

# CPE 619

## Modeling and Analysis of Computer and Communication Systems

### Fall 2009

- Instructor:** Dr. Aleksandar Milenković                      Email: [milenka@ece.uah.edu](mailto:milenka@ece.uah.edu)  
Office: 217-L    Phone: (256) 824 6830
- Time and Place:** Lecture: MW 3:55–5:15 PM, EB 240
- Course Web Page:** <http://www.ece.uah.edu/~milenka/cpe619-09F>
- Office Hours:** MW: 1:00-2:00 PM or by appointment
- Textbook:** Raj Jain, The Art of Computer Systems Performance Analysis: Techniques, Experimental Design, Measurement, Simulation and Modeling, John Wiley & Sons, Inc., New York, NY, 1991. ISBN: 0-471-50336-3.
- Prerequisites:** MA 585 or EE 500
- Course Description:** The course introduces basic concepts of performance evaluation and analytical modeling of modern computer systems and networks. The topics include: measurement techniques, monitoring tools, statistical analysis, simulation, analytic models, Queuing theory, benchmarks, and performance evaluation problems. By the end of this course students are well-prepared with theoretical and practical knowledge for experimental design, measurement, simulation, and modeling of modern computer systems.
- Tentative Schedule:**
1. Overview of Performance Evaluation  
Introduction, Common Mistakes, Selection of Techniques and Metrics
  2. Measurement Techniques and Tools  
Workloads: Selection and Evaluation  
Monitors
  3. Probability and Statistics  
Summarizing Measured Data  
Comparing Systems  
Simple Linear Regression Models
  4. Experimental Design and Analysis
  5. Simulation
  6. Queuing Models
- Grading Policy:**
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|---------------|-----|
| 1. Homeworks  | 20% |
| 2. Midterm    | 25% |
| 3. Project    | 25% |
| 4. Final Exam | 25% |
| 5. Discretion | 5%  |
- Preliminary Project Info:** Students will undertake a major computing system measurement, simulation, or analysis project of their own choosing with the approval of the instructor. The projects will be done in groups of 2 students.
- Tentative Schedule of Important Class Dates**
- Midterm Exam – October 12, 2009 (Monday) @ 3:55 – 5:15  
Project Proposals – September 21, 2009 (Monday) @ 3:55  
Mid Project Review –October 21, 2009 (Wednesday) @ 3:55  
Final Project Due – December 07, 2009 (Monday) @ 3 PM  
Final Exam – December 07, 2009 (Monday) @ (3:00 PM – 5:30 PM)

**Academic Policy:**

**Academic Honesty.** Your written assignments and examinations must be your own work. Academic Misconduct will not be tolerated. To insure that you are aware of what is considered academic misconduct, you should review carefully the definition and examples provided in Article III. Code of Student Conduct, Student Handbook, p. 93. If you have questions in this regard, please contact me without delay.

**Use of Prior Work.** You may not submit in fulfillment of requirements in this course any work submitted, presented, or used by you in any other course.

**Consent to Use of Turnitin.com.** UAH is committed to the fundamental values of preserving academic honesty as defined in the Student Handbook (7.III.A, Code of Student Conduct). The instructor reserves the right to utilize electronic means to help prevent plagiarism. Students agree that by taking this course all assignments are subject to submission for textual similarity review to Turnitin.com. Assignments submitted to Turnitin.com will be included as source documents in Turnitin.com's restricted access database solely for the purpose of detecting plagiarism in such documents. The terms that apply to the University's use of the Turnitin.com service, as well as additional information about the company, are described at [www.uah.edu/library/turnitin](http://www.uah.edu/library/turnitin).

**Classroom Conduct.** All students in the class must treat others with civility and respect and conduct themselves during class sessions in a way that does not unreasonably interfere with the opportunity of other students to learn. Failure to comply with this requirement may result in points being deducted from a student's final numerical average, up to a maximum of 15 points.

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