CSE 422: Computer Networks

Course Information

- Credit units: 3
- Instructor: Dr. Huacheng Zeng <hzeng@msu.edu> (please use [CSE422] as the prefix of email subject); office: EB3144
- Instruction mode: Online Synchronous
- Date frame: 9/1 – 12/12
- Lecture time: Tue & Thu, 12:40 PM – 2:00 PM
- TA: Dave Ackley <ackleyd1@msu.edu> and Shichen Zhang <sczhang@msu.edu>

Online Links

- **Lecture Zoom Meeting (Tue & Thu, 12:40 PM – 2:00 PM):** https://msu.zoom.us/j/96339131477 (no password)
- **Office hours**
  - **Homework and Project Questions**: Dave Ackley: Friday 1:00pm – 3:00pm, or by appointment via email, https://msu.zoom.us/j/8457933271 (no password)
  - **Homework and Project Questions**: Shichen Zhang: Monday 10:00am – 12:00pm, or by appointment via email, https://msu.zoom.us/j/99959351297, passcode: 717495
  - **General Class Questions**: Dr. Zeng, Tuesday & Thursday, 2:00pm – 2:30pm, or by appointment via email https://msu.zoom.us/j/96339131477 (no password)
- **Homework and project submission:** CSE File Handin System https://handin.cse.msu.edu/ (subject to change if technical issues occur)
- *Note: Email Dr. Zeng if the above link does not work.*

Textbook

- *Computer Networking: A Top-Down Approach* (8th Ed.), by James Kurose and Keith Ross, Pearson.
- Textbook website: https://gaia.cs.umass.edu/kurose_ross/online_lectures.htm

Online Resource

- D2L website: https://d2l.msu.edu/d2l/home/1383925
- Supplementary course website: www.cse.msu.edu/~hzeng/courses/cse422.html   [username: cse422 password: 2021cse422]

Course Description

Computer networks are complex. The Internet is the largest engineered system ever built by humankind in many ways! Computer networks involve many concepts, protocols, and technologies

that are intricately interweaved together. This course aims to teach students the concepts of computer networks at different layers. It will mainly focus on the architecture and protocols of the Internet, hoping students to see the big picture of how all components work together to underpin the modern networking systems. The materials will be organized following a top-to-down approach, from the application layers to the physical layers. Tentatively, the course will cover the following topics.

- Introduction to Computer Networks
- The Application Layer
- The Transport Layer
- The Network Layer: the Data Plane
- The Network Layer: the Control Plane
- The Link Layer
- Wireless and Mobile Networks
- Network Security [if time permits]

Assignments

- Homework 30%
- Projects (Wireshark & Python) 30%
- Midterm 18% (Thursday Oct 28, in class)
- Final 22% (Thu 12/16/2021, 12:45pm)

Assignment Submission

- Homework and project reports should be written clearly and neatly. Grading may take into account homework/report format, organization, and presentation. Points may be subtracted if homework and project reports are poorly written.
- Late submissions will not be accepted in general.

Grading

- Grade: The total points of all assignments will be linearly scaled to 100, which will then be mapped to GPA under the following rubric.

Points	90-100	85-90	80-85	75-80	70-75	65-70	60-65	0-60
GPA	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.0

- The instructor may or may not scale the final grade.

- If your final grade is borderline, instructor may, at his own discretion based on your class participation and performance, boost your grade up one step (one-half letter grade or 0.5 on a 4-point scale).

- Incomplete Grades: According to university policy, the grade of incomplete is reserved for exceptional cases, where an unanticipated event beyond one's control interferes with a student's completion of course requirements.

Tentative Schedule (subject to change)

- Chapter 1: Computer Networks and the Internet
- Chapter 2: The Application Layer
- Chapter 3: The Transport Layer
- Chapter 4: The Network Layer: the Data Plane
- Chapter 5: The Network Layer: the Control Plane
- Chapter 6: The Link Layer
- Chapter 7: Wireless and Mobile Networks
- Chapter 8: Network Security [if time permits]

The Spartan Code of Honor Academic Pledge

As a Spartan, I will strive to uphold values of the highest ethical standard. I will practice honesty in my work, foster honesty in my peers, and take pride in knowing that honor in ownership is worth more than grades. I will carry these values beyond my time as a student at Michigan State University, continuing the endeavor to build personal integrity in all that I do.

Collaboration On Coding Assignments Plagiarism (unsourced use of other's intellectual property) is not allowed. However, citing and using other's works is generally fine (please ask if uncertain) as long as the material wasn't made specifically for solving assignments for this class. Additionally, the use of material from previous semesters and code from other students in the class are instances of academic dishonesty. Intellectual (non-code) collaboration with other students in the class is allowed, but each student should write (and not share) their own code. If a student submits code that they don't understand, such is also an act of academic dishonesty.

Academic Dishonesty

Because a goal of this course is to teach professionalism, any academic dishonesty will be viewed as evidence that this goal has not been achieved, and will be grounds for receiving a final grade of 0.0. Examples of academic dishonesty include (but are not limited to):

- Copying another student's code or exam answers
- Using code implemented by someone else intended to solve this class's assignments (i.e., don't get someone else to do your assignment for you!).
- Using code independently implemented by someone else without attributing credit (i.e., you can use tools, libraries, or code snippets from the web, but only with proper citation.)
- Writing code that deceptively passes the test cases, but doesn't solve the problem given. In other words, abusing automatic grader mechanisms to gain unearned points.
- Using websites and sources, whose purpose is to provide assignment solutions (e.g. using sites such as Chegg.com for any purpose regarding this class).
- Distributing course content without instructor permission.
- Submitting a solution that you don't understand / can't explain to an instructor.
- Providing false information to the instructor about matters related to the course.
- Facilitating another student in any of these activities. See Academic Dishonesty and Attribution for more details. Depending on circumstances, we may require a code audit of

your work, where you meet with an instructor and explain how your code works and how you came up with it.

Grief Absence Policy

If there occur unfortunate circumstances that would lead you to have unexpected absences, MSU has a Grief Absence Policy. You need to contact the Associate Dean, and we will make every effort to aid you in continuing the class after we receive confirmation from the administration.

Regrades

Requests for regrading can go in either direction; we are often generous when we first grade something, so please be sure that we did make a mistake before you submit your request. On the other hand, our goal is for you to understand the course material, so we will always be willing to explain to you any portion that you are stuck on. All requests for regrades must come within one week of the return of the graded item. Thereafter, no requests will be considered.

Resource Center for Persons with Disabilities

Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD. Once your eligibility for an accommodation has been determined, you will be issued a verified individual services accommodation (VISA) form. Please present this form to me at the start of the term and/or two weeks prior to the accommodation date (exam, project, etc.). Requests received after this date will be honored whenever possible.

General Note

The goal of this class is for you to learn. If you find that anything is coming in your way of that goal, please talk with us about it. We plan to keep the class flexible to the learning styles that seem to work best for the students, so feedback is always appreciated.