CMPS-500 Operating Systems
Credit: 3 hours

Catalog Description: Study of resource management for multiprogramming and time-sharing operating systems, supervisors, scheduling I/O control systems, and interrupt handling will be discussed.

Prerequisite: Consent of instructor.

Instructor: Dr. M. A. Salam**,** Computer Science Department, T.T**.** Allain Hall, Room 145, Phone: (225) 771- 4383, and Email: md_salam@subr.edu.

Course Goals:

1. Describe the basic organization of computer systems
2. Understand the structure of computer operating systems
3. Understand the process management of operating systems
4. Understand the threads, deadlines, process synchronization, and CPU scheduling
5. Understand the concept of memory management techniques

Course Objectives and Learning Outcomes: Upon completion of the course, students will be able to:

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1. Understand the various notion of a process and process features [Outcome a]
2. Explain the functions of modern operating systems [Outcome a]
3. Analyze and contrast among CPU scheduling algorithms [Outcome b]
4. Evaluate the techniques for achieving synchronization [Outcome b]
5. Describe the various ways of organizing memory [Outcome a]

Computer Science Program Outcome:

- **Outcome a:** an ability to apply knowledge of computing and mathematics appropriate to the discipline, [PEO1]
- **Outcome b:** an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution, [PEO2]
- **Outcome c:** an ability to design, implement, and evaluate a computer based system, process, component, or program to meet desired needs. [PEO2]

Program Educational Objectives (PEO):

The educational objectives of the Computer Science Program are to produce graduates who:

PEO1:   Are thoroughly trained in methods of analysis, including the mathematical and computational skills appropriate for problem solving.

PEO2:   Have developed the skills pertinent to the design of computing systems, including the ability to formulate problems, to think creatively, to synthesize information, to work collaboratively, and to communicate effectively.

Textbook: Operating System Concepts, 9th Edition by Abraham Silberschatz, Peter Baer Galvin, and Greg Gagne, John Wiley & Sons, Inc., ISBN: 978-1-118-06333-0, ©2013, 992 pages.

References:

1. http://www.os-book.com/

Class Schedule: 11:00 am – 12:20 pm on Tuesday and Thursday, Room 204, Henry Thurman Hall.

Evaluation and Grading: Standard grading scale will be followed. Following is a tentative distribution of various components of the course:

		Grading Scale	
Project	20%		
Midterm	30%	A:	90-100%
Quizzes	15%	B:	80-89%
Homework	5%	C:	70-79%
Final	30%	D:	65-69%
Total	100	F:	Below 65%

Project and Term Paper:
Each student is required to study a particular topic in depth by surveying the literature, proposing his/her approaches to a problem on the topic, and evaluating the proposed solutions through simulations and/or analytical techniques. The project may be done individually or in a team of two students, provided that the tasks of each team member are clearly identified. All projects must be approved by the instructor. Each student or team must submit a brief project proposal that outlines project objectives and work plan. Project proposals are due within the first three weeks of classes. You are encouraged to discuss project ideas with the instructor and to submit your proposal as early as possible.

Exams:
There will be one midterm and one final examination. **It is mandatory that you take the midterm and final**. **Make-up exam will be given in extenuating circumstances only.** All examinations missed due to illness or emergency requires a **written, verified excuse** or a grade of zero will be assigned.

Quizzes:
Quizzes will be given in class at the discretion of the instructor. **No make-up quizzes will be given**. **At any time without any advance notice, pop-up quiz should be expected.** So, be in time and try not to miss classes.

Assignments:
Homework will be assigned and collected. **Late assignments will not be accepted**. Selected assignments will be graded. The intent of assigning and collecting homework is to evaluate the progress of the students in mastering the concepts presented. Use regular-size paper, staple the sheets together, and put your name and homework number at the top or on the cover page.

Attendance:
Students are responsible for all information covered in class. Attendance is strongly recommended and 5% bonus will be assigned.

Plagiarism:
Plagiarism in any course work (home works, quizzes, projects, exam, etc.) will not be tolerated. It is a serious academic offense, and can result in a variety of actions, such as, F grade for that course. Identified cases of copying, cheating, or submitting work that is not your own will be acted as per university regulations.

Changes in Course Requirements:
Since all classes do not progress at the same rate, the instructor may wish to modify the above mentioned requirements or their timing as circumstances dictate. For example, the instructor may wish to change the number and frequency of examinations, or the number and sequence of assignments. If such modification is needed, the student will be given adequate notification. Moreover, there may be non-typical classes for which these requirements are not strictly applicable in each instance and may need modification. If such modification is needed, it will be in writing and conform to the spirit of this policy statement.

Electronic Devices:
Please use common courtesy when bringing cellular phones and other portable electronic devices into class.
They should be set to a non-audible signaling mode. If it is absolutely necessary to answer a cellular phone or beeper call, please discretely exit the classroom and do so. Please use common sense as to what constitutes an absolute necessity. *No electronic devices such as cellular phones, laptop computers are allowed during tests without prior permission of the instructor.*

DISABILITY STATEMENTS:
Students with documented disabilities who believe that they may need accommodations in this class are encouraged to contact the Disability Services Coordinator in the Office of Disability Services, 246 A.C. Blanks Hall, 225-771-3546 (Voice), 225-771-3949 (Fax), as soon as possible to ensure that such accommodations are implemented in a timely fashion. Students who need accommodations must be registered with the Office of Disability Services. Students are responsible for informing the instructor of any instructional accommodations and/or special learning needs at the beginning of the semester. All discussions will remain confidential.