

# Digital Systems Simulation

## ORI 390R, Unique 19015

### Fall 2006

Instructor: Elmira Popova, ETC 5.120  
Time and location: MW 11-12.30 ETC 7.111  
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URL: Blackboard  
Office hours: Monday, 2-3pm  
Prerequisite: Graduate courses in Probability, Statistics and Stochastic Processes  
Computer literacy, Windows NT and/or UNIX, C/C++.

#### Objectives of the course

It is a graduate level discrete-event simulation course. The emphasis will be on the simulation philosophy, modeling complicated stochastic systems, and how to make optimal decisions with simulation.

#### Resource Materials

Required book: *Simulation Modeling & Analysis* by A. M. Law and W. David Kelton  
4th Edition, McGraw Hill, 2006, ISBN 0073294411.

#### Tentative topics

- Introduction to simulation
- General concepts in discrete-event simulation, Random number generation
- Random variate generation, Queuing models
- Input modeling
- Simulation Languages
- Output analysis for terminating simulation
- Output analysis for steady-state simulation
- Variance Reduction
- Comparing Alternatives
- Simulation from multivariate distributions and time series

#### Grading policy

- Homework 20%
- Midterm Exam 40 %
- Final Exam 40 %

**Additional Administrative Notes**

The University of Texas at Austin provides upon request appropriate academic adjustments for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4241 TDD or the College of Engineering Director of Students with Disabilities at 471-4382.

An engineering student must have the dean's approval to add or drop a course after the fourth class day of the semester or after the second class day of a summer term. Adds and drops are not approved after the fourth class day except for good cause. "Good cause" is interpreted to be documented evidence of an extenuating non academic circumstance (such as health or person problems) that did not exist on or before the fourth class day.

A Course-Instructor Survey from UT's Measurement and Evaluation Center will be administered near the end of the semester.