CSCE 416-001: Introduction to Computer Networks
Spring 2025

Bulletin Description
(3 Credits) Concepts and components of computer networks and the Internet; network applications; network protocol stack.

Instructor and Teaching Assistant

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Office hours:	Mon, Wed, Fri 1:00 pm – 2:00 pm or by appointment

Class meeting days, times, and location

Weekly lecture:	M W 2:20 pm – 3:35 pm, Innovation Center, Rm 1400

Final exam day and time
Monday, May 5, 12:30 pm in Innovation Center, Rm 1400

Course Description
This course introduces fundamental concepts in the design and implementation of computer networks, their protocols, and applications. Topics to be covered include layered network architectures, applications, network programming interfaces (e.g., sockets), transport, physical media, data link protocols, local area networks, and network routing. Examples will be drawn primarily from the Internet (e.g., TCP, UDP, and IP) protocol suite.

Prerequisites
CSCE 146

Learning Outcomes
Upon completing this course, students should be able to:

- Demonstrate an understanding of the elements of a protocol and the concept of layering.
- Describe how to control access to a shared channel by multiple stations
- Explain the concepts of error control, flow control, and congestion control.
- Illustrate how a packet is routed over the Internet.
- Design, build, and describe a client-server application.

Required Textbook
James F. Kurose and Keith R. Ross, Computer Networking: A Top-Down Approach (8th Edition). Pearson 2021.

Technology, Special Software, or Other Product(s)
The programming assignments could be written in either JAVA, C++, or Python. Some assignments may require a word processor such as Microsoft Word, OpenOffice Writer, or Google Docs.

This course requires regular, reliable computer and internet access. Assignments are to be developed on a computer and submitted via the Blackboard by their designated date and time. Also, quizzes need to be taken on a computer via the Blackboard. The college recommendations for a computer are found here: https://www.sc.edu/study/colleges_schools/engineering_and_computing/my_cec/admitted_student_resources/computer_recommendations/index.php

If you have tech-related questions or need help with the software, please contact the Division of Information technology (DoIT) at https://sc.edu/about/offices_and_divisions/division_of_information_technology/index.php

Coursework and Assessment

- **30% Quizzes and Assignments**:
  - There will be 3 quizzes; each quiz will account for 5% of the final grade. The quizzes will follow a multiple-choice question and answer format and will cover topics covered in the class so far.
  - There will be 4 programming assignments (including protocol debugging); each assignment will account for 5% of the final grade. The detailed assignment instructions will be posted on Blackboard. All the assignments must be done individually. Assignments must be submitted through Blackboard.

  The best 6 of the above 7 Quizzes/Assignments will count towards the final grade. The points from lowest-score quiz/assignment will count as **extra credit** towards the final grade.

- **20% Midterm Exam 1**: The first midterm exam will cover topics discussed in the class till then.

- **20% Midterm Exam 2**: The second midterm exam will cover topics discussed in the class till then.

- **30% Final Exam**: The final exam will be a comprehensive exam covering all the topics discussed during the semester.

Quizzes will be held online via Blackboard. Assignments are to be submitted via the Blackboard. Midterm and final exams will be held in person in the class.

Your final grade is based on the total points you have earned over the course. Therefore, individual assignments are not curved, and all points for all assignments are weighted equally. The numeric scores are translated to letter grades as follows:

[90-100] = A; [87-89] = B+; [80-86] = B; [77-79] = C+; [70-76] = C; [67-69] = D+; [60-66] = D; [0-59] = F

Important Note Regarding Grade Appeals
Grade appeals for any assessment must be requested (via email to me) within three (3) days of my posting the assignment grade to Blackboard. While I will always answer your questions on the grading of an assessment, your score on the assignment will not be changed unless you request a grade review during the 3-day grade appeal time period.

Attendance Policy
Students are expected to regularly attend the class and keep up with the course materials.

Student Disability Resource Center
The University of South Carolina is committed to providing access to programs and services for qualified students with disabilities. If you are a student with a disability and require an accommodation to participate and complete requirements for this class, then notify me immediately and contact the Office of Student Disability Services (http://www.sa.sc.edu/sds, 1523 Greene Street, LeConte College Room 112A, 803-777-6142, sasds@mailbox.sc.edu) for verification of eligibility and determination of specific accommodations. In addition, please provide me the required accommodation letter from the Office of Student Disability Services. All course materials are available in alternative format upon request.

Academic Integrity
The faculty takes violations of the University Honor Code (http://www.sc.edu/policies/ppm/staf625.pdf) seriously. Students are encouraged to review the Honor Code and to understand the consequences of any action that is proven to be a violation of the code.

You are expected to practice the highest possible standards of academic integrity. Any deviation from this expectation will result in a minimum academic penalty of your failing the assignment. In addition, an honor code violation will be subject to the sanctions described in the USC Community Handbook and Policy Guide. Violations of the University Honor Code include, but are not limited to, improper citation of sources, using another student's work, and any other form of academic misrepresentation. For more information, please see the University Honor Code.

In reference to this course, students are expected to do their own work when assignments require individual work. For example, students may not copy the work of others, either manually or electronically, under these conditions. Further, students who allow their work to be copied by others risk violations of the University Honor Code. All violations of the University Honor Code or this Academic Integrity Statement will be reported to the Office of Student Conduct and Academic Integrity.

Remember that the first tenet of the Carolinian Creed is, "I will practice personal and academic integrity."