Boston University, College of Engineering
ENG ME/SE/EC 725: Queueing Systems

Course Information: Spring 2008

Meeting Details:
Tuesday and Thursday 4:00 - 6:00 pm
Room 105, 15 St. Mary’s Street

Instructor:
Professor Perkins
Office: 15 St. Mary’s Street, Room 146
Phone: (617) 353–4991
Email: perkins@bu.edu
FAX: (617) 353–5548

Course Website:
http://people.bu.edu/perkins/SE725

Problem Set Grader:
TBD

Office Hours:
Tuesday afternoon (email me to confirm) and by appointment

Textbook:
Leonard Kleinrock, Queueing Systems, Volume 1: Theory.

Problem Sets:
Problem sets will be 50% of course grade. Assigned approximately bi-weekly.

Exam:
There will be a take-home midterm worth 20% of course grade. Date to be determined.

Semester Project:
There will be an end-of-semester project worth 20% of course grade. Date to be determined.

Attendance and Participation:
Attendance/Participation in class will be 10% of course grade.
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Course Topics: Spring 2008  

- Introduction (1 lecture)  
- Markovian and Other Stochastic Processes (2 lectures)  
- Markovian Queueing Theory (6 lectures)  
  Single-server systems; open queueing networks; closed queueing networks; networks with finite buffers  
- Renewal Theory and Applications (2 lectures)  
- Non-Markovian Queueing Theory (4 lectures)  
  M/G/1 queue; G/M/1 queue; GI/G/1 queue  
- Applications of Queueing Systems (3 lectures)  
- Numerical Techniques for Queueing Systems (3 lectures)  
  Convolution Algorithm; Mean Value Analysis; Decomposition methods (Norton’s theorem)  
- Approximate Models of Queueing Networks (2 lectures)  
  Heavy traffic model; Light traffic model  
- Simulation of Queueing Systems (1 lectures)  
- Dynamic Control and Optimization of Queueing Systems (3 lectures)