CLASS (CECS 326-01), Operating Systems, Fall 2021

Instructor: Shui Lam
Email:
shui.lam@csulb.edu
Mode of delivery: Alternative
Course: CECS 326-01 (1189)
Term: Fall 2021

Virtual Office Hours: MW 4:45-5:15pm; TuTh 6:15-7:00pm; Or by appointment	**Zoom Link:** https://csulb.zoom.us/j/6181220944
Class Days/Times: TuTh 5:00-6:15pm	**Class Zoom Link**: https://csulb.zoom.us/j/88358558904

Course Description: The structure and functions of operating systems. Interrupt handling, processes and interprocess communication, memory management, resource scheduling, information sharing and protection. Project implementation in C/C++. Letter grade only (A-F). (Lecture 3 hours)

Units: 3 units

Prerequisite: CECS 275 or CECS 282 and CECS 341 or CECS 346 all with a grade of "C" or better.

Required or Elective Course: Required

Textbook for Reference: *Operating System Concepts*, 10th ed., by Silberschatz, Galvin & Gagne (John Wiley 2018). Not a required text.

Additional References: Class Lecture Notes, Linux Command Reference

ABET Student Outcomes:

The course satisfies following ABET for CS student outcomes:

1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Communicate effectively in a variety of professional contexts.
6. Apply computer science theory and software development fundamentals to produce computing-based solutions.

Course Objectives (specific objectives related to the material covered in the course):

The student will be able to:

1. Write programs using some typical LINUX system calls.
2. Write programs effecting inter-process communication.
3. Analyze and create solutions for process synchronization problems.
4. Evaluate scheduling algorithms using Gantt charts and various performance measures.
5. Analyze memory management schemes including virtual memory and evaluate related algorithms.
6. Understand the issue of deadlock and analyze different deadlock handling approaches.
7. Analyze trade-offs inherent in operating system design.

Course Structure and Delivery Mode

This course is conducted entirely online. You will access the course material and activities on BeachBoard and are required to participate in synchronous class meetings via Zoom.
If you need technical assistance at any time during the course or need to report a problem with BeachBoard, please contact the Technology Help Desk using their online form, by phone at (562) 985-4959.

Course Communication

We will use BeachBoard to **make announcements,** communicate information, post assignments and corresponding due dates, and discuss course-related topics. **Please note, it is your responsibility to check** BeachBoard's dashboard **regularly, as** it will contain **important information about upcoming class assignments, activities, or concerns.**

Tentative Course Schedule*

- Week 1-2: Overview (Chapter 1 in reference text)
- Weeks 3-5: Processes (Chapter 3 in reference text)
- Weeks 6-8: Synchronization tools and examples (Chapter 6&7 in reference text)
- Weeks 9-10. Deadlocks (Chapter 8 in reference text)
- Weeks 11-12. Virtual memory (Chapter 10 in reference text)
- Weeks 13-14. CPU scheduling (Chapter 5 in reference text)
- Week 15. File management (Chapter 13 in reference text)

*Schedule is subject to change depending on class progress.

Course Policies

Evaluation Components and their Percentages

Evaluation Components	Weight
Assignments	40%
Chapter Exams	40%
Final Exam	20%
Total	100%

Evaluation Components

All exams will be conducted online using the Quiz facility on BeachBoard. There will be a total of 5 chapter exams, one of which may be dropped from the final grade calculation. The final exam is cumulative and will be given during the final exam week.

Homework are programming assignments of C/C++ programs to be done using Linux. Assignments will be posted and submitted on BeachBoard. A 2-day grace period will be given for homework submissions. Submission after the grace period will be accepted up to 5 days past the grace period, with 10% late penalty for each day that it is late.

Grading Scale

LETTER GRADE	PERCENTAGE
A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	59% and below

Grading Policy:

- A passing grade for the programming assignments is required for a student to receive a passing grade for the class.
- Time of each chapter exam will be announced in class. Since one chapter-exam grade may be dropped from the final grade calculation, no makeup chapter exam will be provided.

