

# CSCE 619: Networks and Distributed Processing

## Spring 2017 Syllabus

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### 1. Basics

Instructor: Dmitri Loguinov (dmitri@cse.tamu.edu, 979-845-0512)  
Class hours: TR 12:45-2:00pm, HRBB 126  
Office hours: TR 5:10-6:10 in HRBB 515C (or by appointment)  
Optional book: R.W. Wolff, "Stochastic Modeling and the Theory of Queues," 1989.  
Website: <http://irl.cse.tamu.edu/courses/619/>  
Q&A forum: <http://piazza.com/tamu/spring2017/csce619>

Prerequisites: you should be familiar with calculus, algebra, graphs, matrices, basic differential equations, and some programming language.

### 2. Class Description

This course is a collection of theoretical and applied material that allows one to understand and model computer networks and related systems. Network modeling examines the behavior and properties of probabilistic events that arise in various components (e.g., routers, users, flows, links, network topologies, protocols, peer-to-peer networks) that comprise the Internet. We will cover the following topics:

Week	Topic	Source
1-3	Introduction and review of probability	Chapter 1 in Wolff
4-5	Renewal process theory	Chapter 2 in Wolff
6-7	Markov chains, queuing theory	Chapter 3 in Wolff
8	<b>Midterm preparation + midterm</b>	
9	Spring break, no class	
10-12	Random graph theory, Internet topology models	Papers
12-14	Congestion control, protocols for high-speed networks	Papers
15	<b>Final preparation + final</b>	

Team work: Prohibited.

Exams: Two exams and three quizzes based on lectures and lessons learned in the homework. Exams are in-class, closed-book, and essay-style.

Activity	Percentage
Homework (6)	30%
Quizzes (3)	30%
Midterm	20%
Final	20%

Final grade: 80-100% (A), 70-79% (B), 60-69% (C), 50-59% (D), 0-49% (F).

### 3. Homework

All homework must be accompanied by a report written in Latex using the IEEEtran class. If the assignment calls for an implementation, you should also attach your C/C++ code. The report must document your findings, simulation results, solution to the problem, and any additional insights you find relevant. You should use the default 10pt fonts and the journal IEEE format for your submissions. See the sample report on the course website.

For charts, the best option is to use Matlab as it allows exporting figures directly to EPS. However, Excel can be used as well. To create EPS figures from Microsoft Office, print your objects to a postscript printer (e.g., Xerox Phaser 6120 PS set to print to file; open Printing Preferences, click on Advanced, and selected *Encapsulated Postscript (EPS)* under Postscript Output Option). The output file should be passed through gsview to recompute the bounding box (File→PS to EPS→ Automatically Calculate Bounding Box).

You can get a Latex compiler from <http://miktex.org>, an editor from <http://www.winedt.com>, a PS/PDF interpreter from <http://ghostscript.com/download/>, and a PS/PDF viewer from <http://pages.cs.wisc.edu/~ghost/gsview/>. General Latex syntax and commands are available in many tutorials, e.g., <http://www.cs.cornell.edu/Info/Misc/LaTeX-Tutorial/LaTeX-Home.html>.

### 4. Academic Honesty

This course assumes *independent* work on each assignment. You may not copy or submit *any part* of other students' work, material found in books or publications, or text from the Internet, unless explicitly allowed by the instructor. If such submission is allowed, the copied parts must be clearly marked and properly cited. If unsure, check with the instructor before submitting assignments. **Any academic dishonesty, including cheating and plagiarism, will result in an F\* for the course and may lead to expulsion from the university.**

For more information, see Academic Rule 20 at <http://student-rules.tamu.edu/>.

AGGIE HONOR CODE:

**“An Aggie does not lie, cheat, or steal or tolerate those who do.”**

“Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.”

### 5. Americans with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Cain Hall or call 845-1637.