Florida Atlantic University
Computer and Electrical Engineering and Computer Science

COP 4610 Computer Operating Systems CRN: 33218
Spring 2017
3 Credit Hours

Instructor: Tami Sorgente
Office Location: Engineering East (EE-96) Bldg., Room 430
Office Hours:

T:	*11:20 AM –1:20 PM*
W:	*11:20 AM – 1:20 PM*
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Course Prerequisites: CDA 3331C Introduction to Microprocessor Systems
COP 3530 Data Structures and Algorithms Analysis

Time Commitment per Credit Hour: This course has 3 credit hours. For traditionally delivered courses, not less than one (1) hour of classroom or direct faculty instruction each week for fifteen (15) weeks per Fall or Spring semester, and a minimum of two (2) hours of out-of-class student work for each credit hour. Equivalent time and effort is required for Summer Semesters, which may be offered over a shortened time frame. Fully Online courses, hybrid, shortened, intensive format courses, and other non-traditional modes of delivery will demonstrate equivalent time and effort.

Placement in Program: Computer Science and Computer Engineering senior level core course

Course Description/Introduction

An introduction to what makes up a digital computer operating systems, includes developing an understanding of interrupts, interrupt handling, processes, process management, file and device management, and other features of control programs. A team design project is required.

Course Objectives/Student Learning Outcomes

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

ABET Outcomes:
        1. An ability to function on multidisciplinary teams.
        2. An ability to communicate effectively.
        3. An ability to apply design and development principles in the construction of software systems of varying complexity.

Course Objectives:

4. To provide fundamental concepts applied in modern operating systems, including process management, memory organization and management, and I/O management

5. To apply the design of collaborative processes and threads and their synchronization using semaphores

6. To understand the problem of deadlock and their solutions

7. To provide knowledge of basic principles of I/O management

8. To develop simulation program for evaluation of CPU schedulers

Course Delivery Mode

This is a fully online course accessible only through FAU's learning management system—Canvas. You must log into Canvas with your FAU ID and Password to access the materials and assignments in this course. If you do not know your FAU ID or Password click the following link for help. Link to Office of Information Technology Help.

The course is organized into modules with dates provided for each module. Dates and durations for each module may vary so please pay close attention to start and due dates. The course begins with the START HERE page, which will familiarize you with the organization and navigation of the course. You will open a new learning module to access the assigned reading materials, PowerPoints, and other relevant materials for each subsequent module.

Required Text and Materials

Abraham Silberschatz, Peter B. Galvin, Greg Gagne

Operating System Concepts, 9th Edition

ISBN: 978-1118063330

Or

ISBN: 9781119246367 (Wiley custom book)

Technology and Computer Requirements

Minimum Technology Requirements for This Course

In this course you will need the following technology and computer requirements:

Hardware
- Dependable computer
- Computer speakers
- Headset with microphone

Software
- Microsoft 365 Suite Link to Download
- Reliable web browser (recommended Chrome or Firefox)
- Java – Link to Download and/or Link to Verify Java on your computer
- Adobe Flash Player: Link to Download

- Mobile App: Instructions on how to download the Canvas App on an iOS device Link for iOS Instructions or Android device Link for Android Instructions

Internet Connection
- Recommended: Broadband (high-speed) Internet connection with a speed of 4 Mbps or higher
- To function properly, Canvas requires a high-speed Internet connection (cable modem, DSL, satellite broadband, T1, etc.). The minimum Internet connection speed to access Canvas is a consistent 1.5 Mbps (megabits per second) or higher.
- To check your Internet speed click here.

