

# California Lutheran University

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## Bachelor's Degree for Professionals

**CSC-340 Operating Systems**

**Winter Term, 2016**

**Class Room: D8**

**Time: Mondays from 6:00PM to 9:30PM**

**Vahé Karamian**

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**Drop Dates:** December 7, 2015– Last day to add; last day to drop (without a “W”); Last day to drop without financial penalty (100% tuition charge for classes dropped after this date)

January 19, 2016– Last day to withdraw without academic penalty (Responsible for 100% of tuition)

**Course Description** (This information should match the catalog description)

Discusses the major functionality and principles behind all major operating systems tasks, including user interface, hardware sharing among users, data sharing among processes, user protections, resources scheduling among users, multi-user environment, multi-processing and real-time systems. Prerequisites: Computer Science 210, Mathematics 241.

**Textbooks/Required Readings**

Guide to UNIX Using Linux (networking (Course Technology)); Course Technology; (4th edition); ISBN# 978-1418837235.

**Course Outcomes**

1. be able to distinguish different styles of operating system design.
2. understand device and I/O management functions in operating systems as part of a uniform device abstraction.
3. have an understanding of disk organization and file system structure.
4. be able to give the rationale for virtual memory abstractions in operating systems.

5. understand the main principles and techniques used to implement processes and threads as well as the different algorithms for process scheduling.
6. understand the main mechanisms used for inter-process communication.
7. understand the main problems related to concurrency and the different synchronization mechanisms available.
8. have the ability to evaluate security risks in operating systems and understand the role operating systems can and should play in establishing security.

### **Course Assignments/Requirements**

Students are responsible for their own work and the completion of the successful implementation of the project assigned in the class. The final outcome of the project, presentation and reports are a team effort.

### **Grading**

Grading will be based on the assignments assigned in class. Each chapter will have 25 review questions which will need to be completed during the class session. The Projects will be assigned during the class, and will be due the next class meeting.

There will be a research paper due by the end of the class with presentation by the students describing what operating systems are, comparing the three major operating system in the market as of today and for extra credit, they will also do re-search on mobile operating systems such as Android, iOS, and Windows Mobile.

### **Attendance Policy**

Students must be present for all class sessions.

**Course Schedule** (Activities/topics for each class meeting, including due dates for all assignments and exams)

#### **Week 1**

Introduction to Class  
Chapter 1: The Essence of UNIX and Linux  
Review Questions, and Projects Due for Chapter 1

#### **Week 2**

Chapter 2: Exploring the UNIX/Linux File Systems and File Security  
Review Questions, and Projects Due for Chapter 2

### **Week 3**

Chapter 3: Mastering Editors  
Review Questions, and Projects Due for Chapter 3

Preparation for Class Research Paper:  
Operating System Design and Concepts  
-Introduction, History, Comparison, Memory Management, Process Management, etc...

### **Week 4**

Chapter 3: Mastering Editors  
Review Questions, and Projects Due for Chapter 3

### **Week 5**

Chapter 4: UNIX/Linux File Processing  
Review Questions, and Projects Due for Chapter 4

### **Week 6**

Chapter 5: Advanced File Processing  
Review Questions, and Projects Due for Chapter 5

In class research for the research paper

### **Weeks 7**

Chapter 6: Introduction to Shell Script Programming  
Review Questions, and Projects Due for Chapter 6

### **Week 8**

Chapter 7: Advanced Shell Programming  
Review Questions, and Projects Due for Chapter 7

### **Week 9**

Chapter 7: Advanced Shell Programming  
Review Questions, and Projects Due for Chapter 7

### **Week 10**

Research Paper Presentation

### **Week 11**

## Research Paper Presentation

### **Course Evaluations Statement**

All course evaluations are conducted online. Your feedback is important to us. You will receive an email message reminding you when the website is open for your feedback. The link is:

<http://courseval.callutheran.edu>

### **Disability Statement**

California Lutheran University is committed to providing reasonable accommodations in compliance with ADA of 1990 and Section 504 of the Rehabilitation Act of 1973 to students with documented disabilities. If you are a student requesting accommodations for this course, please contact your professor at the beginning of the semester and register with the Disability Support Services Coordinator, Wendy Jimenez, for the facilitation and verification of need. The Disability Support Services Coordinator is located in the Center for Student Success Office at 3259 Pioneer Street, and can be contacted by calling 805.493.3878 or emailing

