Nanchang University
CS331: Systems Programming

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 provides you with a basic understanding of the issues involved in writing system programs on a Unix system. Topics includes manipulating system processes, files, basics of C programming, shell, I/O library, sockets, UNIX tools for software development etc.

Textbook Information:

UNIX, 3rd Edition: The Textbook by Syed Mansoor Sarwar and Robert M. Koretsky, ASIN: B01N6XZHJ
C++ How to Program, 6th edition, by Paul Deitel and Harvey Deitel, 2008 ASIN: 0133378713

Grading

Participation	10%
Assignment	20%
Lab	20%
Midterm	20%
Final Exam	30%

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 to the Systems Programming

Class 2:
A "Quick Start" into the UNIX Operating System
Editing Text Files

Class 3:
Files and File System Structure
File Security

Class 4:
Redirection and Piping
Processes

Class 5:
UNIX Tools for Software Development

Class 6:
Shell Command

Class 7:
Shell Programming and and Scripting

Class 8:
Terminal Controls, Shell Syntax, Expansion and Comparison

Class 9:
Condition and Loops

Class 10:
Control Flow

Class 11:
I/O Library, System Calls

Class 12:
Fermat's Theorem

Class 13:
Midterm

Class 14:
Basics of C Programming, Relation to C++

Class 15:
Standard Library Algorithms

Class 16:
Compiler and Memory

Class 17:
Pointers and Arrays

Class 18:
Linux Environment Overview: Environment Variables, Time and Date

Class 19:
Temporary Files and User Information

Class 20:
Process Structure and Signals

Class 21:
Pipes and Threads Introduction

Class 22:
Stream Input/Output

Class 23:
Sockets Introduction

Class 24:
Review for Final

Lab Schedule

Room:305
Time: 15:00-16:00 (Monday, Thursday)

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.