PEPPERDINE UNIVERSITY
THE GEORGE L. GRAZIADIO
SCHOOL OF BUSINESS AND MANAGEMENT

ALI AKBARI
MBAM 593.13
APPLIED DATA ANALYSIS
FALL 2003, Session B
WEDNESDAY
8:00 AM – 12:00 PM
MALIBU CAMPUS

SYLLABUS
Applied Data Analysis
MBAM 593.13
Fall 2003

Professor’s Name: Dr. Ali Akbari
Day/Class time: Wednesday 8:00 AM-12:00 PM
Tel.#: (805) 493-3379
E-mail address: aakbari@pepperdine.edu (best way to reach me)
Office Hours: To Be Arranged

Course Description
This course covers the basic techniques of applied statistical analysis, beginning with an exploration of the meaning and types of data. Methods of describing both individual variables and the relationships between variables are covered. Sampling and probability are introduced as a basis for understanding how to infer results from samples to the populations from which they are drawn. Inferential techniques covered include estimation, confidence intervals, hypothesis testing, and regression analysis.

About This Course
H.G. Wells says, "Statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write". That "one-day" is today. In the last few decades, the expansion of statistical ideas and statistical methods has made itself felt in almost every phase of human activity. In business, it has brought about drastic changes in marketing, in the efficient use of materials, in production, in management and in various phases of business research. Here statistical data and statistical techniques have become a vital factor in the decisions, analysis, and forecasts of the modern businessperson.

In these days of electronic communications which have been made possible by technical advances in Internet and business machines, the ability to understand and use information intelligently has become increasingly important in all fields of business enterprise. Search engines have changed the way we find online business and economic data. Of course, with all these advancements the data has become much more accessible. The problem, however, is an accurate evaluation of the already existing data. How valid they are? Who has collected the data and how did they do it? What was the purpose of the data collection? What are the possible sources of errors? Did they use a sample or did they conduct a census? How did they select the sample? What was the sample size? What sampling method did they use and why? What was the wording of the questions? How many questions were in their questionnaire? What was the order of the questions? What method of data collection and data entry did they use and why? These are some of the issues that we will be addressing in this course. It is important to know how to use the available data properly; it is also essential to know how to collect the proper information for making decisions if such information is not available.

Problems concerned with the collection, analysis, and interpretation of data lie in the domain of the field of statistics; therefore, it is essential for everyone making business decisions on the basis of data to possess a clear understanding of that field.
Course Objectives

Quantitative Methods 593 aims to introduce statistical concepts and methods that are frequently used in economic analysis and managerial decision-making. The course is designed to help you acquire a good intuitive grasp of statistics—what it is, how and when to apply statistical techniques to managerial situations, and how to interpret results. Descriptive and inductive statistics will be discussed in detail.

The course also introduces the use of the computer as a tool in statistical analysis. You will learn how to describe your data to efficient statistical software and how to request a data analysis. You will learn how to use Microsoft Excel for statistical analysis. If you have your own laptop, you will use Excel for ALL exercises, cases and tests. So there is no need to buy a new calculator for this course. We will use Excel for computer-assisted analyses in and out of class. Excel is available in the computer labs; you do not need to purchase it. I’ve selected a text that emphasizes the use of Excel for statistical analyses. The text includes Excel instructions so no additional Excel text is necessary.

This course covers a lot of material and gets progressively more difficult, with the later material requiring mastery of earlier topics. As a result, the best strategy for doing well in the course is to complete each week’s assignments on time, and get help from me quickly if you hit a trouble spot.

Texts and Course Materials


2. Study guide to accompany the text.

Alternative References

The following are recommended as useful references and sources of further reading:


Grading and Evaluation:

There is an exam roughly every other week of class. Each student will be given a grade reflecting the professor's evaluation of the student's mastery of the course material. The combined points or the Total Score on the following exercises will determine the letter grade in the class:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Quizzes</td>
<td>15%</td>
</tr>
<tr>
<td>(b) Computer Projects</td>
<td>25%</td>
</tr>
<tr>
<td>(c) Midterm Exam</td>
<td>25%</td>
</tr>
<tr>
<td>(d) Final Exam</td>
<td>30%</td>
</tr>
<tr>
<td>(d) Class Participation/Extra Credit</td>
<td>5%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

