# CSCI, 430, 01W, Introduction to Operating Systems

COURSE SYLLABUS: Summer I 2020

## INSTRUCTOR INFORMATION

Instructor: Derek Harter, Ph.D.
Office Location: Science 355
Office Hours: Zoom/By Appointment
University Email Address: Derek.Harter@tamuc.edu
Preferred Form of Communication**:** e-mail

## COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

**Required:**
Operating Systems Internals and Design Principles (2011). 7th Edition. by William Stallings, Prentice-Hall Inc., 2011, ISBN-10:013230998X.

**Recommended:**
Operating System Concepts (2006). 7th Edition. by A. Silberschatz and P. Galvin, John Wiley & Sons, Inc., ISBN 0-471-69466-5.

## Course Description

A study of operating systems with emphasis on a multiprogramming environment; concentrates on principles involved in resource management; topics such as job scheduling and memory management are also studied. Prerequisites: CSCI 241 or COSC 2325; and CSCI 270 or COSC 2336. (3 credit hours)

## Student Learning Outcomes

1. (SLO430.1) Students will be able to identify the basic components, and functions of OS.

The *syllabus/schedule are subject to change.*

2. (SLO430.2) Students will be able to identify modern memory management techniques.
3. (SLO430.3) Students will be able to identify components of multiprogramming and multiuser OS.
4. (SLO430.4) Students will be able to identify processes, threads, and their management by the OS.
5. (SLO430.5) Students will be able to identify concurrent programming techniques and job scheduling.
6. (SLO430.6) Students will learn about some commercially available modern OS.

## COURSE REQUIREMENTS

### Minimal Technical Skills Needed

Students should be proficient in a high level programming language, like C++, Python or Java.

### Instructional Methods

All materials, assignments and tests will be conducted through the D2L MyLeo Online learning system.

### Student Responsibilities or Tips for Success in the Course

To plan a minimum of three hours of outside preparation for each hour of class is a safe time allocation for successfully completing the course.

## GRADING

Final grades in this course will be based on the following scale:

A = 90%-100%
B = 80%-89%
C = 70%-79%
D = 60%-69%
F = 59% or Below

Assignments: There will be regularly assigned homework problems and programming problems. Assignments will be given and returned via the online MyLeo Online (D2L) system as a convenience to the students and the instructor. In general, we will probably have 1 written assignment (problem set) and/or 1 programming assignment for each of the major parts of the course. It is very important that students follow the instructions carefully on the assignments. It is the student's responsibility to have all assignments ready on time by the given due date. Late assignment may not be accepted or may be

penalized and assignment may not be accepted beyond a certain time. Important material from the text and outside sources will be covered in class. Students should plan to take careful notes as not all material can be found in the texts or readings. Discussion is encouraged as student-procured outside material relevant to topics being covered. End of chapter activities and online activities may be assigned to reinforce material in the text.

Exams: Five exams will be given. The exams will not be comprehensive, and will focus on the particular materials/readings just covered each of the 5 weeks of the summer course. The instructor may add other exams as they see necessary.

### Assessments

Exams (5): 50% (10% each)
Problem Sets (5): 25% (5% each)
Programming Assignments (5): 25% (5% each)

## TECHNOLOGY REQUIREMENTS

### LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:
https://community.brightspace.com/s/article/Brightspace-Platform-Requirements

LMS Browser Support:
https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

YouSeeU Virtual Classroom Requirements:
https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements

## ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

**Note:** Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each

student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

## COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

### Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

https://community.brightspace.com/support/s/contactsupport

### Interaction with Instructor Statement

Please use e-mail and through the MyLeoOnline course to ask questions and for help, and to set up additional appointments if needed. We may use some of the MyLeoOnline virtual classroom tools this semester for online class feedback sessions.

## COURSE AND UNIVERSITY PROCEDURES/POLICIES

### Course Specific Procedures/Policies

There will be no make up or extra credit for late assignments. You must turn in all assignments by the require due date, or notify the instructor with a valid reason for missing an assignment.

### Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

## University Specific Procedures

### Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook.
http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx

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Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum:
https://www.britannica.com/topic/netiquette

## TAMUC Attendance

For more information about the attendance policy please visit the Attendance webpage and Procedure 13.99.99.R0.01.
http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf

## Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

Undergraduate Academic Dishonesty 13.99.99.R0.03

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf

Graduate Student Academic Dishonesty 13.99.99.R0.10

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf

## Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

**Office of Student Disability Resources and Services**
Texas A&M University-Commerce
Gee Library- Room 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: studentdisabilityservices@tamuc.edu
Website: Office of Student Disability Resources and Services
http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/

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## Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

## Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the Carrying Concealed Handguns On Campus document and/or consult your event organizer.

Web url:
http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

## COURSE OUTLINE / CALENDAR

Unit One: Operating System Concepts (Chapters 1, 2)
- Chapter 1. Computer System overview (Week 1)
- Chapter 2. Operating system overview (Week 1)
- Test 1 (Week 1)

Unit Two: Processes and Threads (Chapters 3, 4)
- Chapter 3. Process description and control (Week 2)
- Chapter 4. Threads (Week 2)
- Test 2 (Week 2)

Unit Three: Concurrency (Chapters 5, 6)
- Chapter 5. Concurrency I: Mutual exclusion (Week 3)
- Chapter 6. Concurrency II: Deadlock/Starvation (Week 3)
- Test 3 (Week 3)

Unit Four: Memory Management (Chapters 7, 8)
- Chapter 7. Memory management (Week 4)
- Chapter 8. Virtual memory (Week 4)

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Test 4 (Week 4)

Unit Five: Scheduling (Chapters 9, 10)

Chapter 9. Uniprocessor scheduling (Week 5)

Chapter 10. Multiprocessor scheduling (Week 5)

Test 5 (Week 5)

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