OR 482/OR 572 Computer Simulation for Decision Making
(Fall Semester 2002)

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Office Hours:	To be Announced		

Required Text:
Harrel, C., Ghosh, B. K. and Bowden, R., *Simulation Using PROMODEL*, McGraw Hill, 2000.

References:

- Jerry Banks, John S. Carson II and John and Barry L. Nelson, *Discrete Event System Simulation*, Second Edition, Prentice Hall Inc., Englewood Cliffs, New Jersey, 1984.
- Law, A. M. and W. D. Kelton, *Simulation Modeling and Analysis*, Second Edition, McGraw-Hill Book Company ,1991.
- Ragsdale, Cliff T., *Spreadsheet Modeling and Decision Analysis*, Cambridge, Third Edition University Press, 2001.

Course Objectives:
The objective of this course is to introduce you to the fundamental concepts of computer simulation and to illustrate their application in the analysis of business systems. The computer simulation package of PROMODEL will be used as the medium through which the various aspects of simulation modeling are introduced. Microsoft Excel will be used to model simple exercises at the beginning of the course to introduce basic ideas in computer simulation.

Grading Scale:
Final grade will be based on your score in assignments and project (50% weight), midterm exam (25% weight) and final exam (25% weight). Schedule to be announced.

A	>90% overall ***and*** >85% in midterm and final exam combined
B	>80% overall ***and*** >75% in midterm and final exam combined
C	>70% overall ***and*** >65% in midterm and final exam combined

Course Outline:

- Introduction to simulation
- Introduction to simulation using Excel
- Basic concepts in simulation modeling
  - Input Data Analysis
  - Random Number Generation
  - Random Variate Generation
  - Output Analysis
- PROMODEL
- Advanced concepts in simulation
  - Variance Reduction Methods in Simulation
  - Duplicating Randomness and Antithetic Variables
  - Comparison and evaluation of Alternative System Designs
  - Verification and Validation of Simulation Models