Minimum Technical Skills Requirements

The general and course-specific technical skills a student must have to succeed in the course include but are not limited to:

1. Accessing Internet.
2. Using Canvas (including taking tests, attaching documents, etc.).
3. Using email with attachments.
4. Creating and submitting files in commonly used word processing program formats such as Microsoft Office Tools.
5. Copying and pasting functions.
6. Downloading and installing software.
7. Using presentation, graphics, and other programs.
8. Posting and commenting in an online discussion.
9. Searching the FAU library and websites.
10. Proficiency in programming

Computer Requirement - Basic computer specifications for Canvas Link to Specifications

Operating System
- A computer that can run Mac OSX or Win 7.0 or higher.
Peripherals
- A backup option should be available to minimize the loss of work. This can be an external hard drive, a USB drive, cloud storage, or your folder on the FAU servers.
Software
- Once logged in to Canvas make sure your Internet browser is compatible
- Other software may be required for specific learning modules. If so, the necessary links to download and install will be provided within the applicable module.

Technical Support
In the online environment, technical issues are always possible (e.g., lost connection, hardware or software failure). Many of these can be resolved relatively quickly, but if you wait until the last minute before due dates, the chances of these glitches affecting your success are greatly increased. Please plan appropriately. If a problem occurs, it is essential you take immediate action to document the issue so your instructor can verify and take appropriate action to resolve the problem. Please take the following steps when a problem occurs:

**Most issues in Canvas can be resolved by clicking on the "Help" tab located on the menu bar. **

By clicking the "Help" tab you will be able to:
- Report a Problem
- Search Canvas Guides

Additional Technical Support
1. Contact the eLearning Success Advisor for assistance: 561-297-3590
2. If you can, make a Print Screen of the monitor when the problem occurs. Save the Print Screen as a .jpg file. If you are unfamiliar with creating a Print Screen file, visit Link to Print Screen Instructions.
3. Complete a Help Desk ticket Link to Help Desk. Make sure you complete the form entirely and give a full description of your problem so the Help Desk staff will have the pertinent information in order to assist you properly. This includes:
    a. Select "Canvas (Student)" for the Ticket Type.
    b. Input the Course ID.
    c. In the Summary/Additional Details section, include your operating system, Internet browser, and Internet service provider (ISP).
    d. Attach the Print Screen file, if available.
4. If you do not hear back from the Help Desk within a timely manner (48 hours), it is your responsibility to follow up with the appropriate person until a resolution is obtained.
5. Once you have submitted a Help Desk Ticket, inform your instructor. Include all pertinent information of the incident (3b-d above). Keep your instructor informed of the status.

Course Assessments, Assignments, Grading Policy, and Course Policies

Assessments for this Course Include:
Introductions and Syllabus Quiz:

You will post an introduction in the student introductions discussion board and take a syllabus quiz. The syllabus quiz can be taken as many times as necessary to achieve 100%.

Discussions: 5 points each, for a total of 30 points for the semester*.*

As part of the course assignments, you will be asked to post an original submission to the module discussion and reply to at least 1 other students' posts with a substantive response. A substantive response adds value to the discussion by bringing new ideas, research, evidence, etc. to the conversation. "I agree," "Ditto" and the like are not acceptable replies. Rules of Netiquette must be followed. Replies are not texts with your friends. Full sentences, proper spelling, proper source citations, etc., are expected.

Ensure that postings contain detailed responses to each question and that course and chapter contents are applied in your discussion responses. For example, consider taking a new approach in presenting chapter content, cite new examples, present external research (paraphrase, avoid unnecessary and/or lengthy quotations; **do not plagiarize, cite references)**. For maximum points, please reference external research or examples as well as the discussion rubrics.

All original posts must be submitted by the initial post due date (points will be deducted for late posts). Responses to peers must be submitted by the specified due date in order to be graded.

Team Project:

You will be required to participate in a team project that will involve collaborating with other students to produce 4 assignments and a presentation. This assignment offers you the opportunity to practice virtual collaboration skills that are applicable to the 21st Century global workforce. Though group work is often challenging, it is a reality in nearly every employment setting. Learning to be a supportive team member, resolve conflicts, and discover your role preferences within group projects is an important part of the skills you will develop through your FAU education.

