CS 435: Computer Networks
Fall 2025 3 credits
MW 9:00-10:15 in MLH 310

Instructor Information

Name: S. Seth Long, Ph.D
Office: TJH 210
Email: sslong@lcsc.edu
Office Hours: Monday 1:30-3:00, Thursday 10:30-12:00
Course Website: `https://isoptera.lcsc.edu/seth/cs435`

Pre-requisite

CS311 with a C or better.

Course Description

Covers current computer network architectures, protocols, and applications. Topics include: digital networks and the Internet, network architecture, network layers, services and communication protocols, the application layer, the transport layer, the network layer, the data link layer, wireless and mobile networks, and ethical issues with digital networks. Emphasis on Internet and current communication protocols, and the engineering trade-offs of network design and implementation. Includes hands-on sockets programming coursework.

Course Learning Outcomes

At the end of the course, students should:

- Understand computer networks and the Internet
- Be able to write client/server programs
- Become more experienced writing multithreaded software and data management
- Be familiar with principles for writing UNIX software

Textbook

There is no official textbook for the course.

Communication Policy

Email is the best way to reach me, and I try to respond within 24 hours during the work week (Monday through Friday). Often I respond on weekends as well, but less consistently.

Grading

Your grade will be calculated based on the following items:

Item	Percentage of grade
Midterm Exam	20%
Final Exam	20%
2 Projects	50% total (20% for the client, 30% for the server)
Homework	10% total

Attendance will not be taken in this class except as required for fiancial aid purposes. However, all material presented during lecture is "fair game" for the midterm and final, and some of this material may not be in the book as well. Therefore I recommend that you always attend class.

I strive to return feedback on assignments within a week, however, other priorities such as providing content for class and answering student questions may override this goal.

Letter grades will be assigned in the following way:

A: 90% +
B: 80%- 90%

C: 70%- 80%
D: 60%- 70%
F: less than 60%

Use of + or - grades (such as B+ or A-) and curves will be at the instructor's discretion.

Course Assignments

Course Assignments will appear on the course website. The biggest assignment by far is the client/server project. The server is divided into three milestones, each with a deadline and associated grade. If you miss a milestone, you will still have to do the work for the next milestone.

In addition to the client/server project, there will be several smaller homework assignments. These will be assigned at least a week before they are due.

Deadlines and late work

Late work will not be accepted, except by instructor discretion. However, partial credit will be given for partially-completed work. It is better to turn in an unfinished assignment for partial credit than to not turn in something on time and receive a 0. Ask ahead of time if you have circumstances that require an extension.

Academic Dishonesty

Cheating on any assignment will result in failing the class. Some things which constitute cheating in this class are:

- Copying another student's homework
- Turning in homework created by another student
- Reading another student's answers on a test
- Sharing all or part of your completed homework with another student before the assignment is due
- Turning in code found on the Internet

Appropriate collaboration on homework involves sharing ideas with other students, but not source code! Although it is often tempting to help another student by showing them how your completed program works, this is not helpful to their learning. However, this does not mean you cannot collaborate with other students on homework. Sharing of ideas, principles, and algorithms is permitted and encouraged.

Tentative Course Schedule

Fall 2025 CS435 Tentative Schedule		
Week	**Course Content**	**Events**
Aug 18	Introduction to the Sockets API and TCP/IP	Homework 1
Aug 25	Multithreaded Servers	Homework 2
Sep 1	No class Monday, LURK Protocol and Binary Network Data	Homework 3
Sep 8	LURK Chat Server Demo	Homework 4
Sep 15	Writing a LURK bot	Server Milestone 1
Sep 22	DNS Server Demo	
Sep 29	Multithreading and Data Management	
Oct 6	Midterm and answers	Server Milestone 2
Oct 13	Client UI	
Oct 20	More on Client UI	
Oct 27	Server Presentations	Server Due
Nov 3	Using UDP	
Nov 10	Serving Multiple Clients with One Thread	
Nov 17	Demo: TBD	
Nov 24	Thanksgiving Break	
Dec 1	Class Client Testing	Client Due
Dec 8	Final Exam Wednesday, December 10, at 9:00 AM in MLH 310	

College Statement on State Law, Academic Freedom, and Course Expectations

Effective July 1, 2025, Idaho Code § 67-5909D establishes that courses "derived from or that promote" certain concepts associated with critical theory or diversity, equity, and inclusion (DEI) may be subject to additional state-level reporting and oversight. However, the statute also explicitly affirms that it does not "limit the free discussion of ideas in a classroom setting." At LC State, this provision protects our ability to foster a learning environment grounded in open inquiry, respectful dialogue, and academic integrity.

As one of Idaho's four public four-year institutions, LC State is governed by policies of the Idaho State Board of Education, including the following principles articulated in SBOE Policy III.B:

"Membership in the academic community imposes on administrators, faculty members, other institutional employees, and students an obligation to respect the dignity of others, to acknowledge the right of others to express differing opinions, and to foster and defend intellectual honesty, freedom of inquiry and instruction, and free expression on and off the campus of an institution."

In line with these principles, this course is designed to encourage your academic development through thoughtfully selected readings, activities, and assignments. You are invited to engage critically with course materials, analyze competing viewpoints, and arrive at your own reasoned conclusions. While some content may challenge your perspective, you will not be asked or required to adopt any specific ideological or political position.

As you review the course syllabus and other instructional materials, please know they have been developed to support a respectful, engaging, and rigorous learning community. If at any point you decide that this course does not align with your academic preferences or goals, you are encouraged to contact your Academic Advisor (full email: advisor@lcsc.edu) to discuss available alternatives. Be sure to consult the LC State Academic Calendar for important deadlines related to course withdrawal or schedule changes. If you are receiving scholarships or financial aid, consult with the Financial Aid Office about potential impacts on scholarships or financial aid eligibility.

If you have questions about course content, instructional approach, or academic freedom policies, please contact the Provost/VP of Academic Affairs (full email: academicaffairs@lcsc.edu). We are committed to your success and to upholding LC State's standards of academic excellence, respect, and transparency.