SIE 431/531
Simulation Modeling and Analysis
Spring 2015

Class hours: MWF 10:00 – 10:50 a.m.
Office hours: MW 11 – 12 or by appointment

Instructor: Dr. Wei Lin
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Teaching Assistant: Ms. Pei-Shan Hsieh, Email: sacidoo@gmail.com, Office hour: Mon: 3:30-5, Thurs: 3:30-5. Location: 260 Engineering Building.

Purpose: This course is designed to develop student's ability to model and analyze real systems using discrete event simulation. Through this course, the student will understand the power and characteristics of discrete event simulation modeling. During the course, the student will get experience in: (1) formulating an appropriate simulation model for a system, (2) implementing the model as a computer program, and (3) evaluating the output of the model. Interoperability issues of simulation with other applications, including spreadsheet and database, will also be covered.


Topics to be covered:
1. Basic concepts of simulation (definitions and types of simulations)
2. Mechanism of discrete event simulation
3. Random number generation
4. Input data analysis (input distribution modeling)
5. Simulation modeling using Arena package
6. Review of probability and statistics
7. Simulation output analysis
8. Monte Carlo simulation
9. Verification and validation of simulation models
10. Other simulation approaches (Time driven simulations).

Work Required:
1. Exams: There will be two midterms.
2. Homework: Homework will be given on a regular basis.
3. Project: One final project (by group).

Grading (SIE 431):
1. Homework: 15% (homework policy will be announced on D2L)
2. Midterm Exam1: 25%
3. Midterm Exam2: 30%
4. Final project: 20%
5. Participation in in-class group activities: 10% (for students taking the course on campus)

Grading (SIE 531):
1. Homework: 15% (homework policy will be announced on D2L)
2. Midterm Exam1: 20%
3. Midterm Exam2: 25%
4. Final project: 30%
5. Participation in in-class group activities: 10% (for students taking the course on campus)