

## COLLEGE OF BUSINESS STANDARD COURSE OUTLINE

### I. General Information

Course Number:	IS 520
Course Title:	Spreadsheet modeling
Units:	3
Prerequisite:	Graduate standing, IS 501
Course Coordinator:	Hongyu Chen
SCO prepared by:	Hongyu Chen
Date prepared/revised:	Oct. 7, 2012

### II. Catalog Description

Advanced topics in spreadsheet tools and techniques, such as advanced functions, solver and curve fitting. To model and solve business problems in optimization, forecasting, customer profitability, customer loyalty and online reviewer behavior.

### III. Curriculum Justification(s)

Many managerial decisions—regardless of their functional orientation—are increasingly based on analysis using *quantitative* models from the discipline of management science. Management science tools, techniques and concepts (e.g., data, models, and software systems) have dramatically changed the way business operates in manufacturing, service operations, marketing and finance. This subject is designed to introduce students of modeling, or thinking structurally about, decision problems in order to enhance decision-making skills with the help of spreadsheet software.

Our goal is to enable students to become *intelligent users* of management science techniques. In that vein, emphasis will be placed on *how*, *what* and *why* certain techniques and tools are useful, and what their ramifications would be when used in practice, all in concert with the overarching goal for students to become excellent managers.

Upon completion, the student will meet the following four specific CBA learning goals:

- Learning Goal #1 – Critical Thinking
- Learning Goal #3 – Team and interpersonal skills
- Learning Goal #6 – Quantitative and Technical Skills

### IV. Course Objectives

- To enable the students to find some structured ways of dealing with complex managerial decision problems.

- To introduce students to simple decision models and management science ideas that provide powerful and (often surprising) qualitative insights about a large spectrum of managerial problems.
- To provide students with tools for deciding when and which decision models to use for the specific problems.
- To give the students a feel for the kinds of problems that can be tackled using spreadsheet modeling and decision analysis.
- To provide the students with more powerful ways of using spreadsheets, this will be a ubiquitous tool in their managerial careers.

## **V. Outline of Subject Matter**

- Basic of Spreadsheet modeling, Excel tutorial
- Basic optimization models, curve fitting
- Linear programming
- Max flow, Min cost, complex network
- Integer programming
- Advance Excel skills, write customize function using VBA
- Consumer choice, counting & timing
- Customer life-time value, profitability, survival
- Online reviewer management
- Reviewer behavior model

## **VI. Methods of Instruction**

This course is taught by lectures and heavily hands-on exercises. After each major topic is introduced students undertake short exercises to ensure their understanding of the essential concepts. The course must cover basic optimizing models, curve fitting, linear programming, integer programming, consumer choice, counting & timing, customer life-time value, survival. A group base project on real world problem is strongly recommended.

### Extend and Nature of Technology Use

Instructors must assign homework, exercises, and projects of various quantitative decision problems.

### Required Texts

Practical Management Science. By Wayne Winston and S. Christian Albright,  
ISBN: 1111531315

### Required Software

MS Excel

## VII. Instructional Policies Requirements

### *A. Assessment Criteria*

#### Homework

Students will complete individual and group based homework profiling their competence in various subject matters.

#### Quizzes and Exams

Students will complete mid-term exam (required), and final exam (required).

#### Projects

Instructors are strongly encouraged to assign comprehensive course project (group) that requires problem solving and uses Excel to conduct real-world data analysis.

### *B. Required Statement*

In compliance with university policy: Final grades will be based on at least three, and preferably four or more, demonstrations of competence. In no case will the grade on any class tests count for more than one-third of the course grade.

### *C. Attendance, Withdrawal, Late Assignments*

Students are expected to attend courses and turn in assignments on time. Specific attendance and late assignment policies are up to each individual instructor's discretion. The withdrawal policy is the same as that of the university.

### *D. 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.