CS 42200 Home Page - Spring 2019

	Instructor	Graduate Teaching Assistant
Name	Adib Rastegarnia, He Wang	Runzhi Yang,

Time/Location

Time: 11:30 am - 12:20 pm MWF
Location: Lawson Computer Science Bldg 1106

Purpose

This is an extensive and thorough senior-level course in computer networking and internetworking; it covers all aspects of data networking. The course material has been divided into eight modules:

1. Course introduction: syllabus; instructor; TAs; topics; requirements; expectations.
2. The Network Edge, Core, and Access Networks; Physical Media; Protocol Layers and Their Service Models;The structure of the Internet.
3. Principles of Application-Layer Protocols; Network programming with a simplified API; Socket Programming; The World Wide Web: HTTP,File Transfer: FTP, Electronic Mail in the Internet; The Internet's Directory Service: DNS; Peer-peer systems
4. Data communications: low-level details of media, signals, and transmission of bits; concepts of time division and frequency division multiplexing; encoding; modulation; bandwidth, throughput, and noise.
5. The Data Link Layer: Introduction, Services ; Error Detection and Correction; Multiple Access Protocols and LANs;LAN Addresses and ARP;Ethernet;VLANs
6. Internetworking: Internet architecture; IPv4 and IPv6; IP addressing; address binding; datagram encapsulation and fragmentation; datagram forwarding; support protocols; transport protocols UDP and TCP; retransmission; protocol ports; ICMP and error handling. Routing algorithms and Internet routing protocols.
7. Transport-Layer Services and Principles; Multiplexing and Demultiplexing Applications; Connectionless Transport: UDP; Principles of Reliable of Data Transfer;Connection Oriented Transport: TCP; Principles of Congestion Control; TCP Congestion Control
8. Cross-layer technologies: network performance and performance measures; QoS; multimedia and IP telephony (VoIP); network security; traffic engineering and MPLS; network management.
9. Emerging topics: Software Defined Networking; SDN architecture and controllers; OpenFlow; The Internet of Things; wireless mesh networks.

Note: the course will be tailored to the class; the choice of topics within each module and the depth in which they are covered will depend on the students' needs

Textbook

- Comer, Computer Networks And Internets, sixth edition, Prentice-Hall, 2014.
- Computer Networking - A Top Down Approach, James F. Kurose and Keith W. Ross.

Grading Policy

Students will solve homework problems, and take in-class exams and quizzes. In addition, each student will be given a lab exercise once per week. Labs (PSOs) will provide hands-on experience with networking equipment, and give students an opportunity to write applications that communicate over the Internet as well as analyze packets. A grade will be assigned as follows:

- 45% for programming assignments
- 40% Examinations (midterm and final)
- 5% for quizzes.
- 10% Homeworks
- 2% bonus for class participation (the bonus will be applied after the letter cut-off lines are decided)

Switching PSO Sections

Because equipment in the lab is limited, you may not switch PSO sections unless you find some one in another section who is willing to swap with you.

Access To Course Materials

- Web page: http://courses.cs.purdue.edu/cs42200:spring19:start
- Grades will be posted on blackboard: http://mycourses.purdue.edu/
- Copies of slides used in class will be posted on blackboard.
- TA Note: https://www.cs.purdue.edu/homes/arastega/ta-notes.html
- Syllabus

Late Policy

Each student has **three late days** that can be applied to programming assignments during the semester (all on one assignment or spread out across multiple assignments). Otherwise, there is no partial credit for late assignments. The only exceptions will be for documented emergencies.

Changes For Emergencies

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to change that may be necessitated by a revised semester calendar or other circumstances. If an emergency occurs, you can consult the CS web page for details.

Email Lists

- TAs: **cs422-ta@cs.purdue.edu**
- Class: **spring-2019-cs-42200-le1@lists.purdue.edu**

Academic Integrity

You are expected to read Purdue's guide to academic integrity:

http://www.purdue.edu/purdue/about/integrity_statement.html

Behavior consistent with cheating, copying, and academic dishonesty is not tolerated. Depending on the severity, such behavior may result in a zero score on an assignment or exam, a failing grade for the class, or even expulsion. Purdue prohibits dishonesty in connection with any University activity. Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty. (Part 5, Section III-B-2- a, University Regulations). Furthermore, the University Senate has stipulated that the commitment of acts of cheating, lying, and deceit in any of their diverse forms (such as the use of substitutes or taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest. (University Senate Document 7218, December 15, 1972).

Students with Disabilities

Purdue University is required to respond to the needs of the students with disabilities as outlined in both the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 through the provision of auxiliary aids and services that allow a student with a disability to access and participate fully in the programs, services, and activities at Purdue University. If you have a disability that requires special academic accommodation, please make an appointment to speak with the instructor within the first three (3) weeks of the semester in order to discuss any adjustments. It is the students responsibility to notify the Disability Resource Center (http://www.purdue.edu/drc) of an impairment/condition that may require accommodations and/or classroom modifications. We cannot arrange special accommodations without confirmation from the Disability Resource Center.

Attendance

Students are expected to be present for every meeting of the classes in which they are enrolled. Only the instructor can excuse a student from a course requirement or responsibility. When conflicts or absences can be anticipated, such as for many University sponsored activities and religious observations, the student should inform the instructor of the situation as far in advance as possible and plan to make up for missed work.