

GOVERNORS STATE UNIVERSITY
College of Business and Public Administration

Course Title: STAT 362 (Section A, Reference# 10726)
Statistics for Management II

Session: Winter 1995 (Block 1)

Time: 11:00-12:15 MW

Instructor: Professor David Parmenter

Office: C 3356

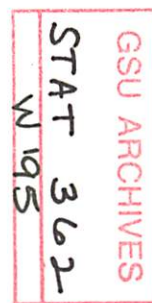
Office Phone: (708) 534-4961

Office Hours: (tentative) 12:30-1:30 MW, 12:30-1:30 TR, and by appointment

Catalog
Description: A continuation of STAT 361. Topics covered include analysis of variance, regression, correlation, time series, indexing, nonparametric statistics, bivariate distributions, and chi-square tests. Students make extensive use of a statistical computer package in the analysis of data and application of statistical tests as they apply in business situations.

Prerequisites: STAT 361

Textbook: Statistics for Business and Economics (5th Ed.) by Anderson, Sweeney and Williams. The Student Workbook is optional.



OVERVIEW:

Including a substantial review of STAT 361, this course will cover most of the standard techniques available for statistical inference. Techniques covered will include confidence intervals and hypothesis testing for both means and proportions, simple and multiple regression, analysis of variance, and Chi-square tests. Students should have successfully completed STAT 361 or the equivalent prior to enrolling in this course.

In theory, as undergraduate students in a business program, you are being trained to be entry level managers. As such you need to know how to interpret data for decision making purposes. The purpose of this class is not as much to turn you into statisticians as it is to turn you into intelligent consumers of statistics.

Most of the class meetings will be held in the assigned classroom. These class meetings will be conducted using a standard lecture format. In order to get the most out of these classes you the student should read the assigned chapter before the lecture and ASK QUESTIONS. Although it

sounds corny, there really is no such thing as a stupid question. If you are confused by a particular topic it's very likely that most of the other students are confused as well.

On several occasions during the trimester class will be held in the computer lab where we will use the statistical computer package MINITAB to solve some of the problems in the second half of the semester which are too complex to do by hand. MINITAB is very easy to use. It was designed to be used by statistics students, not by computer science majors, and thus assumes that you have virtually no computer expertise at all. The last three homework assignments of the trimester and the last two exams will require you to interpret MINITAB output in order to answer a variety of questions.

COMPETENCIES:

After completing this course you should be familiar with the use of the statistical techniques mentioned above. You should be able to determine the appropriate technique for use on a particular problem. You should understand the logic behind each method as well as being able to perform the appropriate calculations. Since many of these calculations are too complex to do by hand, you should have become familiar with the statistical package Minitab.

EVALUATION:

Your grade in this course will be based on the following assignments.

Homework	20%
Midterm 1	20%
Midterm 2	20%
Midterm 3	20%
Final Exam	<u>20%</u>
	100%

Although the final results will be curved if necessary, you should expect a curve which follows the standard 90-80-70-60 format.

HOMEWORK:

Homework problems will be assigned weekly, except for weeks in which there is a test. There is simply no way to learn this subject well without practicing it. Homework problems will be selected carefully so as to test your knowledge of the important concepts and formulas. Since the same person (me) is both selecting the homework problems and writing the test questions, it would suggest that the homework problems and test questions will be similar. Thus homework is doubly important. It counts for a full 20% of your final grade and also provides practice for the tests.

In the second half of the trimester, when the problems become too complex to do by hand, some of the homework will involve the use of the statistical computer package Minitab. Instruction on the use of Minitab will be given at the appropriate time in the trimester.

Your homework must be well organized and legible. Show your work on problems involving complex calculations. Your job when doing the homework is to convince the grader (once again, me) that you know what you are doing. Late homework will be accepted but will be penalized by losing 25% for each class period that it is late.

EXAMS:

There will be three midterm exams, each of which will cover about one third of the course. The third midterm will be given late enough in the trimester so that no new material will be covered between the third midterm and the final exam. The final exam will be cumulative and will be equally weighted towards the entire trimester, i.e. one third of the final will be based on the material covered on the first midterm, one third will be based on material covered on the second midterm, and one third will be based on material covered on the third midterm.

You will be able to replace any one of your midterm scores with the score that you receive on the corresponding portion of the final exam. For instance, if you receive a 62 on the second midterm but score an 87 on that portion of the final, your midterm grade of 62 could be replaced with a score of 87. The midterm grade to be replaced, if any, will be chosen so as to provide you with the greatest benefit.

