CSE 320
System Fundamentals II
Course Overview

TONY MIONE

Course Information

- CSE320 – System Fundamentals II
- Spring 2022
- Instructor: Antonino (Tony) Mione
- Meetings: Tue/Thur 10:30-11:50 AM

Instructor

- Antonino (Tony) Mione
- Office: B425
- Email: antonino.mione@sunykorea.ac.kr
- Course Website: *http://www3.cs.stonybrook.edu/~amione/CSE320_Course/index.html*
- Phone: +82-032-626-1226
- Office Hours: *Mon, Tue, Wed, Thur: 1:00-2:00PM [Or by appointment]*

Announcements – Spring2022

COVID-19 Mitigation Procedures

- Courses of <=40 students are in person
- Courses of >40 students are online

Classroom Management

If a student develops symptom(s) and/or is confirmed to be infected with COVID-19 before class, she/he is required to report that to the instructors of all of her/his courses immediately, but no later than the start of the classes. Those students must not attend all the in-person classes he/she is enrolled in for one week (if confirmed) or be tested (in case of showing symptoms) prior to returning to class. Instructors must fully accommodate their needs during this period by providing all of the relevant course materials as well as online support for tests, office hours, etc. to ensure students remain up to date. These classes will continue to be held in person.

If an instructor identifies a suspected case in a class, the class should be dismissed immediately. The suspected student and those considered to have been in close contact with the suspected student (by government definition, as identified by the instructor) should be tested (RAT) prior to the next scheduled meeting of the class. Depending on the outcome of the tests, the class could continue in person or switch to online for a week.

If an instructor is confirmed to be infected with COVID-19, all of his/her class(es), will be held online for one week from the date of the positive test result.

Announcements – Spring2022

There is a 2-stage Contingency Plan in place regarding campus conditions

In the event of a crisis situation, we have a two-stage contingency plan to shift to the online class mode according to the MoE's recommendation.

- Stage 1. If the rate of the confirmed case surpasses 5% of the members of the university community (enrolled students, faculty, and staff), most classes except essential major or lab courses* should be switched to online. (*Those essential major or lab courses are designated by department chairs and approved by the provost.)
- Stage 2. If the rate of the confirmed case surpasses 10% of the university community (enrolled students, faculty, and staff), all classes should be provided online.

Misc Information

- Prerequisites:
  - C or higher: CSE 220 and CSE major
- This course will introduce programming and essential concepts of operating systems, compilers, concurrency, and network communications, focused around several cross-cutting examples, such as memory management, error handling and threaded programming.
- Understanding Operating System interfaces and facilities is essential to writing high-end, sophisticated applications.
  - Operating systems provide many facilities with features that would be prohibitive for a development team to implement from scratch

Course Overview

- CSE320 – Course Outcomes
  - Develop an understanding of the layers of software that lie between an application program and the underlying hardware and how they inter-operate.
  - Develop an ability to program with operating system APIs.
  - Develop an ability to write and analyze multi-threaded programs.

Major Course Topics

- C Programming
- Memory Hierarchy, Caches, Virtual Memory
- Operating System Processes and POSIX abstractions
- Operating System Scheduling and I/O
- Basic Networking and Socket Programming
- Multi-threading and Parallel Programming

Textbook

- Required: *"Computer Systems: A Programmer's Perspective (3rd Edition)"* , Bryant, Randall E., O'Hallaran, David R., Pearson, 2016, ISBN: 978-0134092669.
- Recommended: *"The C Programming Language Second Edition",* Kernighan, Brian W., Ritchie, Dennis M., Prentice-Hall, 1988, ISBN10: 0-13113709.
- Recommended: "*C for Java Programmers: A Primer*" , McDowell, Charlie.

Homework

- Several assignments will be given either from book problems or problems I create.
- These assignments will be to help you practice and understand theoretical concepts presented in class.
- Problems are due on fixed dates and times
- **All work will be completed on an individual basis (write your own code) *unless otherwise instructed!***
- You will use Blackboard to submit your completed assignments
- The usual drill: Start homework assignments as soon as they are given. I try to give more than enough time to complete these but they hold some challenges and working last minute will add considerable stress.

Late Homework Policy

- Assignments must be turned in by the due date and time.
- Any part of an assignment that's late means the entire assignment is late.
- If your assignment is incomplete or not entirely working by the due date, turn in what you have to get some partial credit.
- If you have an emergency situation, email me before the due date and I may be able to work something out (strictly on a case-by-case basis).
- A penalty may be applied to the score.