How to Contact the Instructor:

Use email to contact instructor: shui.lam@csulb.edu

Virtual Office Hours

The following 0ffice hours will be held on Zoom through link: https://csulb.zoom.us/j/6181220944
MW 4:45-5:15pm; TuTh 6:15-7:00pm; or by appointment

Plagiarism/Academic Integrity Policy

*There is **zero tolerance** for cheating, plagiarism, or any other act of violation of Academic Integrity policy. Work that you submit is assumed to be original unless your source material is documented appropriately, using proper citation. Using the ideas or words of another person, even a peer, or a web site, as if it were your own, is plagiarism. Any individual or group caught cheating on homework, lab assignments, or any exam/quiz will be subjected to full extent of academic actions allowed under University regulations. At a minimum, any student caught violating Academic Integrity Policy will receive no credit for the work concerned and one grade lower letter grade. In addition, this course may be excluded from grade forgiveness under the repeat and delete policy. To learn more about the University policy on Cheating and Plagiarism, visit:*
Academic Information and Regulations-Cheating and Plagiarism

University Withdrawal Policy

Class withdrawals during the final 3 weeks of instruction are not permitted except for a very serious and compelling reason such as accident or serious injury that is clearly beyond the student's control and the assignment of an Incomplete grade is inappropriate (see Grades). Application for withdrawal from CSULB or from a class must be filed by the student online whether the student has ever attended the class or not; otherwise, the student will receive a grade of "WU" (unauthorized withdrawal) in the course. More information regarding the University guidelines on Dropping and Withdrawing at:
Dropping and Withdrawal

Attendance and Participation Policy

Attendance (joining the online class) and Participation (being alert and available if inquired by the instructor in contrast to being just online but unresponsive) are essential to your success in this class. In distance education courses you are required to attend and participate just as if you were in a face-to-face course. Attendance will be checked randomly during class. Repeated unexcused absences during the class will cause -5% of the total grade. Students are responsible for all materials covered in lectures and labs.

Student Grievance Policy

Please check CSULB grievance policy and procedure at:
Student Grievance Procedures

Special Needs Accommodations

Online courses are required to meet ADA accessibility guidelines. Students with a disability or medical restriction who are requesting a classroom accommodation should contact the Bob Murphy Access Center (BMAC) and also notify the instructor. BMAC personnel will work with the student to identify a

reasonable accommodation in partnership with appropriate academic offices and medical providers. Only approved BMAC petitions will be accommodated.

Any student who is facing academic or personal challenges due to difficulty in affording groceries/food and/or lacking a safe and stable living environment is urged to contact the CSULB Student Emergency Intervention & Wellness Program. Additional resources are available via Basic Needs Program. The students can also email supportingstudents@csulb.edu, call (562)985-2038, or if comfortable, reach out to the instructors as they may be able to identify additional resources. For mental health assistance please check out CSULB Counseling and Psychological Services (CAPS).

http://web.csulb.edu/divisions/students/caps/

Disclaimer

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

Additional Information

BeachBoard Access

To access this course on BeachBoard you will need access to the Internet and a supported web browser (Please note: The preferred web browser to use when accessing information in this course is Google Chrome. Google Chrome minimizes technical issues and responds well to the technology used in this course.).
You may access BeachBoard directly at https://bbcsulb.desire2learn.com/d2l/login and log in with your CSULB campus ID and password. You may also access it via Single-Sign-On page at https://csulb.okta.com/. Once logged in, you will see the course listed under "My Courses". Click on the title to access the course page.

Technology Requirements

- **Access**: Please contact the CECS Department Chair, Dr. Mehrdad Aliasgari, at mehrdad.aliasgari@csulb.edu if you need a laptop loaner.
- **Software and tools**: You will need to have an up-to-date browser, operating system and some additional software (list any needed for your course) on your computer to take this class. Some of the documents in this course will be available to you in PDF form. If you do not have Adobe Acrobat Reader software on your computer, you can download it by going to Adobe Acrobat Reader
- **Lab/Homework:** All programming will be done on Linux using C/C++. You will need to install Linux if you are running Windows or Mac on your computer.

Please contact the department if you need support with access to the Internet, electronic devices, or any other issues related to remotely accessing your course.

Tutoring

Take advantage of free peer tutoring (virtual) provided by Engineering Student Success Center (ESSC): Engineering Tutoring

Additional Resources

There are many services on campus to help you achieve success in your courses. Links to the following services are also available in BeachBoard course homepage under "CSULB Student Resources":

- Counseling and Phychological (CAPS)
- Disabled Student Services
- Enrollment Services
- Financial Aid
- Learning Assistance Center
- Student Health Services
- Tutoring at CSULB
- University Library
- Writers Resource Lab

Personal Assistance

The following *statement* has been provided by the Dean of Students for use in your syllabi:

Any student who is facing academic or personal challenges due to difficulty in affording groceries/food and/or lacking a safe and stable living environment is urged to contact the CSULB Student Emergency Intervention & Wellness Program. Additional resources are available via Basic Needs Program. The students can also email supportingstudents@csulb.edu, call (562)985-2038, or if comfortable, reach out to the instructors as they may be able to identify additional resources