



Name of Course - ECE 421 / CSC 421

Syllabus and Schedule of Classes
Spring 2023 - Dr. Murrell

Credit and contact hours: 3 credits

Prerequisite knowledge: Be competent at programming

Instructor:	Stephen Murrell	Term:	Spring 2023
Teaching Assistant:			
Office:	EB 516	Class Meeting Days and Time:	Tue/Thur 5:05 - 6:20
Office Hours:	Send me an email with your free times	Class Location:	MM 205
E-Mail:	s.murrell@miami.edu	Lab Location:	

Course Description & Objectives

Memory: paging, access protection, virtual memory, page faults and swapping.

File systems: Physical characteristics of media, error detection and correction.

Disc structures: i-nodes, partitions, free lists, files and directories, recovery

CPU internals: interrupts, mode, privileges, context switching

Processes: implementation, creation, manipulation, states, life-cycle

Input/output systems: device drivers, blocking/non-blocking, processing, scheduling

Concurrency, inter-process communication, and time-sharing

Resource allocation, locks, deadlocks: causes, avoidance, and cures, semaphores, and monitors

Construction of major operating system components.

Learning Objectives

By the end of this course, students will:



- have sufficient understanding of the theory and practical concerns to successfully contribute to the implementation and maintenance of any of the major operating system components
- gain sufficient expertise to construct functional operating system components
- understand the tasks, responsibilities, and modi operandi of modern operating systems

Diversity & Inclusion Statement

The College of Engineering embraces a notion of intellectual community enriched and enhanced by diversity along a number of dimensions, including race, ethnicity and national origins, gender and gender identity, sexuality, class and religion. In order to create a learning environment for my students that supports a diversity of thoughts, perspectives and experiences:

- If you have a name and/or set of pronouns that differ from those that appear in your official UM records, please let me know!
- If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to come and talk with me. I want to be a resource for you. You can also notify me of the issue through another source such as your academic advisor, a trusted faculty member, or a peer. If for any reason you do not feel comfortable discussing the issue directly with me, I encourage you to seek out another, more comfortable avenue to address the issue.
- I (like many people) am still in the process of learning about diverse perspectives and identities. If something was said in class (by anyone) that made you feel uncomfortable, please talk to me about it.



Required Texts, Materials, and/or Resources

Operating System Concepts,

A. Silberschatz,

Wiley,

ISBN 0471694665,

2007

Teaching Strategies

The class is in-person, physical attendance required. Grades come entirely from projects, assignments, and attendance.

Topical Course Outline

1. Memory: paging, access protection, virtual memory, page faults and swapping.
2. File systems: Physical characteristics of media, error detection and correction.
3. Disc structures: i-nodes, partitions, free lists, files and directories, recovery
4. CPU internals: interrupts, mode, privileges, context switching
5. Processes: implementation, creation, manipulation, states, life-cycle
6. Input/output systems: device drivers, blocking/non-blocking, processing, scheduling
Concurrency, inter-process communication, and time-sharing
7. Resource allocation, locks, deadlocks: causes, avoidance, and cures, semaphores, and monitors
Construction of major operating system components.

Grading/Evaluation

Assessment	Percent of Final Grade
Assignments and projects	90%
Attendance	10%
Total	100%



Course Policies: Coursework & Assignments

Late Work Policy: The maximum grade, initially 10, will be reduced by 1 for every day (or part of a day) that the assignment is late. After 10 days of lateness it is too late.

Extra Credit Policy: Extra credit may be available for going above and beyond the requirements in some useful way.

Grades of "Incomplete": Incompletes are only given if you are unable to complete the class due to a reason that is not your fault. Evidence is required.

Group Work Policy: No group work, individual effort only.

Course Policies: Technology & Media

Email: Send me email whenever you like, I do not spend my life in front of the computer waiting for emails to arrive, but I do try to check reasonably often.

Blackboard: Blackboard will be used only for submitting assignments and delivering grades.

Laptop Usage: Laptops are useful, but it is much better to pay attention than to put all of your effort into noting every single thing that happens.

Classroom Devices: No calculators, no recording devices.

Course Policies: Student Expectations

Attendance Policy: Attendance is required. Attendance will be taken on random days and will count towards your final grade.

Late Policy: Don't be late.

Phone Usage: No phoning, texting, social media, or web surfing.

