

OR 442 COURSE DESCRIPTION (same as IME 468)

2001-03 Catalog Data:	468 -3 Operations Research - Simulation (Same as OR 442). Simulation models using a high-level simulation programming language; applications in production, inventory, queuing, other models.
Prerequisite(s):	IME 365 or equivalent or consent of instructor.
Textbook(s):	C. D. Pegden, R. E. Shannon, and R. P. Sadowski, Introduction to Simulation Using SIMAN, McGraw Hill, 2nd Edition, 1995.
Coordinator:	H. Felix Lee, Professor of Industrial Engineering.
Objectives:	The primary objective of this course is to provide industrial engineering students with knowledge and practices on how to use computer simulation methods in solving engineering problems that arises in various systems such as inventory systems, manufacturing & warehouse facilities, hospitals, service industries, computer networks, etc.
Topics and Schedule:	<ol style="list-style-type: none"> 1. Introduction to Discrete-Event Simulation (4.5 hours). 2. Random Number Generation (3 hours). 3. Basic Modeling in SIMAN/ARENA (12 hours). 4. Substation Modular Modeling (6 hours). 5. Transport Modeling (3 hours). 6. Conveyor Modeling (3 hours). 7. Advanced Modeling (6 hours). 8. Model Verification and Validation (1.5 hours). 9. Data collection and Curve Fitting (3 hours). 10. Statistical Output Interpretation and Animation (3 hours).
Professional Component:	This course introduces design methodologies using discrete-event simulation method to develop computer models and conduct experiments in order to support decision making processes. This course is an engineering topics course with significant engineering design content.
Relationship to Program Educational Objectives:	<p>This course contributes to the following Industrial and Manufacturing Engineering Program Educational Objectives:</p> <ol style="list-style-type: none"> 1. To provide students with experiences which expose them to the skills and techniques associated with the practice of industrial engineering. 2. To foster in our students the desire and capacity for life long learning.
Prepared by:	H. Felix Lee, Professor in Industrial Engineering and approved by MATH Committee (Feb. 2004)
Date:	September 15, 2001