Operating Systems
CS314-001 Spring 2024 (CRN: 16276)

Welcome to CS314!

Instructor: Dr. Hiroshi Fujinoki
Office: EB 2034   **Office Phone**: (618) 650-3727
Email: hfujino@siue.edu
URL: www.cs.siue.edu/~hfujino/CS314/CS314_SEC1.html
Office Hours: Monday: 10:00 a.m.-12:00 p.m.
　　　　　　　　Tuesday: 11:30 a.m. -12:00 p.m.
　　　　　　　　Wednesday: 10:00 a.m.-12:00 p.m.
　　　　　　　　Thursday: by appointment (please make an appointment 24 hours prior
　　　　　　　　　　to the time you want to meet the instructor).
　　　　　　　　Friday: no office hour

Note 1: The above office hours will <u>not</u> be available during the final exam week and Spring Break weeks.
Note 2: The above office hours can be offered as zoom meetings, but the priority is for those who stop
　　by Dr. Fujinoki's office in person.

Class Meeting Room: EB-0140
Class Meeting Days: Tuesday and Thursday
Class Meeting Time: 9:30 – 10:45 a.m. (same time for T and R)

Note: item with "♣" symbol means an important item.

♣ Course Prerequisites:
CS286 (Computer Organization & Architecture) and CS240 (Introduction to Computing III)

♣ Grading:

Grading:	Weight:	Final Letter Grade:	
Weekly Quizzes:	15%	100-92:	A
Programming projects:	15%	91-82:	B
Midterm Exam:	35%	81-72:	C
Final Exam:	35%	71-62:	D
		Below 62:	F

♣ **Exams:**

- Exams will be **closed textbook** and **closed notes**.

- Makeup exam will be offered <u>only for medical emergency (with a signed doctor's letter)</u>.

- Absence from an exam or failing to submit your work by the end of an exam will result in zero point for the exam (except medical emergencies).

- Exams will cover reading assignments, the exercise questions posted to the course home (the course website), and the programming projects.

- No electronic devices ((smart) phones, PCs, and etc.) can be used during the exams. Use (including manipulating or watching one) of such electronic devices during an exam will be considered academic dishonesty.

- Any error regarding your graded exams should be reported to Dr. Fujinoki <u>within two weeks (14 calendar days) after your attendance status is posted to the course web site</u>.

Programming Projects (tentative plan): there will be one start-up and three programming projects in this course (Project 0, 1, 2, and 3, respectively). <u>Each programming project is an individual project</u> (i.e., not a team project). The topics in each programming project is described in separate handouts. The course programming projects use C/C++ on a UNIX-based system. The weight of the three projects is 5, 30, 35, and 30% (for Project 0, 1, 2, and 3, respectively) of your programming project grade.

> **Note 1**: the schedules of the programming projects are subject to change during a semester, depending of various factors, such as the number of the lecture cancellations due to severe weather and the progress of the lectures.

> **Note 2**: if we cancel some lectures, one of the programming projects may be dropped (the weight of the programming projects will be adjusted, if one of the projects is dropped).

Quizzes:
- Quizzes will be **closed textbook** and **closed notes**.
- Absence <u>without a prior consent</u> from Dr. Fujinoki will result in zero point except for medical emergency (a letter from your doctor is required).
- There will be 12 quizzes during this course.
- Your lowest quiz will be dropped from grading.

- If we cancel some lectures, some quizzes may be dropped (the weight of the quizzes to the course grade is still 15%).

Reading Assignments:

Textbook: The course materials are presented using PPT slides in this course, but they are the summaries of the chapters/sections in a required text book. Designated chapters in the textbooks are supposed to be read before each lecture. Subjects in the designated textbook sections will be covered in the exams even though those subjects are not explicitly mentioned in the lecture.

♣ **Attendance Policy:**
- Attendance will be taken at the beginning of lectures (being late more than 5 minutes will be considered absence).
- No penalty will be given up to two absences in a semester. For each absence beyond the second absence, -2 point penalty (in 100 scale) will be given to your next exam.
- The above penalty will not apply only to your medical emergency (however, you need to provide a written proof of medical service to waive the penalty).
- Any error regarding your class attendance status should be reported to Dr. Fujinoki within two weeks (14 calendar days) after your attendance status is posted to the course web site.

♣ **Academic Dishonesty:**

Following activities will be considered academic dishonesty and final letter grade of F can be given:
- Submitting work (such as homework assignments and projects) done by somebody else (this includes any human/electronic sources (such as web sites)).
- Watching and copying your neighbors' solutions during quizzes and exams.
- Modifying your solutions after they are graded.
- Using materials not allowed during quizzes and exams.
- Based on the policy of the School of Engineering, any academic dishonesty will be reported to the department chair and the dean of the School of Engineering.

♣ **Required Textbook:**

- Andrew S. Tanenbaum, "Modern Operating Systems", Prentice Hall.

Note: The textbook is required for everyone in this course. The instructor will never loan his textbook to any student in this course.

Other Required Skills/Knowledge:

Proficiency in C/C++ is required.

♣ **Disability Support:**

- Students who believe they may need accommodations in this class are encouraged to contact the office of Disability Support Services as soon as possible. It is the students' responsibility to alert the instructor to SIUE sanctioned accommodations. If anyone needs assistance from SIUE Disability Support Services, please contact them.

