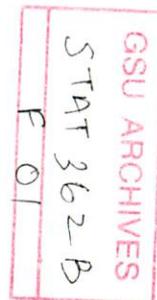## GOVERNORS STATE UNIVERSITY
College of Business and Public Administration

COURSE NO.: STAT362 B   Thursday, 7:30 - 10:20 pm, G.S.U. Main Campus, Room D -2440

COURSE TITLE: Statistics for Management II

SESSION: Fall 2001

INSTRUCTOR: Prof. Albert Riley, AICP

PHONE NO.: (773)650-0306   **FAX:**(773)481-3571

E-MAIL: alriley@mindspring.com   **WEBSITE:** http//:home.mindspring.com~alriley

OFFICE HOURS: By Appointment

CREDIT HOURS: 3

CATALOG DESCRIPTION: A continuation of STAT361. Topics covered include analysis of variance, regression, correlation, time series, indexing, non-parametric statistics, bivariate distributions, and chi-square tests. Students make extensive use of a statistical computer package in the analysis of data and applications of statistical tests as they apply in business situations.

PREREQUISITES: STAT 361

TEXTBOOKS: Statistics for Business and Economics, 8th ed. David R. Anderson, Dennis J. Sweeney and Thomas A. Williams. South-Western College Publishing, 2002. ISBN# 0-324-06672-4 (hardcover) ~~REQUIRED~~
          Statistics for Business and Economics (WORKBOOK), 8th ed. David R. Anderson, Dennis J. Sweeney and Thomas A. Williams. Prepared by Mohammad Ahmadi. South-Western College Publishing, 2002. ISBN# 0-324-06898-7 (paperback) ~~OPTIONAL, but recommended~~

RATIONALE: The rationale for this course is to provide upper level undergraduates and graduate students with a working knowledge of the quantitative techniques necessary to collect, present, and statistically analyze data; common to a second semester course in statistics. Understanding of these techniques will provide the student the knowledge necessary to efficiently apply them in the business, industrial, or governmental environment.

INSTRUCTIONAL MODALITY(IES): The mode of instruction will include lecture, topical discussion, in-class examination of case studies, and the use of a PC based statistical computer program for analysis and graphic presentation.

EXPECTED STUDENT OUTCOMES:
1. The student will become familiar with the history of statistical analysis, and important individuals in the field.

2. Understanding the concepts of statistical inference inclusive of hypothesis testing, p-values, type I and II errors, inferences about the differences between the means of two populations, and the variances of two populations.

3. Knowledge of multivariate techniques; analysis of variance, chi-square, simple correlation, regression analysis and diagnostics, familiarity with other techniques under the rubric of general linear models.

4. Knowledge of advanced analytical techniques such as regression model building and fitting equations to data, non-parametric data analysis, and forecasting models.

5. Working knowledge of PC based statistical software, primarily Minitab[tm]. Data analysis modules in some of the popular spreadsheets, e.g., Excel[tm] and Quattro Pro[tm] will be discussed.

TOPICAL OUTLINE/COURSE CONTENT:

8/30/01	1	Statistical Inference about Means and Proportions (Chapter 10)
9/6/01	2	Inferences about Population Variances (Chapter 11)
9/13/01	3	Goodness of Fit and Independence (Chapter 12)
9/20/01	4	**TEST #1**
10/4/01	5	Analysis of Variance and Experimental Design (Chapter 13)
10/11/01	6	Analysis of Variance and Experimental Design (continued) (Chapter 13)
10/18/01	7	Simple Linear Regression (Chapter 14)
10/25/01	8	Simple Linear Regression (continued) (Chapter 14)
11/1/01	9	**TEST #2**

11/8/01	10	Multiple Regression
		(Chapter 15)
11/15/01	11	Regression Analysis: Model Building
		(Chapter 16)
11/22/01	12	**Thanksgiving Holiday - No Class**
11/29/01	13	Nonparametric Methods
		(Chapter 19)
12/6/01	14	****TEST#3****

