UNI CS 3430 (Spring 2020)
Operating Systems

Course Syllabus

Contact Information

Sarah Diesburg (sarah.diesburg@uni.edu)
Office: 311 ITTC
Office hours: MWF noon-2:00pm and by appointment
Lecture: MWF 2:00-3:00pm in ITTC 322
Class website: UNI eLearning

Course Description

History and evolution of operating systems; process and processor management; primary and auxiliary storage management; performance evaluation, security, and distributed systems issues; and case studies of modern operating systems. (Spring semesters)

Course Learning Outcomes

The overarching theme of the Operating Systems course is an exploration of process, memory, and device management required to support computation. The four main course outcomes that align with this exploration are:

1. That students be able to identify the components and commensurate management of computer hardware required for a process to execute correctly. This includes the topics of scheduling, thread dispatch, and resource isolation/process protection.

2. That students possess an understanding of memory management required to support concurrent processing and multi-threaded environments.

3. That students be able to fully describe the roles played by input/output devices and filesystems in support of process execution.

4. That students be able to describe and provide solutions for issues that arise in concurrent and distributed programming situations which lead to deadlock.

Course Material

- Lecture notes (posted on the class Web site)
- Follow these directions to obtain access to your mandatory online textbook:
  - Sign in or create an account at http://learn.zybooks.com
  - Enter zyBook code: UNICS3430DiesburgSpring2020
  - Subscribe

Class Grading

The following coursework components contribute to your final grade, and to the degree shown:

Projects (also Lab 0)	47%
zyBook Participation (readings)	8%
Exam 1	12.5%
Exam 2	12.5%

Final exam	20%
Class attendance/other extra credit	??%

The entire course is out of **500 total points**. (Hint: A shortcut to figuring out your grade is to take your points earned x 2, making it out of 1000 total points. Then divide by 10 to get your percentage out of 100.)

Class Programming Projects

There will be five hands-on projects due during this course. For many projects, you have the option of working in teams of two people or by yourself. For the projects, if you receive help from others, or if you find helpful information from various sources, please include appropriate acknowledgements. However, copying code from another classmate is never ok (see section below on scholastic conduct).

Late projects solutions will incur a 10% deduction each day the project is late. Project solutions received after two days from the original due date will receive 0 points. For example, a project solution submitted anytime on the Monday after the original due date of Friday will receive 0 points.

Suggested Homework

Homework over lecture materials will consist of short-answer questions, essays, or problems. The purpose of these exercises is to prepare you for exams. They will not be graded, but you can and should treat them as part of your study guide for the exams. You are ***strongly*** encouraged to write out answers to the homework, and we will review the answers to the questions before each exam.

Textbook Readings (Participation)

Your textbook is an interactive online textbook. The material in the zyBook both compliments and supplements the materials discussed in lecture. There are roughly 20 subsections of readings to complete. (Each subsection will equate to 2 points in the gradebook.) If you don't finish by the time they are due (1 week from the day they are assigned), I will give you half credit for late completed sections before the final. (Each late subsection will equate to 1 point in the gradebook.) End of section exercises **are not required**, but may help your understanding of the material.

Exams

We will have three exams: exam1, exam2, and the final comprehensive exam to test your understanding of the material. If you receive less than a C (72%) on exam1 or exam2, you will be given the opportunity to resubmit your exam to correct the answers you missed to earn half the points on the questions you missed (up to a max of earning a 72% on the exam.) The exam corrections will need to be done in a different pen/pencil color and turned into me within 3 days of receiving the exam. The final exam will be comprehensive, and there will not be a chance to make up points (e.g. the score you earn after taking the test the first time is what you get).

Class Grading Scale

100 – 92	A	77.9 – 72	C
91.9 – 90	A-	71.9 – 70	C-
89.9 – 88	B+	69.9 – 68	D+
87.9 – 82	B	67.9 – 62	D
81.9 – 80	B-	61.9 – 60	D-
79.9 – 78	C+	59.9 – 0	F

Computer Accounts

You will need CatID credentials to access the eLearning website.

Make sure you are checking your UNI emails. Important class announcements will be sent frequently from the eLearning interface to your UNI email account.

Your Responsibilities

- Understand the lecture slides and reading exercises
- Attend office hours for extra help, as needed
- Uphold academic honesty in completing your exercises, projects, and exams
- Turn in your projects on time
- Check the class webpage and your UNI email account regularly

Course Calendar (Tentative)

Dates	Topics/Notes
1/13 – 1/20	Introduction to OS Concepts and Systems Programming
1/22 – 1/29	Processes Basics, System Calls, Boot and Process Startup
1/31 – 2/17	Scheduling, Threads, and Basic Synchronization
2/19	Exam #1
2/21 – 3/13	Virtual Machines, Linux Kernels, and Advanced Synchronization
3/13 – 3/30	Memory
4/1	Exam #2
4/3—5/1	Device Management, File Systems, OS Security
5/4	Final

Course Policies

Attendance: The University requires attendance in all classes. I may take role randomly throughout the course as part of your grade.

Missed exams: A missed exam will be recorded as a grade of zero. I will follow the university rules regarding all missed exams.

Scholastic Conduct: You are responsible for being familiar with UNI's Academic Ethics Policies (http://www.uni.edu/pres/policies/301.shtml). Remember, discussing assignments is good. Copying code or answers is not. Any copied code from a current or previous class member may result in a zero grade for the assignment up to an F for the course. All code will be checked with a plagiarism checker.

Accessibility: In compliance with the University of Northern Iowa policy and equal access laws, I am available to discuss appropriate academic accommodations that may be required for students with disabilities. Requests for academic accommodations are to be made during the first three weeks of the semester, except for unusual circumstances, so arrangements can be made. Students should register with Student Disability Services, 103 Student Health Center, to verify their eligibility for appropriate accommodations.