[wjimene@callutheran.edu](mailto:wjimene@callutheran.edu)

### **Statement on Academic Honesty**

The educational programs of California Lutheran University are designed and dedicated to achieve academic excellence, honesty and integrity at every level of student life. Part of Cal Lutheran's dedication to academic excellence is our commitment to academic honesty. Students, faculty, staff and administration share the responsibility for maintaining high levels of scholarship on campus. Any behavior or act which might be defined as "deceitful" or "dishonest" will meet with appropriate disciplinary sanctions, including dismissal from the University, suspension, grade F in a course or various forms of academic probation. Policies and procedures regarding academic honesty are contained in the faculty and student handbooks.

Plagiarism, cheating, unethical computer use and facilitation of academic dishonesty are examples of behavior which will result in disciplinary sanctions. Plagiarism includes, but is not limited to:

- word for word copying without using quotation marks or presenting the work as yours
- using the ideas or work of others without acknowledgement
- not citing quoted material. Students must cite sources for any information that is not either the result of original research or common knowledge.

Standards of Student Conduct Statements:

- [Student Life Handbook](#)
- [Academic Honesty Statement](#)

### **University Harassment Policy**

Be civil to each other, both on- and offline. For information on the University's student harassment policy and rights, please go to the following link:

[Student Life Handbook](#)

### **Sexual Misconduct**

California Lutheran University does not tolerate any degree of sexual misconduct on or off-campus. We encourage you to report if you know of, or have been the victim of, sexual harassment, misconduct, and/or assault. If you report this to a faculty member, she or he must notify Cal Lutheran's Title IX Coordinator about the basic facts of the incident. More information about your options for reporting can be found at: <http://www.callutheran.edu/title-ix/>

### **Pearson Library**

Pearson Library provides access to scholarly books, journals, ebooks, and databases of full text articles from scholarly journals. To begin using these materials, visit the library web page

<http://www.callutheran.edu/library>

There are many ways to contact Pearson Library for research assistance, no matter where you are!

- Email Yvonne Wilber (Professionals liaison) at [ywilber@callutheran.edu](mailto:ywilber@callutheran.edu)
- General Library email: [CLUlibrary@callutheran.edu](mailto:CLUlibrary@callutheran.edu)
- Library main phone: 805.493.3250
- Text us your question: 805.493.3867
- Get more help at: <http://www.callutheran.edu/library/help/>

### **Cal Lutheran Writing Center**

The Writing Center provides 1:1 writing consultations, in-person and online, with trained undergraduate and graduate writing consultants. We welcome all writing-related projects at any stage of the writing process across the diverse disciplines of study at Cal Lutheran. The Writing Center also hosts writing workshops, provides in-class visits, facilitates writing groups, and offers a writer's studio option for longer, sustained projects. Services suit writers of all levels, including traditional undergraduates, graduate students from all fields, all English language learners, and accomplished scholars alike. All members of the Cal Lutheran community with an @callutheran.edu email address are welcome to make use of our services. For more information, please visit at [www.callutheran.edu/writing\\_center](http://www.callutheran.edu/writing_center) or call 805.493.3257. Please schedule appointments online through MyCLU Blackboard with the yellow "The Writing Center" icon in "Tools," or stop by The Writing Center itself, located in the Darling Collaboration Suite of Pearson Library.

### **Veterans Resources**

If you are a veteran, military member, or a family member of a veteran or military member, please refer to Cal Lutheran's Veterans Resources webpage for important information: <http://www.callutheran.edu/veterans/>. Also, if you are a veteran receiving benefits and you are struggling in a class, you most likely qualify for free tutoring. Please contact the Veterans Coordinator, Jenn Zimmerman, [veterans@callutheran.edu](mailto:veterans@callutheran.edu) or 805.493.3648, for more information.

**Help Desk**

Students may contact the Help Desk about telephone, network, wireless network, software questions password problems, hardware problems, and general consultation (i.e. you cannot log into your MyCLU portal, or you are having problems with Blackboard). Please email specific details about your problems to [helpdesk@callutheran.edu](mailto:helpdesk@callutheran.edu), click on the following link for more information [http://www.callutheran.edu/iss/technology\\_services/helpdesk.php](http://www.callutheran.edu/iss/technology_services/helpdesk.php) or call: 805.493.3698

**Final Note**

This syllabus is subject to change. Every effort will be made to alert students to changes that occur in a timely manner.