**COP- 4600-001**

**Introduction to Operating Systems (3 credit hours)**

**Syllabus, Fall 2017**

When: TR 2:00pm – 3:15pm

Where: CPR 115

Instructor: Valentina Korzhova

Office: ENB 343 G

Office Hrs.: MW: 9:30am-10:30am; R: 3:30pm-4:30pm or by appointment

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TA: Yan Albright

Office: ENB 325

Office Hrs: W: 12:30pm – 3:00p

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TA: Tao Wang

Office: ENB 327

Office hours: F: 2:00pm – 4:00pm

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**Grading**: There will be two midterms. Each will count for 25% of the final grade. The comprehensive final will make up 25% of the final grade. There will be 4 or 5 projects. The projects, participation in class, quizzes and homework will count for 25% (15% projects, 10% homeworks, quizzes, and participation in class) of the final grade.

Midterm 1: September 28

Midterm 2: November 2

Final exam: TBA

**General:** The textbook is: Operating Systems Concepts, nine Edition, by Silberschatz, Galvin, and Gagne published by John Wiley and Sons. ISBN 978-1118063330

Each topic should be read about in the book, before the lecture which pertains to it. No late work is accepted!! Any academic dishonesty will result in an F in the course.

Programs must be individual and no help may be received or given without acknowledgment. Grading scale: A ≥ 90, B ≥ 80, C ≥70, D ≥ 60, F <60.

Topics:

Week 1: Chpts. 1, 2 Introductions, System Structures

Week 2: Chpt. 3 Processes, inter-process communication

Week 3. Chpt. 4 Threads

Week 3,4: Chpt. 5 Process Synchronization, semaphores, critical sections, Monitors,

Week 5: Chpt. 6. CPU Scheduling

Week 6: Review, exam 1

Week 7: Chpt. 7 Handling Deadlocks, Deadlock detection and avoidance,

Week 7,8: Chpt. 8 Memory management

Week 9,10: Chpt. 9 Virtual Memory

Week 11: Chpt. 10 Mass storage structure (Test 2)

Week 12: Chpts. 11,12 File systems implementation

Week 13: Chpts. Selected Topics

Week 13,14,15: Presentations

Week 15: Review.

**Course Objectives:**

1. Develop an understanding of the principles of operating systems.
2. Develop insight into process management and scheduling issues.
3. Understand memory management operation.
4. Develop an understanding of file system implementation and of multiple levels of hardware support and management.
5. Understand the concept of cooperating processes, including communication, synchronization, and deadlock (detection and avoidance).
6. Be able to evaluate operating system features.
7. Further develop an understanding of design tradeoffs during the project phase of the course.

**Learning Outcomes**

On completion of this course the student should be able to accomplish the following:

* Understand the principles of operating systems.
* Understand the implementation of fundamental OS structures, including
  + Processes, system calls, scheduling, virtual memory, and file systems
* Develop UNIX system software.
* Write and debug concurrent programs.
* Evaluate OS features
* Develop an understanding of design tradeoffs during the project phase of the course.

**Course Policies:**

1. Late work will not be accepted except in cases of verifiable emergencies.
2. It is highly recommended that you attend class. I will track attendance. However, class attendance does not directly factor into you grade.
3. We will be observing all university policies regarding religious holidays and disability policies. Any student with a disability who needs special accommodations must bring a current Memorandum of Accommodations from the Office of Student Disability Services (this is the prerequisite for receiving accommodations). Accommodated examinations through the Office of Student Disability Services require two weeks’ notice. For information regarding religious holidays, please

see [http://isis.fastmail.usf.edu/usfgc/gc\_pp/acadaf/gc10-045.ht](http://isis.fastmail.usf.edu/usfgc/gc_pp/acadaf/gc10-045.htm)m.

1. Incomplete ("I") grades will only be given in the case of severe hardship including verifiable medical emergencies or legal troubles. **Simply being "overloaded" and unable to complete your work is not grounds for an "I" grade**.
2. You may tape the lectures and take notes for personal use, but you may not make monetary profit from the tapes and/or notes.
3. Out of courtesy to other students please make sure that you **turn off, or place in silent mode, your cell phone**.

**Academic Integrity/Academic Dishonesty:**

I expect students to be honest and not cheat on their assignments or exams. Students may work together on their projects and may use open source software as appropriate. It is absolutely critical that all open source license agreements are followed and that any code that is **not** the student's be clearly marked as such. In light of this, I expect you to know the University's policies on student conduct, academic dishonesty, etc. Please see the University's Undergraduate Catalog regarding these policies at [http://www.ugs.usf.edu/catalogs/0809/adadap.ht](http://www.ugs.usf.edu/catalogs/0809/adadap.htm)m.

**Statement on Emergency Preparedness for Academic Continuity:**

In the event of an emergency, it may be necessary for USF to suspend normal operations. During this time, USF may opt to continue delivery of instruction through methods that include but are not limited to: Canvas and email messaging and/or an alternate schedule. It's the responsibility of the student to monitor Canvas site for each class for course specific communication, and the main USF, College, and department websites, emails, and MoBull messages for important general information.