NORFOLK STATE UNIVERSITY

CSC564 Operating Systems   (3 credit hours)

FALL 2014:   Monday & Wednesday 4:30 – 6:00,   RTC 200

Instructor: Dr. Thorna Humphries, Associate Professor of Computer Science

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Hours: M 2:00-3:30, Tu 1:30-2:30, W 10:00 – 11:30, 2:30-3:30, Th 2:30 – 3:30, other times by appt.

COURSE DESCRIPTION, PRE-REQUISITES, CO-REQUISITES
Topics include the history and evolution of operating systems, the concepts behind and structure of various operating systems, process scheduling, inter-process communication, input and output, multiprogramming, memory management, and file systems. Concepts of distributed operating systems are introduced.

PREREQUISITES:

 Graduate Standing

COURSE RATIONALE

This course is an upper level undergraduate course. It provides fundamental conceptual knowledge about operating systems. It will cover the basic concepts of operating systems.

COURSE GOALS *AND* MEASURABLE INTENDED STUDENT LEARNING OUTCOMES
 The major goals of the course:
- To introduce basic as well as advance concepts in operating systems.
- To identify software design issues for distributed systems.
- To provide exposure to current topics in operating system research by reading and reviewing journal papers.

 Upon completion of the course, students should
- Understand the basic and current concepts underlying modern operating systems
- Understand important issues in the design of these concepts in modern operating systems
- Understand the role of the operating system with respect to security and protection
- Understand file system organization
- Understand how a distributed system works.
- Be able to review a journal publication

COURSE MATERIALS / REQUIRED TEXT(S) / SUPPLEMENTARY READINGS
 Text: *Operating System Concepts,* 9th Edition, A. Silberschatz, P. Galvin, and G. Gagne, John Wiley and Sons, Inc., 2013.

 References:
- *Operating Systems, 3*rd Edition, Gary Nutt, Pearson/Addison Wesley, 2004.
- *Modern Operating Systems, 3*rd Edition, Andrew Tanenbaum, Pearson/Prentice Hall, 2008.
- *Operating Systems: Internals and Design Principles*, 6th Edition, William Stallings, Pearson/ Prentice Hall, 2009.
- Handouts from the instructor

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PRIMARY METHOD(S) OF INSTRUCTION / METHODS TO ENGAGE STUDENTS

 The primary method of instruction will be lectures by the instructor. Students will also participate through class and group discussions.

COURSE OUTLINE / CALENDAR (Expectations for Student Engagement in the Course)

Week	Chapter (Topic)
1	Introduction
2	Computer System Structures
3	Process Management
4	Threads
5	CPU Scheduling/ 1st Test
6	CPU Scheduling
7	Synchronization
8	Synchronization
9	Deadlock
10	2nd Test/ Main Memory
11	Virtual Memory
12	Virtual Memory
13	Virtualization/Virtual Machines
14	File Systems
15	Security
16	Final Exam

The schedule is subject to change at the discretion of the instructor or depending upon the progress of the class.

RELATED UNIVERSITY-WIDE AND COURSE-SPECIFIC REQUIREMENTS

This course will require that students use and enhance the following skills.
- **Writing**
- **Information Technology Literacy**
- **Oral Communication**
- **Critical Thinking**

EVALUATION / ASSESSMENT METHODS

Students will be evaluated through examinations, article reviews, homework assignments, laboratory exercises, and a final project.

GRADING STANDARDS / EVALUATION CRITERIA

Tests...60%

    Test1………………………….20%
    Test2………………………..20%
    Test3………………………..20%
Article Reviews...5%
Assignments/Labs..…………....................20%
Project……..………………………..…15%

>= 50	F
51 - 60	D
61 - 69	C
70 - 75	B-
76 - 85	B
86 - 89	B+
90 - 100	A

- **I Grade** - No incomplete grades will be given except for illness or other tragic circumstances. In either case, proof of the circumstance must be provided.

- **Late Assignments** - All assignments are expected at the due date. Each student has two late passes. After these are used, assignments and labs that are not turned in on time will be penalized a letter grade for each day that they are late, weekends included. Late passes cannot be applied to the project.
- **Make-up Exams** - It is the responsibility of the student to arrange a make-up exam. The student must provide an official university excuse.
- **Class Participation** - Class participation is not averaged into your grade. However, it will be used to determine borderline grades.

ACADEMIC INTEGRITY STANDARDS

The Computer Science Department adheres to the University Policy on class attendance. The University Policy states the following:

The University expects students to attend all classes. While unnecessary absences are discouraged, the University recognizes that, on occasion, students may have legitimate reasons for being absent. Thus, a student will be permitted one "unexcused" absence per semester hour credit or the number of times a given class meets per week. Once a student exceeds the number of allowed unexcused absences, an instructor may require an official university excuse. Not more than 20% of class meetings (excused and/or unexcused) may be missed by a student during a given semester.

At the discretion of the instructor, a student whose absences exceed 20% of scheduled class meetings for the semester may receive a grade of "F" for the course.

Students have the responsibility to confer with their instructors regarding all absences or intended absences. If sudden departure from the campus (for an emergency or extraordinary reason) prevents a student from communicating with each of his or her instructors, the student is expected to notify the Office of Student Services/Judicial Affairs within 48 hours. Class excuses are issued for legitimate reasons (medical, funerals--immediate family members only, official university business/activities, etc.) by the Office of Student Services/Judicial Affairs. Official written documentation may be required. Notes from relatives, friends, etc., are not accepted as "official" documentation for absences. The Office of Student Services/Judicial Affairs will determine if an absence is legitimate and if an excuse will be issued.

Students who become ill are encouraged to report to the Student Health Center, located in Spartan Station, for "minor" medical treatment. A current NSU ID card must be presented prior to treatment. Written verification of illness issued by the Health Center should be carried to the Office of Student services/Judicial Affairs, and an official University excuse should be obtained. Students residing in on-campus housing facilities are governed by the same policies and procedures as non-residential students insofar as class attendance and class excuses are concerned.

Expectations concerning Student conduct are as follows:
- Students are encouraged to actively participate in class.
- Students are expected to arrive on time to class.
- Students are expected to abide by the ACM Code of Ethics.
- Students should place phones on pager or silent mode upon entering class.

BLACKBOARD INSTRUCTIONS
All PowerPoint presentations, homework assignments, and laboratory assignments will be posted via Blackboard.

AMERICANS WITH DISABILITIES ACT (ADA) STATEMENT
In accordance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ADA) of 1990, if you have a disability or think you have a disability, we ask that you please contact the Disability Service office.
>   **Location:** Student Services Building Suite 110, Room 110D
>   **Contact Person:** Janet Timberlake
>   **Telephone:** 757-823-8325   **Email**: jltimberlake@nsu.edu

UNIVERSITY ASSESSMENT STATEMENT
As part of NSU's commitment to provide the environment and resources needed for success, students may be required to participate in a number of university-wide assessment activities. The activities may include tests, surveys, focus groups and interviews, and portfolio reviews. The primary purpose of the assessment activities is to determine the extent to which the university's programs and services maintain a high level of quality and meet the needs of students. Students will not be identified in the analysis of results. Unless indicated otherwise by the instructor, results from University assessment activities will not be computed in student grades.

RETENTION ALERT ADVISORY
The Retention Alert policy provides a framework for establishing a campus network of responders including both academic and student affairs agents to increase a safety net so students are less likely to leave the University before graduating. Based on your classroom performance you may be referred to the appropriate responder through Retention Alert.