♣ **Other Notices:**

(1) Each of you is expected to spend <u>at least four hours</u> outside of the lectures,

(2) Important announcements will be made at the beginning of a lecture.

(3) If you are absent from a lecture, <u>it is your responsibility</u> to find the announcements and the contents in the missed lecture (you are suggested to talk to your classmates to find the announcements). It is suggested that you talk to your classmates for the details covered in each missed lecture.

(4) Each of you is expected to check "Weekly Notices" in the web site of this course (you can reach the course web site at www.cs.siue.edu/~hfujino/CS314/CS314_SEC1.html) at least twice in a week. The decisions regarding which course materials are posted belong to the course instructor. If any promised course material is missing in the course home, it is your responsibility to request such material to the course instructor (the course instructor will post such materials within at most one week since the request).

(5) Any grading problem should be reported within two weeks (14 days) after your grades are posted to the course home or the graded materials are returned in the classroom.

(6) Any electric device, such as smart phone, laptop PC, and tablet computer (except a calculator), should not be used during lectures and exams.

(7) E-mails sent to the course instructor during weekends and the break (spring break) may not be responded.

(8) Any special arrangement agreed between you and the course instructor (Dr. Fujinoki) should be documented (i.e., emailed or posted to the course home). Any promises or agreements orally made between you and the course instructor may not take effect until one is documented (it is your responsibility to document any such promises and agreements).

(9) The instructor is NOT responsible for loosing course credit by failing to use the information posted to the course home (including those when you do not check the CS314 home).

(10) Ask your questions to the course instructor whenever you have anything you do not have a clear answer for. Please do not make your own assumptions (if you do, you are responsible for any assumptions you make when they are not correct).

♣ Tentative Class Schedule (subject to change):

This schedule is tentative and subject to change.

Week #:	Day	Topics	Reading Assignments

Week 1: January 9 (T): Introduction to operating systems   Chapter 1 (1.1 through 1.7)
         Operating System Concepts (1)
         January 11 (R): **Quiz #1**, Operating System Concepts (2)   Chapter 1 (1.1 through 1.7)
- Programming Project #0 assigned   Handout

Week 2: January 16 (T): **Quiz #2**, Processes and process management (1)   Chapter 2 (2.1 through 2.5)
         January 18 (R): Processes and process management (2)   Chapter 2 (2.1 through 2.5)
- Programming Project #0 due

Week 3: January 23 (T): Processes and process management (3)   Chapter 2 (2.1 through 2.5)
         January 25 (R): **Quiz #3**, Programming project #1 discussions   Handout
- Programming Project #1 assigned

Week 4: January 30 (T): Threads and thread management (1)   Chapter 2 (2.1 through 2.5)
         February 1 (R): **Quiz #4**, Threads and thread management (2)   Chapter 2 (2.1 through 2.5)

Week 5: February 6 (T): Threads and thread management (3)   Chapter 2 (2.1 through 2.5)
         February 8 (R): **Quiz #5**, Process Deadlocks (1)   Chapter 3 (3.1 through 3.4)

Week 6: February 13 (T): Process Deadlocks (2)   Chapter 3 (3.5 and 3.6)
         Programming Project #1 due
         February 15 (R): **Quiz #6**, Programming project #2 discussions   Handout
         Programming Project #2 assigned

Week 7: February 20 (T): Deadlocks (3)   Chapter 3 (3.5 and 3.6)
         February 22 (R): Memory Management (1)   Chapter 4 (4.1 and 4.2)

Week 8: February 27 (T): **Midterm Exam**
         February 29 (R): Memory Management (2)   Chapter 4 (4.3 and 4.4)

Week 9: March 5 (T): **Spring Break**
         March 7 (R): **Spring Break**

Week 10: March 12 (T): Memory Management (3)   Chapter 4 (4.5 through 4.7)
         March 14 (R): Memory Management (4)   Chapter 4 (4.5 through 4.7)

Week 11: March 19 (T): **Quiz #7**, File System (1)   Chapter 6 (6.1)
         March 21 (R): File System (2)   Chapter 6 (6.2)
         Programming Project #2 due

Week 12: March 26 (T): **Quiz #8**, Programming project #3 discussions   Handout
Programming Project #3 assigned
      March 28 (R): File System (3)   Chapter 6 (6.3)

Week 13: April 2 (T): **Quiz #9**, File System (4)   Chapter 6 (6.4)
      April 4 (R): I/O Subsystems (1)   Chapter 5 (5.4 through 5.6)

Week 14: April 9 (T): **Quiz #10**, I/O Subsystems (2)   Chapter 5 (5.4 through 5.6)
      April 11 (R): I/O Subsystems (3)   Chapter 5 (5.4 through 5.6)

Week 15: April 16 (T): **Quiz #11**, I/O Subsystems (4)   Chapter 5 (5.4 through 5.6)
      April 18 (R): Topics To Be Announced
Programming Project #3 due

Week 16: April 23 (T): **Quiz #12**, Topics To Be Announced
      April 25 (R): Topics To Be Announced

Final Exam Week: May 2 (Thursday): **comprehensive** final exam, **8:00 - 9:40 A.M.**

- The list of the reading assignment is the minimum requirement. It is expected that each student voluntarily studies not only the required sections but other related sections or materials.
- If you have any problem for the above schedule, please contact to Dr. Fujinoki as soon as possible.
- Any question regarding this syllabus should be addressed to: hfujino@siue.edu

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