



蘇州大學  
Soochow University

# CS 351 Networking Project

Winter 2024

**Course Credits:** 4

**Contact Hours:** 56 hours

**Instructor:** TBA

**Email:**TBA

## **COURSE OBJECTIVES**

This course is designed to provide students with a comprehensive understanding of the concepts and practical skills in the field of internetworking. It begins with a thorough exploration of internetworking theory, covering topics such as network protocols, routing, switching, and security. Building upon this foundation, students will delve into the practical aspects of internetworking, focusing on two distinct project categories.

Upon Completion of this Course, students will be able to:

1. Gain a solid understanding of fundamental internetworking concepts, including OSI model layers, TCP/IP protocols, subnetting, and routing;
2. Develop the ability to design and implement scalable and efficient network architectures that meet specific organizational requirements;
3. Develop skills in diagnosing and troubleshooting network issues, using tools and techniques for identifying and resolving problems in a timely manner;
4. Gain proficiency in network monitoring tools and management platforms for real-time monitoring, performance analysis, and capacity planning.

## **PREREQUISITES**

CS 303 Information Technology Project Management I

## **GRADING**

Grades will be determined by accumulating points, with 100 points being the maximum, as follows:



ITEM	POINTS
2 Quizzes	20 Points
2 Exercises	20 Points
Midterm	20 Points
Group Project	10 Points
Final Exam	30 Points
Total	100 Points

Late submissions will be graded at the end of the course. Grades will be assigned according to the following rule:

$$A \geq 90 > B \geq 80 > C \geq 70 > D \geq 60 > F.$$

We reserve the right to make adjustments to the overall grading policy.

## COURSE MATERIALS

### Required Texts:

1. Douglas E Comer, *Internetworking with TCP/IP*, 6th Edition, Pearson, 2014.
2. James F. Kurose; Keith Ross, *Computer Networking*, 8th Edition, Pearson, 2021.

### Recommended (Optional) Texts or Other Materials:

None

## COURSE TOPICS

MODULE	TASKS
Module 1	<b>Topics:</b> Topic 1: Computer Networks and the Internet Topic 2: Network Protocols Topic 3: The Network Edge Topic 4: The Motivation For Internetworking <b>Assessments:</b> Exercise#1



Module 2	<b>Topics:</b> Topic 5: The TCP/IP Internet Topic 6: Application Level Internet Services Topic 7: Internet Request For Comments (RFCs) Topic 8: Internet Growth <b>Assessments:</b> Exercise#2
Module 3	<b>Topics:</b> Topic 9: Two Approaches To Network Communication Topic 10: WAN And LAN Topic 11: Internetworking Concept And Architectural Model Topic 12: Application-Level Interconnection <b>Assessments:</b> Quiz#1
Module 4	<b>Topics:</b> Topic 13: Network-Level Interconnection Topic 14: Interconnection Of Multiple Networks With IP Routers Topic 15: The Conceptual Layers Of Protocol Software Topic 16: The TCP/IP 5-Layer Reference Model <b>Assessments:</b> Midterm Group Project
Module 5	<b>Topics:</b> Topic 17: Mapping Internet Addresses To Physical Addresses (ARP) Topic 18: Internet Protocol: Connectionless Datagram Delivery (IPv4, IPv6) Topic 19: Network Management (SNMP) Topic 20: Software Defined Networking (SDN, OpenFlow) <b>Assessments:</b> Quiz#2 Final Exam

## ATTENDANCE

1) Class attendance is required. Missing classes without permission will lead to decrease in overall grade.

Missing less than two classes: no penalty.

Missing more than two classes: 7% will be taken off from the overall grade.

If the instructor reports a student's frequent missing of class to the Soochow University Academic Administration Office, the student might get a written warning and might be prohibited from attending final exam.



2) Participants in this course are expected to arrive in class promptly and adequately prepared. The primary objective of this course is to critically engage with the readings and the subject matter. Therefore, course participants are expected to have completed the reading prior to class and prepare thoughtful reflections/commentaries to share with fellow colleagues.

### **LEARNING REQUIREMENTS**

- 1) Late assignments are not acceptable and are subjected to grade deductions.
- 2) Assignments submitted in the wrong format will be counted as not submitted.
- 3) Failure to submit or fulfill any required course component results in failure of the class.
- 4) Make-up for midterm and final exams only with valid excuses, as defined by the University.
- 5) In order to earn a Certificate of Completion, participants must thoughtfully complete all assignments by stated deadlines and earn an average quiz score of 50% or greater.

### **TECHNOLOGY POLICY**

The use of electronic devices in class is distracting, both for the user and for the rest of the class. Only non-programmable calculators can be used in the tests and exam. Any attempts to use cell phones and other electronic communication devices will be seemed as cheating. Laptops are discouraged, unless you use them for activities DIRECTLY related to the course (eg., note taking, reading course documents).

### **ACADEMIC INTEGRITY POLICY**

Soochow University highly values the academic integrity and aims to promote the academic fairness, honesty and responsibility. Any academic dishonesty behaviors and any attempts to cheats and plagiarism will be reported to the university administration office. A written warning and the relevant penalties will be imposed. The record might be shown on the official university transcript.

### **DISABILITY ACCOMMODATION**



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Soochow University is committed to maintaining a barrier-free environment so that students with disabilities can fully access programs, courses, services, and activities at Soochow University. Students with disabilities who require accommodations for access to and/or participation in this course are welcome.

Note:

Please contact the University Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material.