Dr. Ali Akbari

MBFE 656.34

Quantitative & Strategic Decision Analyses

FALL 2003

THURSDAY

6:00-10:00 p.m.

San Fernando Valley Center

SYLLABUS
Quantitative & Strategic Decision Analyses  
MBFE 656.34  
Fall 2003

Day/Class time: Thursdays 6:00 PM-10:00 PM  
Location: SFV Center  
Professor’s Name: Dr. Ali Akbari  
Tel. #: (805) 493-3379  
E-mail address: aakbari@pepperdine.edu

Introduction:  
Quantitative & Strategic Decision Analyses (MBFE 656.34) is about how management science and operations management could be used to help managers make better decisions. The focus of the course is on the decision-making process and the role of management science and operations management in that process. Operations management involves the systematic design, operation, control and improvement of business processes to achieve organizational goals, most often by providing the customer maximum value with minimum firm resources. In another words, OM refers to management of core operations of an organization. Core operations entail the process of transformation of inputs to outputs using technical, human, and financial resources. Operations Management (OM) knowledge helps you to design, implement, manage, and improve manufacturing and service production systems and processes. Management science is a quantitative approach to decision-making process. It had its early roots in World War II and is flourishing in business and industry. This course emphasizes the application of quantitative approaches and techniques by using business and industrial problem illustrations to introduce the quantitative concepts.

Course Description and Objective:  
The objective of this course is to provide you with an understanding of operations and the role that they play within an organization. The main purpose of the course is a clear explanation of the concepts relating to the operations function in both manufacturing and service organizations. The operations process is responsible for planning, organizing, and controlling resources in order to efficiently and effectively produce goods and services so as to meet the goals of an organization. Quantitative tools of analysis used to support decision-making in the various operations management activities will be explained. The purpose of Quantitative & Strategic Decision Analyses (MBFE 656.34) is to provide students with a sound conceptual understanding of the role Operations Management plays in the decision-making process. Specifically, the course is concerned with the wide variety of quantitative techniques currently being used in the field of management science (a field melding portions of business, economics, statistics, mathematics, and other disciplines into a pragmatic effort to help managers make decisions). As an area of study, these quantitative methods are often identified as operations research. This course will acquaint students with a variety of case studies based on real world applications. Topics include Forecasting, Linear Programming including Sensitivity Analysis, Integer Linear Programming, Queuing theory and Waiting Line Models, Inventory Decision Making, PERT &CPM Models, Decision Analysis (Deterministic as well as Probabilistic Models), Transportation, Transshipment and Assignment Models, Optimization Techniques and Simulations.
Computer Projects

The proliferation of personal computers (PCs) throughout businesses, industry and higher education has brought about a major change in the study of quantitative techniques and management science courses. There is a symbiotic relationship between the use of computers and the application of quantitative methods in the managerial decision making process.

There will be a total of 5 computer projects which constitutes 35 percent of your total grade. These projects are selected to represent the real-world applications of quantitative techniques in managerial decision-making process. You are required to learn the Management Scientist Software (version 5) which is a collection of production and operations management analytical software. This software package enables the student to use and understand the increasing role that microcomputers play in implementing management science model.

A growing concern for effective resource use in all types of organizations has given an important boost to the development of management information systems built around powerful desktop and mainframe computer systems and user-friendly software programs. These modern management information systems are designed to gather and organize a wealth of valuable operating information. With timely information on demand and cost conditions, for example, managers become able to effectively coordinate marketing and production decisions. Such coordination of marketing decisions is necessary if economic theory and methodology are to be effectively applied in the decision making process. As a result, economic considerations play an important role in the design and implementation of modern management systems. Similarly, computer-based systems are typically required if economic reasoning is to play a meaningful role in the decision making process in a wide variety of organizations. Therefore, there is a symbiotic relationship between the use of computers and the application of economic theory and methodology in the managerial decision making process. The use of computer-based courseware offers the following significant advantages over traditional business teaching methods:

a. Increased emphasis on problem recognition and model formulation (including assumptions and limitations).
b. Decreased emphasis on computational procedures.
c. Increased emphasis on real-world business applications.
Required Textbook:


Alternative References:

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

1. L.L. Laplin QUANTITATIVE METHODS FOR BUSINESS DECISIONS WITH CASES, 9TH EDITION, HARCOURT, BRACE, JOVANOVICH, 2002.


Teaching Methodology:

Operations Management content will be presented through lectures, cases, videos, and assigned readings and/or exercises from either the textbook or supplements.

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 the instructor after class to arrange an alternative appointment.

Grading and Evaluation:

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>Exercise</th>
<th>Percent</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Midterm Exams</td>
<td>30%</td>
<td>300</td>
</tr>
<tr>
<td>(b) Computer Projects</td>
<td>30%</td>
<td>300</td>
</tr>
<tr>
<td>(c) Final Exam</td>
<td>35%</td>
<td>350</td>
</tr>
<tr>
<td>(d) Extra Credit/Class Participation</td>
<td>5%</td>
<td>50</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100%</strong></td>
<td><strong>1,000 Points</strong></td>
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A relative frequency distribution table will be used to determine your letter grade in the class. Please note that the letter grade in the class will not be calculated as an average of the letter grades for each test/project. In fact, I will not assign any letter grades for each test or project. For each exam or computer project, you will simply get a score and not a letter grade. The letter grade will be determined at the end of the semester based on the combined points of all exams and projects. A relative frequency distribution of the total score (i.e. a curve) 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>
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</tbody>
</table>

**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 operations management. 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.

**Evaluation Policy:**

The midterm exam covers chapters 1-7 and the final exam is cumulative. 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. 221-222

**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, (310) 506-6500. (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. 33.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date/ Wednesday</th>
<th>Chapter</th>
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<tbody>
<tr>
<td>1</td>
<td>8/28</td>
<td>Introduction, Ch 1, 2</td>
</tr>
<tr>
<td>2</td>
<td>9/4</td>
<td>Ch. 2</td>
</tr>
<tr>
<td>3</td>
<td>9/10</td>
<td>Ch. 3,4</td>
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<tr>
<td>4</td>
<td>9/18</td>
<td>Ch. 4, P#1</td>
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<tr>
<td>5</td>
<td>9/25</td>
<td>Ch. 7</td>
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<tr>
<td>6</td>
<td>10/2</td>
<td>Ch. 9, P#2</td>
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<tr>
<td>7</td>
<td>10/9</td>
<td>Midterm</td>
</tr>
<tr>
<td>8</td>
<td>10/16</td>
<td>Ch. 10</td>
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<tr>
<td>9</td>
<td>10/23</td>
<td>Ch. 10, 12</td>
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<tr>
<td>10</td>
<td>10/30</td>
<td>Ch. 12, P#3</td>
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<tr>
<td>11</td>
<td>11/6</td>
<td>Ch. 14</td>
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<td>12</td>
<td>11/13</td>
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<tr>
<td>13</td>
<td>11/20</td>
<td>Ch. 16</td>
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<tr>
<td>14</td>
<td>11/27</td>
<td>Ch. 16, P#5 Review</td>
</tr>
<tr>
<td>15</td>
<td>12/4</td>
<td>Final Exam</td>
</tr>
</tbody>
</table>

P#1 - Project#1 is due.
P#2 - Project#2 is due.
P#3 - Project#3 is due.
P#4 - Project#4 is due.
P#5 - Project#5 is due.
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)

Statistics?________________     Operations Research?_________________
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):