Bottom line: Plan ahead, start early!

Cooperation vs. Copying

- Cooperation (talking over problems) is a good way to learn and is encouraged
- ***Do not copy code. Do not let others look at or copy your code.***
- Copying is not allowed on homework or exams no matter the source (written or verbal)
- When you submit your homework or tests:
  - **You are pledging that the work is your own and you have not copied it.**
    - **==> Turning in copied work is academic dishonesty**
  - **You are also pledging that you have not allowed others to copy it.**

Academic Integrity

- Your work will be checked manually and automatically using software tools that very quickly and effectively identify similar source code. The tool compares every single homework submission against every other one.
- When you submit an assignment, you are claiming this is your own work! To do otherwise like:
  - copy code from a web site
  - duplicate a classmate's assignment
  - duplicate a classmate's assignment with minor changes (like variable names or minor reordering of code)
  - duplicate a similar assignment from a student in a previous semester

    It is considered ➔ **CHEATING** ➔
- Such a submission is Fraud and will be turned into the academic integrity committee
- Last semester, instances were reported from several classes including 101, 114, and others.

Academic Integrity

- If you cheat, you will be brought up on academic dishonesty charges before the College of Engineering and Applied Sciences. As an instructor, **I am required** to submit any evidence of suspected cheating to the administration!
- If I suspect cheating and turn it in: Once this is done, it is out of my hands (I cannot withdraw the report). All further interaction is with administration.
- If you are found guilty, the penalties can be severe and may include:
  - loss of scholarship support, and/or
  - ineligibility to graduate with honors, and/or
  - expulsion from the University
- The morals
  - start assignments early
  - ask for help if you are stuck!
  - If you are not sure of what might constitute academic dishonesty, **please ask me!**

Examinations

- Examination dates will be posted on the schedule page of the course website. Tentative dates are:
  - Midterm exam 1: Tues, 3/31
  - Midterm exam 2: Thurs, 5/12
- Final exam: 6/14/2022 : 9:00-11:30AM
- Do not miss exams
  - Arrange your work and travel schedules as needed to be present for examinations
  - Makeup exams will only be given for verified, officially sanctioned university activities. Makeup examinations may be oral.
- All examinations will be closed-notes and closed-book, except one sheet of notes (A4 or 8.5x11), both sides, handwritten

Grading

- **Assignments**– *45% (225 points)* - Assignments [about 8] will be given that will involve using concepts learned in class related to Unix APIs, memory management, and other OS related features.
- **Class Attendance/Participation –** 5% *(25 points)*
- **Midterm Exam 1 –** 15% *(75 points)* - A midterm exam based on reading and concepts presented in the lecture.
- **Midterm Exam 2 –** 15% *(75 points)* - A midterm exam based on reading and concepts presented in the lecture.
- **Final Exam** – 20*% (100 points)* - A cumulative final exam will provide questions that will cover the key concepts taught through the entire semester.

Re-Grading

- If you feel that your work (exam, homework, quiz, etc.) was not graded correctly, you may request a regrade no later than one week from the day grades are posted or announced
- Requests for regrades made after one week will not be entertained

Electronics in Class

- Cell phones should be put away during class
- Laptops may be used during periods where you are asked to work on an exercise during class
- Lecture slides are available on the course website for study before class.
- Talk to me after class if there's an issue with this policy

Disability

- If you have a physical, psychological, medical or learning disability, please contact the One-Stop Service Center.
  - Location: Academic Building A201
  - Phone: 626-1117
- The DSS will determine with you what accommodations, if any, are necessary and appropriate
- All information and documentation of disability is confidential

How to Succeed in this Class

- Attend class and **be on time!**
- Not all information is in my lecture notes or in the book
- I sometimes do in-class demos that emphasize non-obvious details
- The assignments will generally take a more time than you expect, so practice good time management
- Read the reading assignments and review the lecture notes
- Those who experiment and write extra code to explore concepts that were not assigned ("for fun") generally do best.
- Ask questions right away if confused. Ask in class, come to my office hours or send email. Don't stay confused and don't get behind! (This class can get ahead of you quickly!)
- Visite the course website: https://www3.cs.stonybrook.edu/~amione/CSE320_Course/
- Welcome and I hope you enjoy the class!