IEEM System Simulation, Fall 2018

Wednesday 9:10–12:00 **Depart. of IEEM**
National Tsing Hua University (NTHU)

Instructor:
Professor Wheyming Song 桑慧敏
Office: 815, Engineering Building No.1
Office Hour: T 10:00–12:00

TA: Yi-Zhu Su 蘇意筑
Office: 706-1
Office Hour: R 10:00–11:00

Reference books and notes:

1. FlexSim 2018 – 3D Simulation Software
2. Barry L. Nelson, *Stochastic Modeling*, McGraw-Hill International Editions, 1995.
3. Law and Kelton, *Simulation Modeling and Analysis,* McGraw-Hill, 1982.
4. Please prepare lessons before class on NTHU-iLMS System Simulation

The course will be taught primarily from CLASS NOTES. Please download and print out the CLASS NOTES from the NTHU iLMS web platform before class. (NTHU iLMS website: http://lms.nthu.edu.tw/)

Prerequisites: Basis of Probability , Statistics, and Computer Programming.

Goal: The goal is to describe theses tools in a way that exploits your common sense and intuition about dynamic systems,but also enables you to use the simulation software (Flexsim 6), probability, and statistics at your proposal to perform a detailed analysis. At the end of this semester, you learn how to use Flexsim to analyze dynamic systems. You should also learn much more about probability and statistics.

Content: Three major parts

- Basic Tasks:
  - input modeling (random numbers, random variate generation)
  - modeling (MS Excel and Flexsim)
  - output analysis (statistics)
- Advanced Tasks: common random numbers (CRN)
- Projects: Physical Examination (PE) and Manufacturing Process (MP)

Grading:

Home Work	20%
Quiz	20%
Mid-Term Exam	20%
Final Exam	25%
Presentations	15%