A relative frequency distribution table will be used to determine your letter grade in the class. The following scale will be used:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Letter grade</th>
<th>Point Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>95 – 100%</td>
<td>A</td>
<td>4.0</td>
</tr>
<tr>
<td>90 – 94.9</td>
<td>A-</td>
<td>3.7</td>
</tr>
<tr>
<td>87 – 89.9</td>
<td>B+</td>
<td>3.3</td>
</tr>
<tr>
<td>83 – 86.9</td>
<td>B</td>
<td>3.0</td>
</tr>
<tr>
<td>80 – 82.9</td>
<td>B-</td>
<td>2.7</td>
</tr>
<tr>
<td>77 – 79.9</td>
<td>C+</td>
<td>2.3</td>
</tr>
<tr>
<td>73 – 76.9</td>
<td>C</td>
<td>2.0</td>
</tr>
<tr>
<td>70 – 72.9</td>
<td>C-</td>
<td>1.7</td>
</tr>
<tr>
<td>67 – 69.9</td>
<td>D+</td>
<td>1.3</td>
</tr>
<tr>
<td>63 – 66.9</td>
<td>D</td>
<td>1.0</td>
</tr>
<tr>
<td>60 – 62.9</td>
<td>D-</td>
<td>.7</td>
</tr>
</tbody>
</table>

Class Sessions:

Course content and tests will come from both the text and the lecture. In addition to coverage of the concepts developed in the text, class sessions will be devoted to probing, extending, and applying the text material and case studies. It shall be assumed that students have read and are prepared to discuss the text assignments before coming to class, as well as any appropriate case or handout materials. Each quiz will be designed to take 30 minutes to complete and will be worth 35 points. The format will generally be a mix between short answer, essay, and multiple choices.

Class Discussion:

Each student is expected to contribute to class discussion. To a substantial extent, the benefit students derive from the assignments is related to their willingness to expose their viewpoint to the critical judgment of the class. Do not be reluctant to voice your opinion.
Class Participation:

Attendance and participation in class is expected and is a component of the final grade. The assigned problems and cases are intended to facilitate learning the concepts and techniques of statistical analysis. Homework will be assigned to assist student in learning the material and preparing for the examinations. It is important to remember the more problems a student works, the better he/she should do on the examinations. You are also urged to solve study guide problems or other unassigned problems at the end of each chapter. Students are expected to attend every class. Missing a class will put you at a significant disadvantage for both learning and performance in the class. (If you must miss a class for some reason, recognize that it is your responsibility to get class notes and assignments from a classmate.)

Instructor/Student Interaction:

If at any point during the course you have questions regarding the preparation of cases, exams, or other course-related issues, please do not hesitate to contact the instructor. If scheduled office hours are inconvenient for you, contact me after class to arrange an alternative appointment. I care about your progress in the class, and if you are having difficulty, I would like to meet with you. It is my desire that this class will be a positive experience for you, and I want to help make it one. Please do not hesitate to contact me, either by phone or e-mail, for any reason whatsoever.

Computer Projects:

Computer cases are assigned to facilitate the statistical applications in a real world managerial situation. Using real and relevant data provides value to statistical thinking and methods. There will be a total of three computer projects. The computer cases are presented at the end of chapters 3, 8 and 13 of your textbook. They provide students with the opportunity to analyze a real world data set and prepare managerial reports based on the results of the analysis. By using the real world data, the students will remember statistical methods as those that were used to solve a real world problem instead of members of a list of isolated formulas that they memorized for, and forget shortly after, a test.

Evaluation Policy:

All aspects of the class are "fair game" for the examinations. Class discussions are included as a source. In particular, if the class has difficulty with particular concepts or techniques on an exam, these are likely to be tested again on a later exam. The student is expected to make every reasonable effort to take all the examinations at the scheduled time. Make up examinations will not be allowed under any circumstances. If an examination is missed for an approved reason, the next exam weight will be increased to compensate for the missed grade. Approval for missed examinations will be rare indeed, and only with appropriate written documentation from authoritative source indicating why the student was unable (repeat: Unable) to appear for an examination. Normally, only a doctor's certification of a severe medical problem will suffice. The exams and the final are individual, in-class exams. The exams will be given on paper (rather than on a computer) but may include pages of Excel output that require your interpretation. They
are closed-book exams, but each student may bring two (2) 8.5” x 11” sheets of notes and/or formulas to each of the first two exams, and a total of six (6) sheets to the cumulative final exam. You may use both sides of the page, and your notes can include anything you feel will be helpful to you on the exam including graphs, formulas, and problems from class or the text.

Tip: Avoid trying to cram everything onto these sheets or they will become useless to you. Use them as an opportunity to organize and condense your knowledge and note things you find particularly important or difficult to remember. Any necessary statistical tables from the text will be provided for you. There are no make-up examinations. The only exceptions will be if:

- you get prior approval from me at least 48 hours before the scheduled exam, or
- there is documented evidence of an emergency.

**Awarding of Incompleteness:**
A grade of "INC" will be awarded only if a valid reason for missing the final exam is documented in writing within 48 hours after the final examination is given. The Policy of the university is to be very strict in allowing Incompleteness. Doing poorly in the course is definitely not a sufficient reason for an incomplete.

