

IEEM System Simulation, Fall 2020

Wednesday 9:10–12:00
National Tsing Hua University (NTHU)

Depart. of IEEM

Instructor:

Professor Wheyming Song 桑慧敏
Office: 815, Engineering Building No.1

TA: Syuan-Ren Chen 陳宣任, Yu-Ting Cho 卓好庭, Pin-Jung Su 蘇品融, Zih-Wei You 尤子維
Office: 706-1

Class-Notes and References

1. Class-notes in NTHU-iLMS (Integrated Learning Management System) (數位學習平台) : System Simulation
2. FlexSim – 3D Simulation Software
3. Barry L. Nelson, *Stochastic Modeling*, McGraw-Hill International Editions, 1995.
4. Law and Kelton, *Simulation Modeling and Analysis*, McGraw-Hill, 1982.
5. 104 NTHU OpenCourseWare (OCW): <http://ocw.nthu.edu.tw/ocw/index.php?page=course&cid=128&>

The course will be taught primarily from CLASS NOTES, stored in NTHU iLMS web platform (NTHU iLMS website: <http://lms.nthu.edu.tw/>). You are suggested to download the CLASS NOTES before classes.

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

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

Content: Three major parts in building simulation models

- 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 Processes (MP)

Grading:

Home Work	25%
Quiz	25%
Mid-Term Exam	25%
Final Exam	25%