

IE580: Systems Simulation (Fall 2020)
Purdue School of Industrial Engineering

Course Website (Brightspace): purdue.brightspace.com

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Course Objective: To be able to build simulation models for evaluating behaviors of alternative designs (layout/capacity/decision policy) in various applications such as manufacturing, service, and information systems.

Course Description: Simulation is a process of designing and creating a computerized model of a real or proposed system for the purpose of conducting numerical experiments to understand and analyze the behavior of that system for a given set of conditions. Simulation has been consistently reported as the most popular operations research tool. The main reason for simulation's popularity is its ability to deal with very complicated systems. The course introduces various simulation modeling techniques with emphases on applications.

Pre-requisites: Basic statistics and basic programming skills

Textbook (Optional): W. David Kelton, Randall P. Sadaowski, and Nancy Swets, "Simulation with Arena." 6th Ed.

Handouts: Handouts will be posted in Brightspace system

Homework: Roughly 5 assignments (including one team assignment)

Exams: Two midterm exams and one final exam. All take-home exams.

Project: The term project (in a team) aims to design a solution to a problem of interest by simulation. A proposal and a progress report are required.

Grading: HW (20%), Midterm I (20%), Midterm II (20%), Final (20%), Project (20%).
Cutoffs: 90 (A), 80 (B), 70 (C). (+/- will be applied between cutoffs)