UTD

<div style="background:#999">Course Information</div>

Course Number: OPRE6398.5U1
Course Title: Prescriptive Analytics
Term: Summer 2016

Professor Contact Information

Professor: Alex Angelus
Office Phone: x5969
Email Address: alexandar.angelus@utdallas.edu
Office Location: 3.610
Office Hours: Wednesdays, 4:30-5:30pm

About the Instructor

Visiting Professor of Operations Management at Jindal School of Management; Ph.D. in Operations Management, Graduate School of Business, Stanford University, 1997.

TA Contact Information

Teaching Assistant: TBD
Email Address: TBD
Office Location: TBD
Office Hours: TBD

Course Description

OPRE 6398 Prescriptive Analytics (3 semester hours)

The Prescriptive Analytics course is about learning to do things better. It is about mathematical models that improve decision making at all levels in the organization, from departmental manager to Director of Marketing to the CEO. Applications explored will be in finance, operations management, supply chain, economics, marketing and human resources. Topics will include optimization methods such as linear, nonlinear and integer programming, and analytical approaches to dealing with uncertainty such as simulation. Students will make extensive use of Excel and several spreadsheet-based add-ins to solve real business problems, improve processes, and help make important business decisions. Prerequisite: OPRE 6301.

UTD

Course Objectives and Requirements

Student Learning Objectives

Students are expected to develop skills in problem formulation, identification of appropriate optimization techniques, computer implementations in Excel and/or manual calculations and written explanations, and interpretation of results. Further, students will become familiar with the problem-solving process, including, identification of the problem, identification of the proper information and optimization method to be used in the analysis of the problem, and explanation of the result. Students will also understand the usefulness of mathematical tools for business applications.

Required Textbook

SPREADSHEET MODELLING AND DECISION ANALYSIS: A Practical Introduction to Business Analytics, 7th Edition,

by Cliff. T Ragsdale

(ISBN 10 digit: 1-285-41868-9 / ISBN 13 digit: 978-1-285-41868-1)

This is the required edition of the text. All other editions are likely have different problems and/or chapter topics. "Abbreviated" and/or "International" editions will generally NOT have the same content, order of topics, or identically numbered example problems as the required edition of this textbook. By not getting the correct edition the student risks a low exam grade as exams may refer to textbook problems.

Required Software

This course uses a Windows-based laptop, eLearning, Internet Access, Microsoft Excel 2007 or higher (no trial versions), and Data Analysis (included with Excel). Our main software tool will be Analytic Solver Platform, which is an add-in to Excel.

Course Content and Grading

Content of the Course

The course will cover the following topics.

(1) Introduction to Modeling? (Chapter 1)
(2) Introduction to Optimization and Linear Programming (Chapter 2)
(3) Modeling and Solving LP Problems in a Spreadsheet (Chapter 3)
(4) Sensitivity Analysis for Linear Programs (Chapter 4)
(5) Network Modeling (Chapter 5)
(6) Integer Linear Programming (Chapter 6)
(7) Nonlinear Programming and Evolutionary Optimization (Chapter 8)
(8) Simulation (Chapter 12)

UTD

Grading

Course grade for each student will be based on 9 homework assignments and 3 in-class exams. The weights of those grade components will be as follows.

- Homework: 20%
- Exam I: 25%
- Exam II: 25%
- Exam III: 30%

Course Schedule: OPRE 6398.501

DATE	CHAPTERS	REQUIERED READING Assignment Due
Wednesday, May 25	1 & 2	Chapters 1 and 2
Wednesday, June 1	3	Chapter 3 **ASSIGNMENT 1 DUE**
Wednesday, June 8	4	Chapter 4 **ASSIGNMENT 2 DUE**
Wednesday, June 15	NO CLASS	**ASSIGNMENT 3 DUE**
Wednesday, June 22	**Exam 1 (Chapters 1 - 4)**	
Wednesday, June 29	5	Chapter 5
Wednesday, July 6	6	Chapter 6 **ASSIGNMENT 4 DUE**
Wednesday, July 13	8	Chapter 8 **ASSIGNMENT 5 DUE**
Wednesday, July 20	**Exam 2 (Chapters 5,6, & 8)**	**ASSIGNMENT 6 DUE**
Saturday, July 23	12	Chapter 12 through pg. 650
Wednesday, July 27	12	Chapter 12 **ASSIGNMENT 7 DUE**
Wednesday, August 3	12	**ASSIGNMENT 8 DUE**
Wednesday, August 10	**Exam 3 (Chapter 12)**	**ASSIGNMENT 9 DUE**