Quantitative Methods
MBAM 609.16
Spring, 2004

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Course Description
This course covers topics both in theory and with a demonstration of the appropriate quantitative analysis techniques with a focus on linear models such as linear programming, network analysis, and PERT-CPM, as well as forecasting techniques. The application of computer-based technology is used wherever appropriate.

Course Objectives
Students will be expected to acquire skills to determine which problems of management are susceptible to quantitative analysis. They will be expected to become facile with the computer software to solve quantitative problems.

Tests
Tests will cover the material following the preceding test. The first test will be given the fourth week of class and will cover the material of the first three weeks.

Each test will be approximately 90 minutes in length. Each test will be OPEN BOOK and OPEN NOTES.

Office Hours
My office is at the Ventura County Center. I am available at that campus Monday through Friday from 9:30am until 4:30pm. I also keep Saturday hours on most weeks from 10:00am until 4:00pm. Appointments can be made for any time.
**Computer Use**

Software will be used for most of the computational aspects of this course although some computations can be done manually. It will be the individual student’s responsibility to become familiar with and use of the software.

**Text and Software**


Software: EXCEL and software in textbook

**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 the 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:

1. Dishonesty in any form, including plagiarism, illegal copying of software, and knowingly furnishing false information to the University.
2. Forgery, alteration, or misuse of University documents, records, or identification.
3. Failure to comply with written or verbal directives of duly authorized University officials who are acting in the performance of assigned duties.
4. Interference with the academic or administrative process of the University or any of the approved activities.
5. Otherwise unprotected behavior that disrupts the classroom environment.
6. Theft or damage to property.
7. Violation of civil or criminal codes of local, state, or federal governments.
8. Unauthorized use of or entry into University facilities.
9. 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 and restrictions of the student’s privileges may accompany probation.

This section is in accordance with GSBM Catalog.

**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 office, 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 the GSBM catalog.)

This section is in accordance with GSBM Catalog.

**Grading**

The grade will be based on the following division of the total grade:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>2 exams @25 points</td>
<td>50%</td>
</tr>
<tr>
<td>Forecast Paper</td>
<td>10%</td>
</tr>
<tr>
<td>Decision Paper</td>
<td>10%</td>
</tr>
<tr>
<td>Review of 2 Edelman Papers @15 pts</td>
<td>30%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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Note: Edelman Papers can be found in the Journal “Interfaces” which is published by the academic association INFORMS. The Edelman papers are published annually ONLY in the January/February issue.

An A grade will require the total points of the student to be at least 95%.

An A- grade will require the total points of the student to be at least 90%.

A B+ grade will require the total points of the student to be at least 87%.

A B grade will require the total points of the student to be at least 84%.

A B- grade will require the total points of the student to be at least 80%.

A C+ grade will require the total points of the student to be at least 77%.

A C grade will require the total points of the student to be at least 74%.

A C- grade will require the total points of the student to be at least 70%.

A student whose total points are less than 70% will receive an F.
# Course Outline

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Assignment</th>
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<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; –</td>
<td>Introduction</td>
<td>Chapters 1</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; –</td>
<td>Introduction to Optimization</td>
<td>Chapter 2</td>
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<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; –</td>
<td>Solving LP in a Spreadsheet</td>
<td>Chapters 3 &amp; 4</td>
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<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; –</td>
<td><strong>Test 1 – Linear Programming</strong></td>
<td>Chapter 15</td>
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<td></td>
<td>Decision Theory</td>
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<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; –</td>
<td>Project Management</td>
<td>Chapter 14</td>
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<tr>
<td>6&lt;sup&gt;th&lt;/sup&gt; –</td>
<td>Time Series Forecasting/Regression</td>
<td>Chapters 9 &amp; 11</td>
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<tr>
<td>7&lt;sup&gt;th&lt;/sup&gt; –</td>
<td>Review</td>
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<td></td>
<td><strong>Final Exam</strong></td>
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## Homework Assignments

### Assignment 1 – Forecasting (10 points)

The forecasting homework assignment is a forecasting analysis of stock. Each student is to select a company listed on one of the stock exchanges for which there is at least 5 years of history. From the five-year history extract stock price, revenue and earnings per share at the end of each quarter. Use at least three forecasting models to project the stock price, revenue and earnings per share at the end of the next quarter.

Discuss which of the three forecasting models best forecasts each of the three stock parameters. The written paper should be no less than 5 typed pages and no more than 7 typed pages. Computer output (such as charts, graphs and tables) may be included or attached but will not be counted as part of the 5 to 7 pages.
**Assignment 2 – Paper reviews** (20 points each)
The second homework assignment is to select any two articles from the Franz Edelman Award papers which are published annually by INFORMS and are found in the Journal Interfaces. Each article is to be reviewed in terms of the following:

1. What is your opinion of the value of the article with respect to the business community? Why?
2. What is your opinion of its value with respect to this course?
3. Provide a three-page summary of the article.

The assignment should be no less than 5 pages and no more than 7 pages. **Papers submitted that do not follow these guidelines will be penalized at least 2 points. These papers can be submitted any time prior to but not later than the next-to-last class. Only one article can be submitted in any one week.**

The first article must be from an issue prior to 1997. The second article must be from an issue 1997 or later.

**Assignment 3 – Decision Paper**
The third homework assignment is to develop a decision tree based on a problem assigned in class. In particular, you are asked to develop a decision tree to solve the problem (define measures and scales for terminal values and methods and logic for assessing any probabilities). Be as specific as possible. The decision tree must have at least 40 nodes but no more than 100 nodes.

**Important Points to Remember**

**FACSIMILE IS NOT ACCEPTED!**

**EMAIL SUBMISSION OF HOMEWORK IS ONLY ACCEPTED WITH PRIOR WRITTEN PERMISSION OF DR. BLEUEL. WITHOUT**
PRIOR PERMISSION THE HOMEWORK WILL NOT BE ACCEPTED!