

**TSYS Department of Computer Science @ Columbus State University**  
**Course Syllabus: CPSC 6125- Advanced Operating Systems**  
**Fall 2009**

**Instructor Information:**

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**(via email and by appointment)**

**Course Title:** CPSC 6125- Advanced Operating Systems

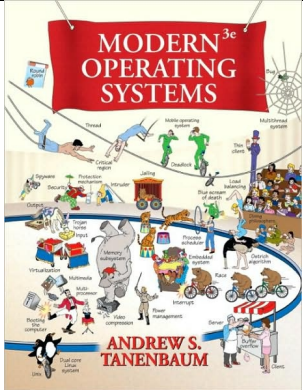
(This is an online course, taught through CougarVIEW. Go to <http://colstate.view.usg.edu> to access course material, complete assignments, take exams, and view announcements.)

**Official Course Description:**

Issues in the design and functioning of operating systems. Emphasis on synchronization of concurrent activity in both centralized and distributed systems. Deadlock, scheduling, performance analysis, operation system design, and memory systems including distributed file systems.

**Prerequisites:** None

**Required Textbook:**

	<p><b>Modern Operating Systems 3<sup>rd</sup> Ed.</b>(Hardcover) By Andrew S. Tanenbaum Publisher: Prentice Hall (December, 2007) ISBN-13: 978-0136006633</p>
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**Supplementary Materials:**

- Links and class notes available on the course web site

**Course Objectives:**

- 1) Students will understand the major design issues of operating systems.
- 2) Students will be able to identify the major components of an operating system.
- 3) Students will be able to identify the key functions of an operating system.
- 4) Students will understand the design and performance challenges of distributed operating systems.
- 5) Students will understand the performance issue that batch systems, interactive systems, and real-time systems have to address.
- 6) Students will understand the security implications of certain design choices of operating systems.

**Major Topics:**

- 1) Processes and Threads
- 2) Interprocess Communication
- 3) Process Scheduling
- 4) Memory Management
- 5) File Systems
- 6) Deadlocks
- 7) Input/Output
- 8) Distributed Operating Systems

**Instructional Methods and Techniques:**

- 1) This course will be taught online via threaded discussions. See <http://cs.colstate.edu/Academics/Online/OnlineInfo.asp> for information on taking an online course.
- 2) Students are expected to take part in weekly threaded discussions.
- 3) All students must have access to a networked computer, equipped with a recent web browser, preferably Internet Explorer 6 or above, to complete their assignments and regularly visit the course website for new assignments, reading materials and announcements.

**Assignments for Course:**

- Readings from the textbook
- Readings from popular computing periodicals
- Online research and reporting of findings
- Contributing to online discussions
- Several homework assignments which may involve writing small Java or C++ programs

**Assessment Criteria:**

Your performance will be evaluated using several homework assignments that may include hands-on activities, your timely contributions to threaded online discussions, a midterm test, and a final exam. The final exam will be closed-books, closed-notes.

The final exam will be proctored. Information about testing centers is available at [www.ncta-testing.org/cctc](http://www.ncta-testing.org/cctc).

Students must locate a (preferably professional) proctor to administer their final exam. A supervisor at work or a public library official may also serve as a proctor. Students must contact the instructor no later Wednesday, September 30, to get the instructor's approval for their chosen proctor. The name and full contact information of the proctor, as well as the proctor's affiliation must be communicated to the instructor no later than Wednesday, September 30.

A discussion topic will be posted by the instructor at the beginning of each week. A minimum of two *high-quality timely* contributions to the online discussion group will be required each week. A high-quality timely contribution to the online discussion group is one that addresses one of the issues raised by the discussion topic of the week, or one raised by another student during that week. Contributions such as "I agree" are not considered high-quality and will not get credit. Students are expected to interact in a professional and courteous manner. No non-topic-related issues are to be brought up on the board. No vulgarities, personal attacks, or offensive language of any sort will be allowed.

Assessment criteria will be weighted as follows.