**Conduct**
"The University expects from all of its students and employees the highest standard of moral and ethical behavior in harmony with its Christian philosophy and purposes. Engaging in or promoting conduct or lifestyles inconsistent with traditional Christian values is not acceptable. The following regulations apply to any person, graduate or undergraduate, who is enrolled as a Pepperdine University student. These rules are not to be interpreted as all-inclusive as to situations in which discipline will be invoked. They are illustrative, and the University reserves the right to take disciplinary action in appropriate circumstances not set out in this catalog. It is understood that each student who enrolls at Pepperdine University will assume the responsibilities involved by adhering to the regulations of the University. Students are expected to respect order, morality, personal honor, and the rights and property of others at all times. Examples of improper conduct for which students are subject to discipline are as follows:

- Dishonesty in any form, including plagiarism, illegal copying of software, and knowingly furnishing false information to the University.
- Forgery, alteration, or misuse of University documents, records, or identification.
- Failure to comply with written or verbal directives of duly authorized University officials who are acting in the performance of assigned duties.
- Interference with the academic or administrative process of the University or any of the approved activities.
- Otherwise unprotected behavior that disrupts the classroom environment.
- Theft or damage to property.
- Violation of civil or criminal codes of local, state, or federal governments.
- Unauthorized use of or entry into University facilities.
- Violation of any stated policies or regulations governing student relationships to the University.
Disciplinary action may involve, but is not limited to, one or a combination of the alternatives listed below:
• Dismissal – separation of the student from the University on a permanent basis.
• Suspension – separation of the student from the University for a specified length of time.
• Probation – status of the student indicating that the relationship with the University is tenuous and that the student’s records will be reviewed periodically to determine suitability to remain enrolled. Specific limitations to and restrictions of the student’s privileges may accompany probation.” GSBM Catalog, pgs. 207-208.

POLICY ON DISABILITIES
Assistance for Students with Disabilities
“Students with disabilities, whether mental or physical, are encouraged to contact the Equal Opportunity Office before the academic year begins or soon after classes are in session. This office will assist each student by providing general information about campus facilities and available resources. The office will assist in providing reasonable accommodation to students with disabilities pursuant to applicable laws. Inquiries should be directed to equal opportunity officer, Dr. Calvin H. Bowers, (310) 456-4208. (Students who wish to file a formal grievance should refer to the “Nondiscrimination Policy,” which is listed in the “Legal Notices” section of this catalog.)” GSBM Catalog, pg. 31.

Tentative Course Schedule:

<table>
<thead>
<tr>
<th>Wednesday</th>
<th>Chapter form: Essentials of Statistics for Business and Economics, 3rd Edition</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/29</td>
<td>Chapter 3-4, Data Mining, Statistics with Excel, Computer Projects, Probability Theory, Bayesian Statistics.</td>
</tr>
<tr>
<td>11/5</td>
<td>Chapter 5,6: Discrete random variables: Expected value, Variance, Binomial and Poisson Probability Distributions, Continuous random variables: Normal Probability Distribution. <strong>Short Quiz (on previous 2 weeks’ material)</strong> PROJECT#1</td>
</tr>
<tr>
<td>11/12</td>
<td><strong>Midterm Exam (on previous 3 weeks’ material)</strong> Chapter 8, Sampling, Sampling Distribution, Confidence Interval</td>
</tr>
</tbody>
</table>
| 11/19     | Chapter 9, Test of Significance  
**Chapter 12, Simple Linear Regression** |
| 11/26     | **Short Quiz (on previous 2 weeks’ material)** Chapter 13, Multiple Regression, Model Building PROJECT#2 |
| 12/3      | **FINAL EXAM (comprehensive)**  
Chapter 13, Multiple Regression, Model building PROJECT#3 |
Please complete the attached personal data sheet.

**Personal Data Sheet**

Please complete as well as you can (some questions may not apply to you) and hand in the first day of class. These sheets will help me understand your background, and they will assist me as I determine the breadth, depth, and pace that we cover the course concepts.

Name _______________________ Preferred First Name ______________________

Phone ______________________ E-mail ________________________________

What’s the best way to contact you (phone or e-mail) if needed___________

What do you consider your "home" country (or state)? _________________

Which colleges(s) did you graduate from? ______________________________

What was your major(s)? ___________________________________________

Please indicate your highest level achieved in undergraduate quantitative methods: (intro or intermediate)
Calculus? ____________________ Math.? _____________________________

Describe your work experience (occupation, years of experience):

How would you classify the industry you worked/work in? _________________

Are you an MIB student? ________ JD/MBA student? _________

If you know it, what will be your MBA concentration? ___________________

Do you have a specific industry/occupation that you would like to pursue and/or do you have a job waiting for you when you complete the MBA? Please list:

List here anything else you would like me to know about your background or interests, or expectations for the course (continue on back if needed):