Academic Inquiries: Nanchang University
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Nanchang University
CS 35: Operating System

Credit: 4

Contact Hours

This course is composed of 24 lecture sessions, 3 tutorial sessions and 9 office contact hours. Each lecture session takes 2 contact hours in length; each tutorial session takes 3 contact hours in length;There will be a Q-A review session(3 contact hours) and Final Exam (3 contact hours)at the end of this term. This course has 72 contact hours in total.

Course Description

This course covers the principles of operating systems. It emphasizes the basic concepts of OS kernel organization and structure, computer organization, processes and threads, Java multi-thread programming, concurrency and synchronization, memory management including virtual memory, file systems, distributed system and Java network programming, virtualization and cloud, OS security, and I/O systems.

Textbooks:

Modern Operating Systems, 4th Edition, By Andrew S. Tanenbaum, Herbert Bos, Published by Pearson, 2015
Java Threads: Understanding and Mastering Concurrent Programming, Scott Oaks, ISBN: 0596007825. O'Reilly

Course Learning Outcomes

After taking this course, students should be able to:
1) understand and apply concepts of both classic and modern operating systems;
2) analyze operating systems by designing and implementing both analytical and simulation models using Java or other programming languages.;
3) apply specific operating system constructs in Java to create real-world system-level programs and applications.

Grading

- Participation and discussion 10%
- Assignment and Homework 20%
- Midterm 30%

- Final Exam(including writing paper) 40%

A+ 96-100	A 90-95	A- 85-89
B+ 82-84	B 78-81	B- 75-77
C+ 71-74	C 66-70	C- 62-65
D 60-61	F < 60	

Course Schedule

The course has 24 class sessions in total. All sessions are 2 contact hours in length. At the end of this term, there will be a Q-A review session(3 contact hours) and Final Exam (3 contact hours).
Note: the course outline and required readings are subject to change.

Class 1:
Introduction

Class 2:
Processes And Threads

Class 3:
Processes And Threads(Cont.)

Class 4:
Processes And Threads(Cont.)

Class 5:
Memory Management

Class 6:
Memory Management(Cont.)

Class 7:
File Systems

Class 8:
File Systems(Cont.)

Class 9:
Input/Output

Class 10:
Input/Output(Cont.)

Class 11:

Review

Class 12:
Midterm

Class 13:
Deadlocks

Class 14:
Deadlocks(Cont.)

Class 15:
Virtualization And The Cloud

Class 16:
Virtualization And The Cloud(Cont.)

Class 17:
Multiple Processor Systems

Class 18:
OS Security

Class 19:
OS Security(Cont.)

Class 20:
Case Study 1: Unix, Linux, And Android

Class 21:
Operating System Design

Class 22:
Operating System Design(Cont.)

Class 23:
Group Discussion: Operating System in Communication Industry

Class 24:
Final Review

Attending Policy

Regular and prompt attendance is required. Under ordinary circumstances, you may miss two

times without penalty. Each absence over this number will lower your course grade by a third of a letter and missing more than five classes may lead to a failing grade in the course. Arriving late and/or leaving before the end of the class period are equivalent to absences.

Policy on "Late Withdrawals"

In accordance with university policy, appeals for late withdrawal will be approved ONLY in case of medical emergency and similar crises.

Academic Honesty

Nanchang University expects all students to do their own work. Instructors will fail assignments that show evidence of plagiarism or other forms of cheating, and will also report the student's name to the University administration. A student reported to the University for cheating is placed on disciplinary probation; a student reported twice is suspended or expelled.

General Expectations:

Students are expected to:

— Attend all classes and be responsible for all materials covered in class and otherwise assigned;

— Complete the day's required reading and assignments before class;

— Review the previous day's notes before class and make notes about questions you have about the previous class or the day's reading;

— Participate in class discussions and complete required written work on time;

— Refrain from texting, phoning or engaging in computer activities unrelated to class during the class period;

— While class participation is welcome, even required, you are expected to refrain from private conversations during the class period.

Special Needs or Assistance

Please contact the Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material. Our goal is to help you learn, not to penalize you for issues which mask your learning.