Unit Quizzes:

- *There will be Unit quizzes based on readings, lectures, homework, and class discussions*

Course Examinations:

- *Examinations will be based on readings, lectures, homework, and class discussions.*
- *The exams will include multiple choice, true/ false, and/or short answer questions.*
- *Answers will be evaluated based on content in terms of accuracy of information and ability to analyze the issues. Good answers will demonstrate that you have read and understood the chapters, and actively participated in classroom discussions.*
- *Exams will be taken online in the Canvas Learning Management System. Test will be timed.*
- *No make-up exams are given*

Your final grade will be based on the following point distribution:

500 point scale	points
1 Exam #1	45
1 Exam #2	45
1 CPU Scheduler Programming Assignment part 1 – program logic	20
1 CPU Scheduler Programming Assignment part 2 – simulation program	40
4 Case Study team assignments (group)	40 (10 points each)
1 Case Study presentation (group)	20
Case Study evaluation/ peer review (individual)	20
6 Discussion Boards	30 (5 points each)
3 Homework Assignments	105 (35 points each)
9 Quizzes	90 (10 points each)
1 Exam #3	45

The assessments have the following weighted distribution:

Exams (3)	27 %
Homework Assignments (3)	21 %
Quizzes (9)	18 %
Discussion Boards (6)	6 %
Case study group assignments and presentation (5)	12 %
Case study individual evaluation (1)	4 %
CPU scheduler assignment (2)	12%
TOTAL	100%

Grade Scale:

total points	500-465	464-450	449-435	434-415	414-400	399-385	384-365	364-350	349-335	334-315	314-300	<300
	93%	90%	87%	83%	80%	77%	73%	70%	67%	63%	60%	
grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F

Course Schedule (topics)

1. Introduction to Operating System Concepts
2. Operating System Design
3. Process Concept
4. Processes and Scheduling
5. CPU scheduling
6. More CPU Scheduling
7. Interprocess communication and Thread Concept
8. Interprocess communication and Synchronization
9. Process Collaboration and Synchronization
10. Deadlocks
11. Main Memory Introduction
12. Main Memory and Virtual Memory
13. Virtual Memory Techniques
14. Input/ output and disk scheduling
15. I/O Systems and Case studies

Late Assignments Policy

Late work is not acceptable. All projects will have a Final due date, assignments will be posted well in advance and students may submit assignments early. No assignments will be accepted after the Final due date.

Make-up Policy for Tests:

Makeup tests are given only if there is solid evidence of a medical or otherwise serious emergency that prevented the student of participating in the exam.

Incomplete Grade Policy

Incomplete grades are against the policy of the department. Unless there is solid evidence of medical or otherwise serious emergency situation and the student is currently passing the class, incomplete grades will not be given.

Code of Academic Integrity Policy Statement

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001.

Plagiarism is unacceptable in the University community. Academic work that is submitted by students is assumed to be the result of their own thought, research, or self-expression. When students borrow ideas, wording, or organization from another source, they are expected to acknowledge that fact in an appropriate manner. Plagiarism is the deliberate use and appropriation of another's work without identifying the source and trying to pass off such work as one's own. Any student who fails to give full credit for ideas or materials taken from another has plagiarized. This includes all discussion posts and other written and oral presentation assignments. If in doubt, cite your source!

Online Attendance Policy

Since the course is delivered online, you are expected to access the course **at least three times per week** to ensure you do not miss pertinent postings, messages, or announcements. It is imperative that you meet course deadlines and stay active in discussions, group projects, etc. If you are experiencing major illness, absences due to University duties, or other large-scale issues, contact the instructor immediately to formulate a resolution.

Netiquette and Classroom Etiquette Policy

Netiquette

Due to the casual communication common in the online environment, students are sometimes tempted to relax their grammar, spelling, and/or professionalism. Please remember that you are adult students and professionals—your communication should be appropriate.

For more in-depth information, please see the FAU statement on Netiquette.

Classroom Etiquette/Disruptive Behavior Policy Statement

Disruptive behavior is defined in the FAU Student Code of Conduct as *"... activities which interfere with the educational mission within classroom."* Students who behave in the face-to-face and/or virtual classroom such that the educational experiences of other students and/or the instructor's course objectives are disrupted are subject to disciplinary action. Such behavior impedes students' ability to learn or an instructor's ability to teach. Disruptive behavior may include, but is not limited to: non-approved use of electronic devices (including cellular telephones); cursing or shouting at others in such a way as to be disruptive; or, other violations of an instructor's expectations for classroom conduct.

