

ISOM 3710 Business Modeling and Optimization, Fall 2020

Instructor

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Tutors

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This course will focus on modeling and problem solving using Excel. The emphasis will be on building useful models for analyzing and solving practical problems. **This is a hands-on course and we will adopt a workshop approach to learning.** The teaching methods will include: mini lectures, demonstrations and practical exercises. Students will be exposed to a variety of managerial problems and their modeling skills will be enhanced around the following aspects: working with Excel; using formulas; manipulating information; analyzing business problems; identifying optimal decisions.

The course has a two-fold purpose. First, it introduces students to simple models that provide powerful and often surprising qualitative insights about a large spectrum of managerial problems. Second, it gives students a general idea for the kinds of problems that can be tackled quantitatively, the methods available for doing so, and the relevant data that needs to be gathered.

Course Materials

(1) Textbook: *Practical Management Science*, 6th edition, by Winston and Albright, Cengage, 2017.

- E-book could be purchased through the link below: https://w5.ab.ust.hk/cgi-bin/std CGI.SH/WService=broker_ba_p/prg/ba_stdt_main.r
- Earlier versions: “*Practical Management Science, 5th edition*”, “*Management Science Modeling*”, “*Essentials of Practical Management Science*”

(2) Slides, Excel files and other course material downloadable from <http://canvas.ust.hk> using your ITSC account name/password.

Contents to be covered

- Ch 2: Introduction to spreadsheet modeling
- Ch 3: Introduction to optimization modeling
- Ch 4: Linear Programming models
- Ch 5: Network models
- Ch 6: Optimization models with integer variables
- Ch 7: Nonlinear optimization models

Office Hours

- Professor: 10:00-11:00 (f2f) on Monday, or by appointment.
- Tutors: 15:00-16:00 (f2f, in LSK Room 4048) and 16:00-17:00 (online) on Friday.

Grading

- Quiz (15 October, in-class): 20%;
- Homework: 30%;
- Final examination: 40%;
- Class Attendance: 10%;
- *Bonus point for class participation/discussion.*

Important Policies

1. Quiz and examination will be open-book.
2. **There is no makeup quiz:** if you miss the quiz for any reason, its weight (20%) will be automatically shifted to the final examination.
3. Class attendance will be based on class registration / attendance records, and you will get full mark of this part if you don't miss more than twice.
4. There are two kinds of assignments: Homework and Exercises. You need to submit Homework on the due date, but Exercises are for your own practice only. **Homework could be finished in team of up to three students.** Solutions for homework/exercises will be discussed in the tutorial session and / or posted in Canvas.
5. You are strongly encouraged to re-do all in-class exercises/examples by yourself after the class, as soon as possible, and discuss with the professor or the tutors for any problem you have.