Assignments	35%
One midterm test	20%
One final exam	35%
Class Participation	10%

Letter grades will be assigned as follows:

A (90%-100%); B (80%-89%); C (70%-79%); D (60%-69%); F (0%-59%)

### **Tentative Schedule (Subject to change as we progress through the semester):**

<i>Week 0</i>		
08/17/09	Syllabus & Introduction	
<i>Week 1</i>		
08/24/09	Introduction to Operating Systems	Read Chapter 1
<i>Week 2</i>		
08/31/09	Processes	Read Chapter 2
<i>Week 3</i>		
09/07/09	Interprocess Communication	Read Chapter 2; Assignment 1 due on Sep. 07
<i>Week 4</i>		
09/14/09	Interprocess Communication	Read Chapter 2
<i>Week 5</i>		
09/21/09	Scheduling	Read Chapter 2 Assignment 2 due on Sep. 21
<i>Week 6</i>		
09/28/09	Memory Management	Read Chapter 3

<i>Week 7</i>		
10/05/09	File Systems	Read Chapter 4 Assignment 3 due on Oct. 05
<i>Week 8</i>		
10/12/09	<b>Review for midterm Exam</b>	<b>Midterm Exam Oct.16</b>
<i>Week 9</i>		
10/19/09	File Systems	Read Chapter 4
<i>Week 10</i>		
10/26/09	Deadlocks	Read Chapter 5
<i>Week 11</i>		
11/02/09	Input/Output	Read Chapter 6 Assignment 4 due on Nov. 03
<i>Week 12</i>		
11/09/09	Distributed Operating Systems	Readings from course website
<i>Week 13</i>		
11/16/09	Distributed Operating Systems	Readings from course website Assignment 5 due on Nov. 16
<i>Week 14</i>		
11/23/09	Distributed Operating Systems	Readings from course website
<i>Week 15</i>		
11/30/09	A Look at Windows Vista	Chapter 11
<i>Week 16</i>		
12/07/09	<b>Review for Final Exam</b>	<b>Final Exam, Dec. 9-15 (Tentative)</b>

### **General Policies:**

You are responsible for all class work missed, regardless of the reason for having missed the work. No make-up exams or quizzes will be given, so please be sure to complete and submit your exams/quizzes by their due date. Refer to the CSU Catalog (<http://aa.colstate.edu/advising/a.htm#Absence Policy>) for more information on class attendance and withdrawal.

Students are responsible for keeping pace with the progress of the course. Should any concerns about the course's contents be addressed, students should immediately consult with the instructor by email or during office hours. In addition to regularly reading from the text book, students must visit the course's website at least once a day for recent updates and announcements.

### **Academic dishonesty**

Academic dishonesty includes, but is not limited to, activities such as cheating and plagiarism. It is a basis for disciplinary action. Collaboration is not permitted on assignments or exams/quizzes in this course. Any work turned in for individual credit must be entirely the work of the student submitting the work. You may share ideas but submitting identical assignments (for example) will be considered cheating.

**You may discuss course material and help one another with debugging, however, I expect any work you hand in for a grade to be your own. Written and programming assignments may not contain sections that have been imported verbatim from an outside source, be it online (such as web page) or offline (such as a book or an article). The penalty for the first occurrence of this type of academic dishonesty is a zero grade on the**

**assignment; the penalty for the second occurrence is a failing grade for the course.**

A simple way to avoid inadvertent plagiarism is to talk about the assignments, but don't read each other's work or write solutions together. Keep scratch paper and old versions of assignments until after the assignment has been graded and returned to you. **If you have any questions about this, please see me immediately.**

For assignments, access to notes, textbook, books and other publications is allowed. Stealing, giving or receiving any code, diagrams, drawings, text or designs from another person (CSU or non-CSU) is not allowed. Having access to another person's work on the system or giving access to your work to another person is not allowed. It is your responsibility to keep your work confidential.

No cheating in any form will be tolerated. The penalty for the first occurrence of academic dishonesty is a zero grade on the assignment or exam/quiz; the penalty for the second occurrence is a failing grade for the course. For exams/quizzes, access to any type of written material or discussion of any kind (except with me) is not allowed. ([http://aa.colstate.edu/advising/a.htm#Academic Dishonesty/Academic Misconduct](http://aa.colstate.edu/advising/a.htm#Academic%20Dishonesty/Academic%20Misconduct))

### **CSU ADA Statement**

If you have a documented disability as described by the Rehabilitation Act of 1973 (P.L. 933-112 Section 504) and Americans with Disabilities Act (ADA) and would like to request academic and/or physical accommodations please contact Joy Norman at the Office of Disability Services in the Center for Academic Support and Student Retention, Tucker Hall (706) 568-2330, as soon as possible. Course requirements will not be waived but reasonable accommodations may be provided as appropriate.