1 General Objectives

As computer and communications systems have grown in complexity it has become increasingly necessary to use both analytic and simulation modeling techniques to predict performance and aid in the systems design process. This course focuses on techniques necessary for both these tasks.

Analytic (deterministic and stochastic) and discrete event simulation modeling techniques are studied. The basics of stochastic processes are reviewed and discrete and continuous time Markov models are studied. Single server queueing models and queueing network models are developed and used in examining systems performance (e.g., throughput, utilization, response time). These performance issues are also investigated using discrete event simulation (DES) techniques.

A large part of the course involves applying the techniques developed to problems in computer and communications systems analysis. A project involving developing a DES queuing network tool will be undertaken.

2 Faculty: Prof. Mark Franklin

3 Prerequisites: EE/CS 260, CS 101,102 or equiv. & C level programming & some probability

4 Texts
- Papers: Selected papers from the literature will also be required reading.

5 Homeworks, Exams, etc.

There will be roughly six homeworks during the semester, one or two exams, and a group project.

6 Graders & Consultant
- Praveen Krishnamurthy: praveen@crc.wustl.edu
- Praveen’s consulting hours: Wed 11:00, Bryan Hall 405

7 Time & Place
- Mon, Wed 2:30 - 4:00, Whitaker 216
8 Course Webpage

- http://www.cse.wustl.edu/~jbf/cse567.d/cse567.html