EVALUATION OF LEARNING OUTCOMES:

Weights:
Homework - 25%
Case Studies - 10%
Tests (20% each) - 60%
Papers - 5%

Homework:
Homework is due the class session after it is assigned. Late homework is **NOT** accepted. Prior notice of a medical situation or similar critical extenuating circumstance will be considered on a case by case basis. Homework must be **LEGIBLE**, complete, and easily identified, (e.g., student, chapter, problem, etc.) or credit cannot be given. In situations where collaboration took place (encouraged) please be sure that the result was your own, and not merely copied. **ALL** appropriate calculations must be shown to receive credit for the problem.

Tests:
As listed, the three tests that will be given during the term cover roughly one-third of the material to be presented during the semester. There is no "cumulative" examination, or "final". However, the knowledge, skills, and abilities learned build upon each other as one proceeds through the course. The test material will be problems and definitions from the textbook, similar to that of the homework assigned. Unless otherwise informed, the entire class session will be devoted to the exam.

Papers:
Two biographical papers on assigned statisticians are required. **The papers must be at least one and one half pages long, and must use at least two sources**. It must follow acceptable writing style formats: MLA, Turabian, etc. It is encouraged that students make copies of the papers to share with other students in order to learn about the work of a number of these historical figures. Verbatim copies of Internet information on a subject will **NOT** be accepted.

GENERAL EDUCATION ISSUES: It has often been said that numbers are the fundamental language of business. Taking this postulation to its' next logical step, one could then say that the ability to effectively collect, interpret, and analyze numbers would mark ones' ability to effectively communicate in the worldwide language of business. Such is the nature of this course. Part of understanding a body of work lies in the understanding of its' history. Though a

cursory evaluation, the written biographies serve to acquaint the student with some of "worldly philosophers" in the field of statistics. Lectures serve to introduce and provide in depth explanation of the subject matter, such that textbook study provides reinforcement and assistance to the overall learning process. Topical discussions and class participation are critical in fully understanding the practical applications of many of the statistical techniques, and/or analyzing how the student may have seen them used in "real world" situations. This can also be said for the examination and analysis of the many pertinent case study scenarios elucidated in the textbook. Finally, practical "hands on" experience with computer applications to solve problems serves to provide knowledge of an additional medium to quickly and efficiently analyze data that is being used in the classroom, and in the workplace.

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.

HOMEWORK ASSIGNMENTS
STAT 362, SECTION B
A. RILEY, FALL 2001

The following lists the homework assignments and computer case studies required for the term. The homework is **due the class after the material is presented**, unless other instructions are given. When appropriate, it will be expected that **all work will be shown** when completing a problem. Late homework will not be accepted, unless there is an extenuating circumstance which prevented its' completion. Many of the problems will involve the use of the computer. The <u>Minitab</u> and <u>Excel</u> programs will facilitate the completion of these problems. Working in groups could be of benefit for some of these problems and exercises.

Though it would be advantageous and highly encouraged to complete during the chapter in which they appear, **case studies only** involving computer use will be accepted **two weeks after assignment.**

CHAPTER	CLASS SESSION	PROBLEMS		CASE STUDIES
10	1	1,11,18,23		
11	2	1,6,18,19		
12	3	1,6,23,35		**BIPARTISAN p479 (7th ed.) p473 (8th ed)**
test #1	4			
13	5	2,16,19	*Bipartisan due*	
13	6	40,43,45		**CASE #2**
14	7	2,11,18		
14	8	23,39,51	*Chap. 13 Case 2 due*	**CASE #1**
test #2	9			
15	10	9,15, 21,34,40	*Chap 14 Case 1 due*	**CASE#1**
16	11	4,18,22,35		
19	13	1,17,25,38	*Chap. 15 Case 1 due*	
test #3	14			