To help you prepare for the tests there are copies of exams from a previous trimester on reserve in the library (listed under "Parmenter"). The exams given during this trimester should be "fairly similar" to those given previously.

For each exam you will be allowed to use a one-page "cheat sheet." This means that you shouldn't waste any mental energy trying to memorize formulas (save your brain cells for trying to understand the concepts). You may include anything you want to include on your cheat sheet, e.g. formulas, definitions, example problems, prayer, etc. The only rule is that everything put on the sheet must be placed there by you by hand. This means no photocopying. I allow a cheat sheet rather than giving an open book exam because the act of putting the sheet together should force you to organize things in your mind. Most of the students who have taken this class from me would tell you that the effort put into creating a very thorough and well-organized cheat sheet is well rewarded. You will do much better on the exams.

STATISTICS TUTORING:

The Center for Learning Assistance in the Office of Student Development provides tutors free of charge to GSU students. Appointments can be made either by going to room B1201 or by calling 534-4090.

SYLLABUS STATEMENT FOR PERSONS WITH DISABILITIES:

It is the intention of the institution to support full participation of all students, regardless of physical ability level. Therefore, if any student needs consideration of his/her physical abilities in order to complete the course, please notify the instructor as soon as possible.

SCHEDULE:

<u>Date</u>	<u>Topic</u>	<u>Chapters</u>	<u>Sections to ignore</u>
1/15	Holiday - University closed		
1/17	Introduction		
1/22	Review	1,2,3,4	
1/24	Binomial distribution	5	5.5 and 5.6
1/29	Normal distribution	6	6.3 and approx.
1/31	Normal distribution	6	to binomial
2/5	Sampling distributions	7	
2/7	Confidence intervals	8	
2/12	Holiday - University closed		
2/14	Confidence intervals	8	
2/19	Confidence intervals	8	
2/21	Midterm 1	6,7,8	
2/26	Hypothesis testing	9	9.8 and 9.9
2/28	Hypothesis testing	9	
3/4	Hypothesis testing	9	
3/6	Hypothesis testing	9	
3/11	Tests of independence	12	12.3
3/13	Analysis of variance	13	13.3 to 13.7
3/18	Introduction to Minitab		
3/20	Midterm 2	9,12,13	
3/25	Simple linear regression	14	14.7 and 14.8
3/27	Simple linear regression	14	
4/1	Multiple regression	15	15.7
4/3	Multiple regression	15	
4/8	Multiple regression	15	
4/10	Multiple regression	16	16.5 and 16.6
4/15	Multiple regression	16	
4/17	Midterm 3	14,15,16	
4/22	Review		
4/24	Final exam	Cumulative	

NOTE: THE WITHDRAWAL DEADLINE IS MONDAY MARCH 25th.

HOMWORK LIST:

Homework is due on Wednesday. Late homework will be accepted but will lose 25% for each full class period that it is late. If necessary you can mail homework to me at: Dr. David Parmenter, College of Business, Governors State University, University Park, IL, 60466.

Answers to the even numbered questions can be found in Appendix E. Answers to the self-test exercises can be found in Appendix F.

<u>Due date</u>	<u>Chapter</u>	<u>Problems</u>	<u>Special instructions</u>
1/31	5	35, 67, 72	Pay close attention to 72d.
2/7	6	19, 47, 53	
2/14	7	59, 73	
2/21	8	52, 58, 62, 68, 70	
2/28		None	
3/6	9	1a, 3a, 7, 15, 16	On #7 give the <u>real world</u> consequences of making a Type I or Type II error.
3/13	9	27, 35, 51	
3/20	12,13	Ch. 12: # 16 Ch. 13: # 56	Use Minitab on #56. Specify the hypotheses, the decision rule, and how the means differ, if at all.
3/27		None	
4/3	14	9,10,26,28,35,61a	Do #9 and 28 by hand. Use Minitab on #10, 26, 35 and 61a. Specify the hypotheses, the decision rule and the conclusion when relevant.
4/10	15	7, 22, 28a , 33, 34	Use Minitab on all problems. Specify hypotheses, etc. when relevant. Pay close attention to 7b and 34c.
4/17	16	1, 15bc	Use Minitab on all problems. Specify hypotheses, etc. when relevant.
4/24		None	