

COURSE NUMBER: IE 5553, 4credits	COURSE TITLE: Simulation
TERMS OFFERED: Spring	PREREQUISITES: Some familiarity with probability and statistics is desirable.
TEXTBOOKS/REQUIRED MATERIAL: 1. Kelton, W. D. Sadowski R. P., and D. A. Sadowski, <i>Simulation with Arena</i> , 3rd edition, McGraw Hill, 2004. ISBN: 0072856947. 2. Winston, W. L., <i>Simulation Modeling using @RISK</i> , Duxbury, 2001. ISBN: 053438059X.	COGNIZANT FACULTY: Cooper DATE OF PREPARATION: May 4, 2007
COURSE LEADER(S): Cooper	CLASS/LABORATORY SCHEDULE: One 3.5 hour class per week CONTRIBUTION OF COURSE TO MEETING PROFESSIONAL OBJECTIVES: 100% engineering topics
CATALOG DESCRIPTION: Discrete event simulation. Using integrated simulation/animation environments to create, analyze, and evaluate realistic models for use in various industry settings, including manufacturing and service operations and systems engineering. Experimental design for simulation. Selecting input distributions, evaluating simulation output.	COURSE TOPICS: 1. Introduction to Simulation Concepts 2. Review of Probability and Statistics 3. Mechanics of Software Package(s) 4. Selecting Input Distributions 5. Verification and Validation 6. Statistical Output Analysis 7. Simulation-based Optimization 8. Examples and Applications

COURSE OBJECTIVES	1. Increase students' awareness of simulation as a tool for studying complex systems 2. Develop students' understanding of technical aspects of simulation 3. Teach students how to conduct/evaluate a simulation study 4. Make students proficient in the use of some software packages
COURSE OUTCOMES	(Letters shown in brackets are linked to program outcomes a-k) 1. Students learn how to formulate and solve problems using tools from simulation. [a, b, c, e, g, k] 2. Students learn how to interpret output of simulation models. [a, b, c, e, g, k]
ASSESSMENT TOOLS:	Midterm Exams, Homework Assignments, Project, Final Exam

IE 5553

Nature of Changes

This is an entirely new document, no previous version exists.