters 7, 8 and 9 and 11 and in-class notes</td>
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