

## SYLLABUS - STAT 301: STATISTICAL ANALYSIS I

Department of Statistics, Eberly College of Science  
The Pennsylvania State University  
Instructor: Mr. Floyd Hummel  
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165 Willard Building  
11:15 - 12:05 MWF  
Spring Semester, 2005

**COURSE DESCRIPTION AND OBJECTIVES:** An introduction to basic concepts of statistics for students in scientific disciplines. The course starts with a brief treatment of probability, random variables, and probability distributions, with emphasis on the binomial and normal distributions. Most of the course will be devoted to the concepts and methods of statistical analysis. Statistical topics include estimation of population characteristics, testing hypotheses, the comparison of groups, and building prediction models. Minitab for Windows will be used, but no prior experience with that program will be assumed.

**COURSE MATERIALS:** Montgomery|Runger|Hubele, *Engineering Statistics* **required**  
Third Edition, Wiley, 2004

Use of a calculator with statistical functions in two variables (x,y) is strongly recommended and may be used on exams. The TI-83 or 83 Plus are good ones.

**GRADING PROCEDURES:** All letter grades will be assigned in accordance with the University's grading policy. Grades will be based on in-class examinations. Any discussion or contention concerning an assigned grade on an examination will be addressed between the student and instructor. See the Policies and Rules for Students, for details on this and other policies.

**ACADEMIC INTEGRITY:** The Eberly College of Science policy on Academic Integrity (cheating on exams, copying another+s homework, etc.) applies to this course. Statements explaining the policy in more detail may be found at <http://www.science.psu.edu/academic/Integrity/Syllabi.htm>, and <http://www.science.psu.edu/academic/Integrity/index.html>.

**EXAMINATIONS AND GRADES:** There will be three in-class examinations and a final, six homework assignments, and some in-class activities including surprise quizzes. No extra points and no make-ups on quizzes, since these are designed to encourage attendance and keeping up with the material. Tentative cutoffs are as follows: A, 92% or better; A-, 90%; B+, 88%; B, 82%; B-, 80%; C+, 77%; C, 70%; D, 60%.

Composition of the total score: In-class exams =3\*20=60%. Final, 25%. Homework, 10%, in-class activities, 5%.

**ATTENDANCE:** Attendance at all examinations is mandatory. Attendance at other classes is strongly encouraged. Students are encouraged to read assigned material and attempt to do problems **\*\*before\*\*** coming to class, so as to gain a better understanding of the class presentation. Class presentations are **not** a substitute for reading the textbook, but are used to give examples and alternative ways of thinking about the material, and to emphasize important essentials. Homework assignments are intended to represent a **minimum** sample of homework a student should do; I strongly recommend doing more problems in addition to the assigned ones.

The University provides special procedures for time conflicts on the final exam. Notify me if in advance if this will be necessary. No make-ups will be provided for exams other than the final. If you need to miss one exam, for reasons beyond your control, let me know as soon as possible **before** the exam, so I can assign the average of your other grades in place of the missing grade. Otherwise, a missing exam counts as a zero. This is not the same as automatically dropping one exam, because I will ask for a doctor's statement or other written evidence in order to average the other grades.

If at any time you have concerns about the course, corrections to my materials or class presentation, suggestions for improvement, or the like, please do not hesitate to let me know. Statistics is a challenging but very useful discipline, and I want you to succeed in this course, and to be able to use statistics in the real world.

DAY	DATE	SECTIONS	DETAILS
MON	1/10	Chapter 1	First day of class
WED	1/12	2-1, 2-2	Use of calculators for statistics
FRI	1/14	2-3, 2-4, 2-6	
MON	1/17	3-1 to 3-3	Plus, conditional probability (Not in the Textbook!)
WED	1/19	3-4	<b>Problem Set 1 (Chapter 2) is DUE</b>
FRI	1/21	3-5.1	
MON	1/24	3-5.1, 3-6.1	
WED	1/26	3-7, 3-8	
FRI	1/28	3-8	
MON	1/31	3-10	Binomial only (ignore Poisson)
WED	2/2	3-11	
FRI	2/4	3-12	
MON	2/7	3-13	<b>Problem Set 2 (Chapter 3) is DUE</b>
WED	2/9	Review for Exam 1	
FRI	2/11	<b>EXAM 1</b>	<b>Covers Chapters 1 through 3</b>
MON	2/14	4-1, 4-2	
WED	2/16	4-3, 4-4	
FRI	2/18	4-4	
MON	2/21	4-5	
WED	2/23	4-6, 4-7	
FRI	2/25	4-10	
MON	2/28	5-1, 5-2	<b>Problem Set 3 (Chapter 4) is DUE</b>
WED	3/2	5-3	
FRI	3/4	Review	SPRING BREAK - NO CLASS - 3/07 - 3/11
MON	3/14	5-4, 5-5	
WED	3/16	5-6, 5-7	<b>Problem Set 4 (Chapter 5) is DUE</b>
FRI	3/18	Review for Exam 2	
MON	3/21	<b>EXAM 2</b>	<b>Tests and confidence Intervals</b>
WED	3/23	5-8.1	
FRI	3/25	5-8.2	
MON	3/28	7-1 to 7-3.1	
WED	3/30	7-3.2, 7-3.3	
FRI	4/1	7-4	Suggestion: Read 7-8 for cultural reasons
MON	4/4	Multiple Comparisons	(Not in the Textbook!)
WED	4/6	More Minitab ANOVA examples	
FRI	4/8	6-1 to 6-2.2	
MON	4/11	6-2.2, 6-2.3	<b>Minitab homework on ANOVA is DUE</b>
WED	4/13	6-2.4, 6-2.5	
FRI	4/15	6-2.6	
MON	4/18	6-3	
WED	4/20	6-4	<b>Minitab homework on regression is DUE</b>
FRI	4/22	Review for Exam 3	
MON	4/25	<b>EXAM 3</b>	<b>Interpretation of Minitab output.</b>
WED	4/27	Review	
FRI	4/29	Review	<b>NOTE:</b> The final exam is comprehensive - it covers the entire course
MON	5/2 - FRI 5/6:	Final exams:	Time and place To Be Announced. - See PSU web site.