CSCI 4727-001 — Operating Systems Syllabus

CRN: 83716 · **Credits:** 3 · Fall 2026

Instructor and Contact Information

Instructor: Chandler Scott

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Drop-in hours: MTWR 11:00 a.m.–12:30 p.m., or by appointment.

Course Description

This course studies operating-system structure and implementation through lectures, readings, and programming laboratories. Topics include processes and system calls, virtual memory, traps, device and network interfaces, file systems, scheduling, and synchronization.

Prerequisites

CSCI 3160 and CSCI 3240.

Learning Outcomes

By the end of the course, students should be able to:

1. Explain the responsibilities and abstractions of an operating system.
2. Trace system-call, trap, process, and virtual-memory behavior.
3. Modify and test kernel code in xv6.
4. Reason about files, devices, networking, scheduling, and synchronization.
5. Use debugging and evidence-gathering tools to diagnose system behavior.
6. Evaluate protection, isolation, and kernel-extensibility mechanisms and their security tradeoffs.

Major topics include Unix processes and system calls; address spaces and page tables; traps and interrupts; copy-on-write; device and network drivers; locking and scheduling; file systems; and memory-mapped files.

Required Materials and Technical Requirements

Use D2L, the xv6 source tree, a Unix-like development environment, Git, and the tool profiles documented with each lab. Additional readings and setup instructions will be announced as needed.

Course Structure and Major Assessments

The course combines lectures, readings, and programming labs using xv6 and its toolchain. The nine labs develop operating-system mechanisms through implementation, testing, and debugging. The best eight lab grades count.

Assessment category	Weight
Programming labs (best 8 of 9)	50%
In-class exercises	10%
Midterm exam	20%
Final exam	20%

Each lab is graded out of 10 points: 8 points for the implementation and automated tests, and 2 points for the one-page lab report. The best eight of the nine combined lab grades count toward the programming-lab category.

The course schedule identifies the lab sequence, exam dates, and due dates. Each assignment handout provides its technical requirements and submission instructions.

Grading Scale

Grade	Minimum percentage
A	93%
A-	90%
B+	87%
B	83%
B-	80%
C+	77%
C	73%
C-	70%
D+	67%
D	60%
F	below 60%

If the grading scale is adjusted, students receive the higher resulting letter grade.

Assignment and Assessment Policies

Submit labs by the published deadline and request extensions before the deadline when possible. Regrade requests should identify the specific issue and be submitted within seven calendar days. Follow the collaboration rules in each assignment. Submitted work must be the student's own and must acknowledge sources.

Attendance and Participation

Attendance is not graded, but participation is strongly encouraged. Treat classmates professionally in class, online, and during collaboration. Contact the instructor as soon as possible when an emergency affects coursework.

Academic Integrity and Generative AI

Students must follow the ETSU Honor Code. AI tools may explain concepts or diagnostics when an assignment permits them, but may not generate or rewrite submitted solutions when the assignment prohibits that use. Disclose permitted assistance, including relevant prompts or interactions, and be prepared to explain all submitted work. Unacknowledged or prohibited use may constitute academic misconduct.

Communication and Course Technology

Use D2L for course materials, announcements, and grades. Use the xv6 source tree, Git, and the lab tool profiles for technical work. Assignment handouts are authoritative for the details of each lab or exercise.

Accessibility and Student Support

The official ETSU syllabus attachment includes university-wide information about accommodations, student rights, academic integrity, and support resources. Review the official ETSU syllabus attachment and contact the instructor early when an approved accommodation affects course work.

Course Schedule

See the course schedule for the complete sequence of meetings, topics, labs, exams, and due dates. Dates, examples, and procedures may be revised by announcement; university policy controls.

Syllabus Changes

Updates to dates, examples, or procedures will be announced through official course channels and reflected in D2L.

University Syllabus Attachment

Review the official ETSU syllabus attachment for university-wide policies, student rights, accommodations, academic integrity, and support resources in the official ETSU syllabus attachment.