



Department of Information Systems
Course Outline

Course Number	IS 601
Title	Quantitative Methods for Managerial Decision Making
Units	3
Prerequisites	MBA standing required
Course Classification	Undergraduate upper division
Course Coordinator	Omer Benli
Terms Offered	
Prepared by	Omer Benli
Date	10/24/05

I. General Information

II. Catalog Description

Statistical analysis includes probability, estimation, hypothesis testing, forecasting and decision process. Management sciences include quantitative modeling, math programming, decision support systems and simulation applicable to various business functions. Computer software packages will be used as analytical tools.

III. Course Goals and/or Objectives and /or Expected Student Learnings

<p>Content-specific:</p> <ul style="list-style-type: none"> • Statistical Inference - how to apply our conclusions based on a manageable size sample to the entire population e a basic understanding of e-business models and channels, including mobile commerce • Decision and Risk Analysis - analyzing sequential decisions and coping with uncertainty using probabilities; and simulating the future • Simultaneous Decision Problems - optimizing interdependent decisions.
<p>Skill-specific:</p> <ul style="list-style-type: none"> • Student will learn how to use Excel spreadsheets effectively for business analysis. You will



learn a comprehensive set of spreadsheet skills and tools, including how to design, build, test, and use a spreadsheet. These will add immediate value for your other courses and future careers.

- Student will know basic principles and techniques of applied mathematical modeling for managerial decision-making. You will learn to use some of the more important analytic methods, to recognize their assumptions and limitations, and to employ them in decision-making. These methods will be applied to problems arising in a variety of functional areas of business.
- Student will have an ability to structure problems and to perform logical analyses. You will practice translating descriptions of business situations into formal models, and you will investigate those models in an organized fashion.
- Student will learn to settings in which models can be used effectively. You will apply modeling concepts in practical situations. You will learn to extract insight from models, and to use those insights to communicate, persuade and motivate change. The goal is to make statistics and quantitative methods real, accessible, and interesting.

IV. Text

- **Data Analysis & Decision Making** by Albright, Winston, and Zappe, Thompson, 2006. ISBN: 0-324-40083-7; or 0-324-40082-9 (with CDs), third edition.

V. Course Outline

- Analysis of Data
- Probability
- Distributions
- Decision Trees
- Sampling
- Confidence Intervals
- Hypothesis Testing
- Review of Statistical Inference
- Regression Analysis
- Optimization Modeling
- Optimization Applications
- Simulation Modeling

VI. Methods of Presentation

Lectures supplemented with software implementation in computer laboratory; with emphasis on problem solutions and analysis of computer output.

VII. Methods of Evaluation

Minimum of two tests in addition to final exam. Computer-based homework assignments on the topics



covered.

VIII. Bibliography

- Operations Research/Management Science Today (<http://lionhrtpub.com/ORMS.shtml>)
- INTERFACES Online (http://pubsonline.informs.org/main/browse.php?action=issues&user=ZlanGMk=&journal_id=1)
- Course Related Online Resources (<http://www.csulb.edu/~obenli/resources.html>)

IX. Justification

This course complements the education of an IS student by providing learning experiences in statistical analysis and management science fundamentals as they support decision making processes throughout the organization, as recommended by 2003 AACSB accreditation standards.

X. Disabilities

Students with disabilities are responsible for notifying their instructor as early as possible of their needs for an accommodation of a verified disability. A student with a disability is urged to consult with Disabled Student Services as soon as possible in order to identify possible accommodations to enhance academic success.

XI. Other



From the CSULB Policy Statement PS 04-05 (EFFECTIVE: Fall 2004)

http://www.csulb.edu/divisions/aa/grad_undergrad/senate/documents/policy/2004/05/

Information that must be included in the course syllabus:

- (a) instructor's name, office number, office telephone number and/or e-mail address, and office hours;
- (b) class term, meeting times, and location;
- (c) course goals and/or objectives and/or expected student learning outcomes;
- (d) required text(s) and/or materials and information on any course fee;
- (e) types and sequence of assignments and basis for assigning course grade;
- (f) how the instructor will interpret the University withdrawal policy in this class;
- (g) a statement of, or reference to where students may find attendance policies and provision for makeup of assignments when there is an excused absence;
- (h) a reminder that it is the student's responsibility to notify the instructor in advance of the need for accommodation of a university verified disability;
- (i) other information essential to the course, for example safety information, information about accessing online resources, information about assignments that must be accomplished at off-campus locations (e. g. field trips, service learning).

Instructors should also refer students to the "General Regulations and Procedures" in the Catalog. They are encouraged to discuss their interpretation of these General Regulations and Procedures, especially with regard to cheating and plagiarism. A model syllabus has been prepared by the Faculty Center for Professional Development and is available on the Center's website: <http://www.csulb.edu/centers/fcpd/>:

The New Syllabus Policy

*The Syllabus Policy has been approved by
the Academic Senate.*

Please click here to see it:
[*syllabuspolicy-asam3-18-04-clean*](#)

*The template to guide faculty in
designing their syllabi is now
available. Please click here to view it:*
Syllabus Template

*A sample syllabus is also available.
Please click here: ***Sample Syllabus****