

## Advanced Topics In Computer Networking (Spring, 2004)

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CRN	30322
Course Number	ECE-C632
Section Number	501
Credits	3.0
Time	Thursdays 6pm - 8:50pm
Room	LeBow 241
Instructor	Steven Weber
Restrictions	ECE-C632
Department	Electrical and Computer Engineering

### Description

Perspectives in the areas of switch/router architectures, scheduling for best-effort and guaranteed services, QoS mechanisms and architectures, web protocols and applications, network interface design, optical networking, and network economics. The course also includes a research project in computer networking involving literature survey, critical analysis, and finally, an original and novel research contribution.

### Textbook (required)

Title	Fundamentals of Queueing Networks
Authors	Hong Chen and David D. Yao
Publisher	Springer
ISBN	0387951660
Edition	1 <sup>st</sup>

We will cover Chapters 4-12, one chapter each of the 9 non-exam weeks of the quarter. In addition to the material in the text, a paper from the networking literature will be assigned each week.

### Grading

Homework (one problem set per week)	30%
Midterm Exam (Lectures 1-4)	30%
Final Exam (Lectures 5-9)	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**

**Important:** Please read the material for the lecture **before** the class in which it is covered.

Class #	Date	Subject	Text Chapters
1	Thursday, April 1	Kelly Networks	Chen & Yao, Chapter 4
2	Thursday, April 8	Technical Desiderata	Chen & Yao, Chapter 5
3	Thursday, April 15	Single-Station Queues	Chen & Yao, Chapter 6
4	Thursday, April 22	Generalized Jackson Networks	Chen & Yao, Chapter 7
5	Thursday, April 29	<b>Midterm Exam</b>	Chen & Yao, Chapters 4–7
6	Thursday, May 6	A Two-Station Multiclass Network	Chen & Yao, Chapter 8
7	Thursday, May 13	Feedforward Networks	Chen & Yao, Chapter 9
8	Thursday, May 20	Brownian Approximations	Chen & Yao, Chapter 10
9	Thursday, May 27	Conservation Laws	Chen & Yao, Chapter 11
10	Thursday, June 3	Scheduling of Fluid Networks	Chen & Yao, Chapter 12
11	Thursday, June 10	<b>Final Exam</b>	Chen & Yao, Chapters 8–12