SIE 431/531
Simulation Modeling and Analysis
Fall 2016

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: Mr. Seunghan Lee Email: shlee17@email.arizona.edu
Office hour: M TH 12:30-2:00pm. Location: 162A 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.

Text: *Simulation with Arena*, W. David Kelton, et al, 6th edition, McGraw-Hill, Boston, MA, 2014

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).

Grading (SIE 431 on campus):
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%

Grading (SIE 531 on campus):
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%

Grading (SIE 431/531 online):
1. Homework: 15% (homework policy will be announced on D2L)
2. Midterm Exam1: 25%
3. Midterm Exam2: 25%
4. Final project: 35%