OPERATING SYSTEMS, CPS-340-01/02

Course Details

Credit Hours: 4

Class Days, Time, Location:

- Lecture Time: Tuesday, Friday: 11:00 AM - 12:15 PM
- Lecture Location: SH 259
- Lab Time (section 01): Tuesday, 2:00 PM-4:50 PM, at SH 259
- Lab Time (section 02): Friday, 2:00 PM-4:50 PM, at SH 259

Course Modality:

- Fully Seated (all in person)
- 28 Lectures: 75' each
- 14 Labs: 170' each
- Reading textbook, slides, watch videos, programming and prepare for the lab at home: 4 hours/week

Prerequisites:

Minimum Grade of C- for CPS330

Instructor Details

Name and Title: Dr. Hanh Pham, Associate Professor

Preferred Pronouns: she/her

Campus Email: pham@newpaltz.edu

Office Phone: 845-257-3574 (don't leave messages)

Office Location: SH 248

Office Hours: 9:40-10:50am on Tuesday, 9:40-10:50am and 12:20-2:00pm on Friday

Basic Needs

To learn effectively you must have basic security: a roof over your head, a safe place to sleep, enough food to eat. The **Division of Student Affairs** has compiled a broad range of resources, including a **list of campus services, local agencies, and support networks**, that can assist

students with managing their basic needs. Please consult these resources or **contact the Division of Student Affairs** should you need additional information.

Names & Pronouns

SUNY New Paltz recognizes the importance of a diverse student body, and we are committed to fostering equitable classroom environments. You are invited to share how you want to be referred to, both in terms of your name and your pronouns (he/him, she/her, they/them, etc.). I will do my best to address and refer to all students accordingly and will support you in doing so as well. In this classroom, we will respect and refer to people using the names and personal pronouns that they share.

Generative AI Tools & ChatGPT

- ✓ *This course prohibits the use of ChatGPT or Generative AI tools in creating the contents of all assignments and tests.*
- ✓ *Students can use those tools for learning only.*

Course Description

The design and implementation of single and multi-user operating systems. Memory management, process management, device management.

Student Learning Outcomes

Upon completion of this course, students will be able to:

- Understand the principles, organization and main components of operating systems.
- Comprehend the structures and functions of process, memory, and device management.
- Have practical skills in analyzing components of operating systems.
- Get hands-on experience with basic Linux commands and utilities.
- Have experience in writing technical reports.
- Get hands-on experience with programming OS components/mechanisms.

Reading Materials

- Operating System Concepts (9th Edition or later), Silberschatz, Galvin, Gagne, (required).

Attendance

- Students should attend all lectures and must attend and complete all labs. 2% will be deducted for each lab/lecture missed without documented reasons.
- Students who miss 3 or more labs will get F for the whole course.

Grading Information

Lab report is due at the end of each lab. Each assignment must be done individually from the start. Working in groups is not allowed. Submissions which are identical or contain identical parts will get 0 and may face further penalties. No make up for any missed assignments including exams, regardless of reasons. All deadlines are strict. Late submissions will not be graded nor counted. It is students' responsibility to double check, for each assignment, to submit the right work/files to the right place and in time. It is students' responsibility to visit Blackboard, the course website, to read announcements and emails daily for any changes or updates.

Assignments and Weight

- Labs = 20 points
- Exam 1 = 25 points
- Exam 2 = 20 points
- Final Exam = 35 points
- TOTAL POINTS = 100 points

Students who miss 3 or more labs will get F for the whole course regardless of exam scores.

Grade Scale (by percentage)

A	*100.00 – **93.00***	*A-*	*92.99 – **90.00***
B+	*89.99 – **87.00***	*B*	*86.99 – **83.00***
B-	*82.99 – **80.00***	*C+*	*79.99 – **77.00***
C	*76.99 – **73.00***	*C-*	*72.99 – **70.00***
D+	*69.99 – **67.00***	*D*	*66.99 – **60.00***
F	*Below **60***		

Last Day to Withdraw without Grade Penalty

Fall 2024: November 1; Spring 2025: April 7

Campus Policies

https://www.newpaltz.edu/acadaff/academic-policies-including-academic-integrity/

Please be aware of the most **current Campus Policies** applicable to issues such as Academic Integrity, Computer/Network Use, Identity Verification, Accommodation of Individuals with Disabilities, Title IX, and Veteran & Military Services.

Student Evaluation of Instruction (SEI)

You are responsible for completing the Student Evaluation of Instruction (SEI) for this course and for all your courses with an enrollment of five (5) or more students. I value your feedback and use it to improve my teaching and planning. Please complete the online form during the appropriate period: November 25 – December 9 (Fall 2024); April 22 – May 5 (Spring 2025).

Summary of Topics Covered and Course Schedule

Tentative Schedule (may be changed later. Please check daily at the course website)

21-Jan	Introduction & Overview of Computer Systems
24-Jan	Overview of OS
28-Jan	OS user interface, services, calls, programs
31-Jan	OS Structures, Design, & Implementation, Booting
4-Feb	Virtualization
7-Feb	Process Concept, Scheduling, Operations on Processes
11-Feb	Scheduling Criteria, Scheduling Algorithms, FIFO, SJF
14-Feb	Priority, Round Robin Scheduling, Multi-Level Queues
18-Feb	Threads
21-Feb	Cooperating Processes, Process Communication
25-Feb	Review 1
28-Feb	EXAM 1
4-Mar	Synchronization, Critical Sections, Solutions
7-Mar	Classical Problems & Deadlock
11-Mar	Logical & Physical Memory, Allocations
14-Mar	Paging, Segmentation, Swapping
25-Mar	Virtual Memory, Demand Paging
28-Mar	Page Replacement Methods
1-Apr	Allocation of Frames, Thrashing
4-Apr	Disk Scheduling, Swap-Space Management
8-Apr	Review 2
11-Apr	File Concept, Access Methods, Allocation Methods
15-Apr	EXAM 2
18-Apr	Domains, Access Matrix
22-Apr	I/O Hardware, I/O Interface
25-Apr	Kernel I/O Subsystem, I/O Requests
29-Apr	Computer Networks
2-May	Final Review
13-May	Final Exam 5/13/25, Tuesday 10:15-12:15