Academic Ethics: Academic dishonesty in any form will not be tolerated. The instructor of this course supports the [University of Miami Honor Code](#). Cheating, plagiarism, or other forms of academic dishonesty in this course is subject to the provisions of the Honor Code.

Class Recordings: Students are expressly prohibited from recording any part of this course. Meetings of this course might be recorded by the University. Any recordings will be available to students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Recordings may not be reproduced, shared with those not in the class, or uploaded to other online environments. If the instructor or a University



of Miami office plans any other uses for the recordings, beyond this class, students identifiable in the recordings will be notified to request consent prior to such use.

Resources

Disability Access: Students in need of academic accommodations for a disability may consult with Office of Disability Services (ODS) to arrange appropriate accommodations. Students are required to give reasonable notice prior to requesting an accommodation.

The Office of Disability Services (ODS) is located in the Camner Center for Academic Resources in Whitten University Center 2400. ODS staff can be reached at 305-284-2374 (Voice) or 305-284-1999 (Fax). Office hours are 8:30 am to 5:00 pm, Monday through Friday. Individuals may email the office staff for quick responses to questions.

Sexual Misconduct/Sexual Harassment Reporting: The University of Miami seeks to maintain a safe learning, living, and working environment free from all types of sex-based and gender-based discrimination prohibited by state and federal laws, including Title IX and Title VII, and in keeping with the University's culture of belonging, DIRECCT values and expected behaviors.

The University's *Sexual Misconduct Policy* applies to all members of the University community, including students, faculty, staff, and visitors. The procedures for investigation and adjudication of complaints is determined by the status of the individual who is alleged to have engaged in sexual misconduct ("Respondent").

Free Tutoring at University of Miami: On-campus tutoring and writing assistance is available for students at University of Miami. The Learning Commons supports learning at the University of Miami through the co-location, coordination and enhancement of existing academic services. The University of Miami Libraries' Learning Commons is the result of collaboration with campus partners including the Camner Center for Academic Resources, Academic Technologies, Writing Center, and Math Lab. To learn more at the Learning Commons, please visit the Richter Library, call 305-284-4722, or e-mail learningcommons@miami.edu.

University Writing Center: If needed, please provide information about the University's writing center.

Important Dates to Remember

Add a short statement that describes that all the dates and assignments are tentative, and can be changed at the discretion of the professor.



Drop/Add Deadline: Add: 25th January, Drop without a W: 1st February, Drop with a W: 29th March

Midterm Exams: to be announced

Withdrawal Deadline: Drop without a W: 1st February, Drop with a W: 29th March

Spring/Winter Break: 13th to 19th March

Final Examination: No examinations

Religious Observances: All students have a right to expect that the University of Miami will reasonably accommodate their religious observances, practices and beliefs. If you observe religious holidays, you should plan your allowed absences to include those dates. Students are expected to notify their instructor **in advance** if they intend to miss class to observe a holy day of their religious faith. [Religious Holy Day Policy and Calendar](#).

Schedule

Date	Finish This Homework/Assignment Before Class	Topics to be Discussed in Class
17 Janu ary	First day of class; no homework is due	Introduce things
27 April	Last day of class	Completing the final topic



SAMPLE Student Consent for Class Recording

I, (the undersigned), understand that I am attending class sessions or events that may be audio or video recorded. I was informed or made aware of this by the instructor before the start of the event. I hereby permit the University of Miami to release education records that consist of my voice or likeness as I participate in these classes or events. I am consenting to allow these materials to be used for educational purposes, including for institutional review of instruction and for the education of other students. I understand that I will receive no money or remuneration of any kind from the University related to this consent and release, or the materials covered by this consent or release. I acknowledge that I do not have the right to approve any materials developed by the university as authorized.

I understand that my consent here is independent of and separate from any other directive or consent I may have given to the University with regard to the release of my voice or likeness (such as for the release of Directory Information).

I understand my consent and release are voluntary and not a condition or requirement of my participation in this class or event.

_____ I agree to the above terms

_____ I do not agree to the above terms

Course Number and Title _____

Semester and Year _____

Course Instructor _____

Student name (please print) _____

Student signature _____ Date _____

Parent/guardian name if under 18 (please print) _____ Date _____



Parent/guardian signature if under 18 _____ Date
