

# ISOM 3710 Business Modeling and Optimization, Fall 2024

## Instructor

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## Tutors

Mr. Piao Hu, Email: [piao.hu@connect.ust.hk](mailto:piao.hu@connect.ust.hk)  
Mr. Ce Zhang, Email: [c Zhangdp@connect.ust.hk](mailto:c Zhangdp@connect.ust.hk)

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*, 6<sup>th</sup> edition, by Winston and Albright, Cengage, 2019.
  - Earlier versions: “*Practical Management Science, 5<sup>th</sup> edition*”, “*Management Science Modeling*”, “*Essentials of Practical Management Science*” by the same authors.
- (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 on Tuesday, or by appointment.
- Tutors: 15:00-17:00 on Friday, LSK Room 4083.

## Grading

- Quiz (15 October, in-class): 20%;
- Homework: 15%;
- Final examination: 55%;
- Class Attendance: 10%;
- *Up to 5% bonus points for class participation/discussion.*

## Important Policies

1. Quiz and examination will be semi-open book: accessible to all in-class materials and personal notes. No internet/telecommunication during quiz and examination.
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 attendances will be recorded in some classes after the add-drop period. You will get full mark of this part if you don't miss more than once.
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. (**Sign up your team in Canvas by 24 Sept.**)
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.
6. **Peer review for group work:** It is expected that every teammate will contribute actively to homework assignments. If you believe that any of your teammates have not made enough contribution to the assignments, you may email me a peer evaluation before the final examination. *You do not need to do the peer evaluation if you believe that all your teammates should receive the same score*, which I hope is the norm, not the exception.