EEL6507: Queueing Theory and Data Communications

Instructor: Professor Yuguang "Michael" Fang

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Class time:

Classroom:

Office Hours:

Assistant:

Textbook: *Data Networks*, 2nd Edition, D. Bertsekas and R. Gallager, Prentice-Hall, 1992.

References: 1. *Queueing Systems I* by L. Kleinrock, John Wiley & Sons, 1975. 2. *Telecommunications Networks: Protocols Modeling and Analysis* by Mischa Schwartz, Addison-Wesley, 1987;

Syllabus:

1 . Introduction to communications networks

2 . Probability basics

3 . Markov chain theory

4 . Queueing model basics and Little's law

5 . M/M/1 and its variants

6 . M/G/1, G/M/1 and priority queues

7 . Midterm

8 . Time-reversibility and multidimensional queueing models

9 . Queueing networks: Jackson's theorem and product form

10 . Queueing networks: Generalizations of Jackson's theorem

11 . Multiple access control and ARQ

12 . Matrix geometric approach

Grading: Grades are based 20% on homeworks, 35% on midterm and 45% on final. Overall average $> 90\%$ is guaranteed an A, $> 80\%$ is guaranteed a B, etc. No late homework is accepted.

Honor code: All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a student at the University of Florida and to be honest in all work submitted and exams taken in this class and all others.