

# CSCI 370 / CIS 570: Operating Systems

## Fall 2020

This is a Synchronous Fully Online Course

This course is an introductory course in Operating Systems, focusing on processes, threads, synchronization, memory management, and networked operating systems. Example systems will include UNIX and Windows. Programming labs and assignments will focus on coding using threading and a client-server interface, observing OS behavior, and measuring efficiency, using UNIX and Microsoft systems.

**Instructor:** Susan J Lincke, PhD CISA CRISC

**Course Materials:** Canvas

**Email:** [lincke@uwp.edu](mailto:lincke@uwp.edu)

**Office Hours:** Mon., Wed. 3-5 PM, or by appointment **Location:** Canvas Collaborate  
<https://us.bbcollab.com/guest/8b801f4cc23e4f5eb362d60758d565f6>

**Class Hours:** Tues, Thurs. 2-3:22 PM

**Location:** Fully Online

**Prerequisites:** CSCI 242 & 355 or instructor permission

**Text:** *Operating System Concepts with Java, 8<sup>th</sup> Edition*, Silberschatz, Galvin, Gagne

**Topics Covered:** (Reading assignments in parenthesis)

1. Introduction & OS System Structures (Chapters 1 and 2)
2. Processes (Chapter 3)
3. Threads (Chapter 4)
4. Process Synchronization (Chapter 6)
5. CPU Scheduling (Chapter 5)
6. Memory Management (Chapter 8)
7. Virtual Memory (Chapter 9-9.6, 9.10)
8. Deadlock (Chapter 7)
9. Input/Output (Chapter 13-13.4)

**Online Method of Instruction:** This course is designed to help you learn with your friends, which is why it is synchronous.

- **Team Exercises:** There will be a series of online chat rooms where you can work with other students on the in-class exercises. I hope you will form teams of 2-5 students, where you can discuss solutions during active learning exercises. You will sign up for teams the first day of class. You should also take the opportunity to ask questions, when you have them, to me during the synchronous classes in the main collaborate classroom.
- **Lab Submission:** Active learning labs or exercises should be uploaded to the participation section of the course, as you complete them on a per-student basis.
- **Asynchronous lectures:** In some classes with no exercises, the lecture commentary may be asynchronous available to watch during the class time.
- **Miss a Class:** The class will be recorded and may be viewed at other times, if your schedule conflicts.

**Homework:** Two homework assignments will emphasize programming with threads, semaphores, and network applications. Lab reports will consider experimentation and efficiency. See web page for homework details.

**Quizzes:** Weekly quizzes will test vocabulary and concepts.

**Tests:** Exams will be taken from the objectives posted in my web pages, and from quizzes, homework and exercises given in class.

**Graduate Assignment:** Graduate students will write a graduate technical paper on a topic related to Operating Systems. See my web page for details.

**Schedule:** See web page for assignment due dates and exam dates.

<b>Grading:</b>	<b>Undergrad</b>	<b>Graduate</b>
Homework (10%, 25%)	35%	35%
Weekly Quizzes	10%	5%
In-Class Assignments	5%	
Exam 1	25%	25%
Exam 2	25%	25%
Graduate Assignment		10%

**Grading Scale:** A= 90% B=80% C=70% D=60% F<60%

Plus grades are assigned for grades within 2% of the next higher grade.

Minus grades are assigned for grades within 2% of the next lower grade.

**Academic Honesty:** Cheating on a homework or test will result in a grade of 0 for the homework or test. Cheating is defined to be copying from someone else or providing someone else copies of your answers. Do not show your assignments to anyone else! You may answer questions on homework asked by other students.

**Lateness:** All assignments are due at the beginning of class on the due date. Assignments turned in late will automatically have one full grade deducted. No assignments will be accepted one week or later after the due date.

### **Undergraduate Learning Goals:**

This course develops the following UWP shared learning goals (in bold) and CS-major ABET learning outcomes (with alphabet bullets):

**Reasoned Judgment:** *Critical thinking*, ethical thinking, *scientific thinking*, *analytic skills*, aesthetic skills

(a) Apply knowledge of computing and mathematics appropriate to the discipline

(c) Design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs

**Social & Personal Responsibility:** Teamwork, civic engagement, individual accountability, social equality, global perspective (*security*)

(e) An understanding of professional, ethical, legal, *security* and social issues and responsibilities

**Communication:** *literacy*, oral communication, creative expression

(f) An ability to communicate effectively with a range of audiences

### **Graduate Learning Goals:**

**Communication:** *literacy*, oral communication, *creative expression*

- Communicate Information Systems effectively and professionally within the Enterprise:
- Students can prepare business-oriented plans and reports, such as project plans, security plans, etc.

**Reasoned Judgment:** *Critical thinking, ethical thinking, scientific thinking, analytic skills*, aesthetic skills

- Develop Business-Oriented Software: Students can develop software for business enterprises.
- Evaluate Technology: Students can read and assess professional and research papers on Information technology subjects.

**Social & Personal Responsibility:** Teamwork, civic engagement, individual accountability, social equality, global perspective (*security*)

- Integrate IT and Business: Students can understand and integrate IT solutions into a business, including professional business professionals, related to IT. Students also understand the ethical implications of their decisions.

## **Course Regulations:**

**Covid-19 Containment Policy:** Due to the highly infectious and dangerous nature of Covid-19, the University of Wisconsin-Parkside has a policy that all students in classrooms, labs and common areas wear face masks. Wearing a face mask protects you, fellow students, and university faculty and staff. Your nose and mouth must be covered by your face mask. Students are expected to provide their own masks. If you arrive at the lab without a mask you will be asked to leave and pick up a disposable mask at the CTS Tech Bar or the Student Center Concierge Desk. If you do not feel well, have a fever or other Covid symptoms, avoid entering the lab.

Here is a link to the UWP responsibility pledge that all students are asked to adhere to:

<https://www.uwp.edu/RangerRestart/upload/RR-Pledge-web.pdf>

**Weapons:** Weapons are prohibited in UW-Parkside buildings and all outdoor events. Anyone found in violation will be subject to immediate removal in addition to academic and/or legal sanctions.

### **Homework Assignment Submission Policy and Guidelines:**

Assignments are to be submitted in class on the date due. All assignments will be submitted online in Canvas. Assignments submitted after the due date will be counted a day late. This policy is meant to discourage people from skipping class to finish a project.

**Exam Make-Ups:** Prior notice must be given to me when an exam must be missed. No make-up exams will be granted unless satisfactory documentation is produced to show an extenuating circumstance.

**Food and Drink in Class:** Neither food nor beverages are allowed in a campus computer lab.

**Accommodation for Religious Observances:** UW-Parkside policy requires that reasonable accommodation for a student's religious beliefs. Please notify your instructor within the first two weeks of classes about any scheduled class date that conflicts with a religious observance.

**Students with a Disability:** The University has many resources available to assist students with their academic studies. Anyone who has special needs that must be accommodated to fulfill the course requirements should contact the Disability Services Coordinator in the Office of Educational Support Services (WLLC D175, 595-2372), and keep me informed.