Syllabus for System Programming, Spring 2007

by

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Class website: http://oris.csie.ntu.edu.tw/courses/SP2007

The class meets on every Tuesday from 9:10AM to 12:00PM at Room 101 (Session 1) and Room 102 (Session 2) in the CSIE building.

TAs:

陳勇銘，張文賢 and TBD (Office: CSIE Rm 436 and 438)

Course Description:

This course is designed for sophomore CS-major students and serves as the introduction system-level course. In this course, we will learn how to write the programs using system services in Unix-like systems. The following are the goals of this course.

1. To be familiar with the UNIX-like systems.
It means to know how to make use of many tools/services provided by the system: commands, library calls or system calls. It also means that you understand the model of computation that UNIX presents.

2. To become good system programmers.
It means that you should know how to write a descent C program in Unix/Linux as the semester is over. However, this course should not limit yourself in writing system programs in Unix/Linux. The learning process that you will have in this course should teach you how to program in any other operating systems which you might use later in your career.

At the end of the semester, you may want to go through this list again to see if the goals are met. We will appreciate if you could provide us your comments regarding the class at the end of the semester. (Well, you can send us your comments at any time. However, I guess that it is more reasonable to review the class at the end of the semester.)

Prerequisites:

The students should be familiar with data structures and basic C/C++ programming.

Text Book:

There is one required text book: “Advanced Programming in the Unix Environment” second edition by W. Richard Stevens and Stephen A. Rago, Addison-Wesley, 2005. It is distributed by 開發圖書有限公司. Other reference books, internet website will be available on the class website.

Covered Topics:

- Preface/Introduction
- Standardization and Implementation
- File I/O
- Standard I/O Library
- Files and Directories
- System Data Files and Information
- Environment of a Unix Process
- Process Control
- Signals
- Inter-process Communication
- Thread Programming

Grading Criteria (Subject to Changes):

We will have one mid-term, one final, and four programming assignments. Each written exam counts 35% of your final grade, and the four programming assignments in total count 30% of your final grade.

Policy:

Late Assignment: the programming assignments should be handed in via the provided web-based assignment submission system. All assignments must be handed in before 11:59PM at their corresponding due days. Because of the large class size, it is very likely that the assignment submission web site will be extremely busy at the last minutes. You should not wait until the last minute to submit your assignments. It is your responsibility to make sure that your assignments are handed in before the deadline. So, do it as early as possible. The TA's will not accept the assignments via emails or any other means. Check out the submission web site to see how to make sure your assignments are submitted successfully.

Only the assignments submitted before the deadline will receive full credit. 5% of your grade will be deducted for single day delay.

Plagiarism: There is NO tolerance for plagiarism. (As an engineer, you should check out IEEE's code of ethics.) You can discuss the assignments with your classmates and/or friends. However, you MUST write the codes by yourself. Certain software will be used to detect software plagiarism. It is YOUR responsibility to protect your own codes so that please do not leave your codes on the table or screen.

Schedule:

The class schedule is available on the class web site. However, the class schedule is tentative and subjected to changes. Any change will be announced in the class and the

class web site.

Lecture slides and handouts will be available on the class web site. Please check out the slides and handouts before the class. The handouts will NOT be distributed in the class. Note that the lecture slides should NOT be the only materials for you to study. They only serve as the guideline for you to study other materials including textbook and online resources. It is very likely that you will fail the exam if you only study the lecture slides.

Programming Assignments:

Unless otherwise specified, all the assignments are individual assignments. Each student must submit his/her own assignments. Please read the policy section first before you start to work on your programming assignments. The submission must be done via the assignment submission web site, which will be announced later in the class.