# Decision Making and Risk Management
## CNST 6350

## Course Description
This course will enable students to become power users of Excel and will show them how to build models of unstructured problems so they can make better decisions and gain insight into the impact various factors have on those decisions. The vehicle used for developing such models is the familiar spreadsheet. Students will learn the creative process of constructing and using spreadsheet models of problems, specifically how to design, build and test spreadsheets and workbooks, and how to improve the efficiency and effectiveness with which they are used. Topics are explored by learning how to solve a wide variety of problems in the construction industry, often using tools and techniques from the field of management science that are built-in to Excel. Students with the knowledge acquired in this course will provide their employers with a competitive advantage and will themselves enjoy a competitive advantage over their peers who lack these skills.

## Course Prerequisites
Graduate standing or consent of instructor.

## Textbook
Practical Management Science Revised 4th edition., Winston & Albright (2009), Cengage Learning, ISBN 978-1-111-53131-7.

### Schedule of Topics*

Introduction: Purpose of the course and review of the syllabus
Becoming a power user of Excel: Essential features and functions
- The Excel Tutorial
- Excel Features Workbook
- The Wall example
- Charting and regression
- Creating and formatting charts
- StatTools Add-in
- Using regression for estimating

Homework # 1 due
Exam 1
Optimization
- Introduction to Optimization
- A simple problem
- Excel's Solver Add-in
- Linear problems and their features
- Integer problems and their features
- Nonlinear problems and their features

Homework # 2 due

Exam 2
Simulation: Dealing with uncertainty
Introduction to simulation
A simple problem
@RISK Add-in
One uncertain variable
Simulation optimization
Two uncertain variables
Correlated variables
Examples from a variety of fields
Homework # 3 due
Exam 3
Final Exam on campus (room TBA)

**Academic Honesty**

The instructor reserves the right to adjust letter grades, upward only, based on individual attendance and class participation if numerical grade warrants such consideration. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from The University. Since dishonesty harms the individual, all students, and the integrity of The University, policies on scholastic dishonesty will be strictly enforced.

**Students with Disabilities**

University of Houston provides, upon request, appropriate academic adjustments for qualified students with disabilities. Any student with a documented disability (physical or cognitive) who requires academic accommodations should contact the Center for Students with Disabilities (713/743-5400) for more assistance.

**Exam Policy**

Exams will include material covered in class discussions and homework assignments. Make-up exams will be given only in the event of a verified emergency or doctor-verified sickness. The student is responsible for all reading assignments and class handouts whether or not covered in class or listed on the syllabus.

**Course/Instructor Evaluation**

A course/instructor evaluation will be conducted in class during the last scheduled lecture. Any suggestions you have on improving the course, however, are welcome throughout the term.

For detailed information about Disabilities, Religious Holy Days, the Academic Calendar, and Academic Honesty, and other information, please visit the UH website:

http://www.uh.edu/provost/stu/stu_syllabsuppl.html