Performance Analysis of Computer Networks (Winter, 2005)

CRN	20252
Course Number	ECE-C632
Section Number	501
Credits	3.0
Time	Thursdays 6pm - 8:50pm
Room	TBA
Instructor	Steven Weber
Restrictions	ECE-C631 w/ minimum grade of C
Department	Electrical and Computer Engineering

Description
Covers probability theory and its applications to networks, random variable and random processes; Markov chains, multi- dimensional Markov chains; $M/M/1$, $M/M/m$, $M/M/m/m$, $M/G/1$ and $G/G/1$ queueing systems and their applications in computer networks; analysis of networks of queues: Kleinrock Independence Approximation; Time-reversibility and Burke's theorem; Jackson's theorem; the phenomenon of long-range dependence and its implications in network design and traffic engineering.

Textbook
Primary text (required)

Title	Communication Networking : An Analytical Approach
Authors	Anurag Kumar, D. Janjunath, and Joy Kuri
Publisher	Morgan Kaufmann
ISBN	0124287514
Edition	1^{st}

Grading

Homework (one problem set per week)	30%
Midterm Exam (comprehensive)	30%
Final Exam (comprehensive)	40%

Homework and Makeup Exams
Makeup exams are only available if you are unable to attend due to a severe health problem or a death in your family. Homeworks are due at the **beginning** of class, one week following the class in which they were assigned. Late homeworks will not be accepted.

Students with Disabilities
In accordance with Drexel University policy, any student with a documented disability who needs accommodations is encouraged to contact the Office of Disability Services (215-895-1401) or speak directly to the professor for further information about this office. Students must register with the Office of Disability Services and receive an Accommodation Verification Form prior to receiving accommodations. Contact with the Office of Disability Services is strictly confidential. Please make contact as early in the term as possible in order to receive timely accommodations.

Mandatory Registration

All students sitting in the classroom during the class **must** be registered for the course and on the class list supplied to the instructor for the second class. Any student not on the list at that time will be asked to leave until proper registration is obtained.

Academic Dishonesty
The Drexel University policy on academic dishonesty may be found at
`http://www.drexel.edu/studentlife/studenthandbook2002/judicial/acadhon.html` and will be strictly enforced. **Plagiarism, fabrication, and cheating will, at the discretion of the instructor, constitute grounds for failure of the course.**

Course Calendar
Please read the assigned materials for the lecture *before* the class in which it is covered.

Class	Date	Material	Homework
1	1/6	★ Chapter 4: *Stream sessions: deterministic network analysis* Sections §4.1 – §4.2	★ HW1 assigned
2	1/13	★ Chapter 4: *Stream sessions: deterministic network analysis* Sections §4.3 – §4.6	★ HW1 due ★ HW2 assigned
3	1/20	★ Chapter 5: *Stream sessions: stochastic network analysis* Sections §5.1 – §5.5	★ HW2 due ★ HW3 assigned
4	1/27	★ Chapter 5: *Stream sessions: stochastic network analysis* Section §5.6	★ HW3 due
5	2/3	Midterm Exam	★ HW4 assigned
6	2/10	★ Chapter 5: *Stream sessions: stochastic network analysis* Sections §5.7 – §5.9	★ HW4 due ★ HW5 assigned
7	2/17	★ Chapter 5: *Stream sessions: stochastic network analysis* Sections §5.10 – §5.11	★ HW5 due ★ HW6 assigned
8	2/24	★ Chapter 6: *Circuit multiplexed networks* Sections §6.1 – §6.3	★ HW6 due ★ HW7 assigned
9	3/3	★ Chapter 6: *Circuit multiplexed networks* Sections §6.4 – §6.7	★ HW7 due ★ HW8 assigned
10	3/10	★ Chapter 6: *Circuit multiplexed networks* Sections §6.8 – §6.9	★ HW8 due
11	3/17	Final Exam	