For more information, please see the FAU Office of Student Conduct: Link to Student Conduct Policy

Communication Policy

Expectations for Students

- Announcements: You are responsible for reading all announcements posted by the instructor. Check the course announcements each time you log in.
- Email: You are responsible for reading all of your course email and responding in a timely manner.
- Course-Related Questions: Post course-related questions to the FAQ discussion forum. This allows other participants with the same question to benefit from the responses. Also, make sure you review this forum prior to posting a question; it may have already been asked and answered in previous posts.

Instructor's Plan for Classroom Response Time & Feedback

- Email Policy: Except for Saturdays, Sundays, and holidays, instructor typically, will respond to messages within 48 hours. Such messages should only be used to communicate personal or confidential matters; otherwise, please use the FAQ discussion forum within the course.
- Assignment Feedback Policy: Feedback will be provided on submitted assignments within one week of the submission date. Some assignments may require a longer review period, which will be communicated to students by the instructor.
- Course-Related Questions: Except Saturdays, Sundays, and holidays, questions will, generally, be answered by instructors within 48 hours.

Support Services and Online Resources

Office of Information Technology Online Help Desk	https://helpdesk.fau.edu/TDClient/Home/
FAU Libraries	http://www.fau.edu/library/
Center for Learning and Student Success	http://www.fau.edu/class/
University Center for Excellence in Writing	http://www.fau.edu/UCEW/
Math Learning Center	http://www.math.fau.edu/mlc/
Office of Undergraduate Research and Inquiry	http://www.fau.edu/ouri/
Student Accessibility Services	http://fau.edu/sas/
Office of International Programs and Study Abroad	http://www.fau.edu/goabroad/
Freshman Academic Advising Services	http://www.fau.edu/uas/index.php

Faculty Rights and Responsibilities

Florida Atlantic University respects the rights of instructors to teach and students to learn. Maintenance of these rights requires classroom conditions which do not impede their exercise. To ensure these rights, faculty members have the prerogative:

- To establish and implement academic standards.

- To establish and enforce reasonable behavior standards in each class.

- To refer disciplinary action to those students whose behavior may be judged to be disruptive under the *Student Code of Conduct*.

Instructor reserves the right to adjust this syllabus as necessary.

Selected University and College Policies

Accessibility Policy Statement

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodations to properly execute coursework due to a disability, must register with Student Accessibility Services (SAS) located in the Boca Raton, Davie, and Jupiter campuses and follow all SAS procedures. For additional information, please see: Link to Student Accessibility Services.

Questions relating to academic accommodations for students with disabilities are to be directed to Students Accessibility Services, Boca Raton campus, Room SU133, (561) 297-3880, TDD (561) 297-0358.

Grade Appeal Process

A student may request a review of the final course grade when s/he believes that one of the following conditions apply:
- There was a computational or recording error in the grading.
- Non-academic criteria were applied in the grading process.
- There was a gross violation of the instructor's own grading system.
- Procedures for a grade appeal may be found in Chapter 4 of the University Regulations.

Religious Accommodation Policy Statement

In accordance with rules of the Florida Board of Education and Florida law, students have the right to reasonable accommodations from the University in order to observe religious practices and beliefs with regard to admissions, registration, class attendance, and the scheduling of examinations and work assignments. For further information, please see Academic Policies and Regulations.

University Approved Absence Policy Statement

In accordance with rules of the Florida Atlantic University, students have the right to reasonable accommodations to participate in University approved activities, including athletic or scholastics teams, musical and theatrical performances and debate activities. It is the student's responsibility to notify the instructor at least one week prior to missing any course assignment.

Drops/Withdrawals

Students are responsible for completing the process of dropping or withdrawing from a course. Please click on the following link for more information on dropping and/or withdrawing from a course. Link to FAU Registrar Office