Operating Systems
CS314-001 Summer 2023 (CRN: 24862)

Welcome to CS314!

Instructor: Dr. Hiroshi Fujinoki
Office: EB 2034            Office Phone: (618) 650-3727
Email: hfujino@siue.edu
Office Hours: Monday: by appointment
              Tuesday: 2:00-3:00 p.m.
              Wednesday: by appointment
              Thursday: 2:00-3:00 p.m.
              Friday: no office hour

Note: The above office hour schedules do not apply to (1) the spring break, (2) the final exam week and (3) the week before the final exam week.

Class Meeting Room: EB-2170
Class Meeting Days: Tuesday and Thursday
Class Meeting Time: 11:00 a.m. – 1:40 p.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:

<table>
<thead>
<tr>
<th></th>
<th>Weight:</th>
<th>Final Letter Grade:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly Quizzes:</td>
<td>15%</td>
<td>100-92: A</td>
</tr>
<tr>
<td>Programming projects:</td>
<td>15%</td>
<td>91-82: B</td>
</tr>
<tr>
<td>Midterm Exam:</td>
<td>35%</td>
<td>81-72: C</td>
</tr>
<tr>
<td>Final Exam:</td>
<td>35%</td>
<td>71-62: D</td>
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<tr>
<td></td>
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<td>Below 62: F</td>
</tr>
</tbody>
</table>
Exams:

- Exams will be closed textbook and closed notes.
- Makeup exam will be offered only for medical emergency (with a signed doctor's letter).
- 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 and the exercise questions posted to the course home (the course website).
- 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 within two weeks (14 calendar days) after your attendance status is posted to the course web site.

Programming Projects (tentative plan - subject to change): there will be one start-up and three programming projects in this course (Project 0, 1, 2, and 3, respectively). Each programming project is an individual project (i.e., not a team project) if the course instructor does not explicitly allow team work. 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.
- Quiz schedules are subject to change.
- Absence without a prior consent 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:


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) This course expects each of you to work nine (9) hours other than attending lectures (this is also a policy of SIUE).

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

(3) If you are absent from a lecture, it is your responsibility 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_SU_2023/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. Any promises or agreements orally made between you and the course instructor may not take effect without a documentation (it is your responsibility to document any such promises and agreements).
**Tentative Class Schedule (subject to change):**

This schedule is tentative and subject to change.

<table>
<thead>
<tr>
<th>Week #</th>
<th>Day</th>
<th>Topics</th>
<th>Reading Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>(T)</td>
<td>Introduction to operating systems</td>
<td>Chapter 1 (1.1 through 1.7)</td>
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<tr>
<td></td>
<td>(T)</td>
<td>Operating System Concepts (1)</td>
<td>Chapter 1 (1.1 through 1.7)</td>
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<tr>
<td></td>
<td>(T)</td>
<td>Operating System Concepts (2)</td>
<td>Handout</td>
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<tr>
<td></td>
<td>(R)</td>
<td>Quiz #1, Processes and process management (1)</td>
<td>Chapter 2 (2.1 through 2.5)</td>
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<tr>
<td></td>
<td>(R)</td>
<td>Processes and process management (2)</td>
<td>Chapter 2 (2.1 through 2.5)</td>
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<tr>
<td></td>
<td></td>
<td>Programming Project #0 assigned</td>
<td></td>
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<tr>
<td>Week 2</td>
<td>(T)</td>
<td>Processes and process management (3)</td>
<td>Chapter 2 (2.1 through 2.5)</td>
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<td></td>
<td>(T)</td>
<td>Quiz #2, Programming project #1 discussions</td>
<td>Handout</td>
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<tr>
<td></td>
<td>(T)</td>
<td>Programming Project #1 assigned</td>
<td></td>
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<tr>
<td></td>
<td>(R)</td>
<td>Threads and thread management (1)</td>
<td>Chapter 2 (2.1 through 2.5)</td>
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<td></td>
<td>(R)</td>
<td>Quiz #3, Threads and thread management (2)</td>
<td>Chapter 2 (2.1 through 2.5)</td>
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<tr>
<td>Week 3</td>
<td>(T)</td>
<td>Threads and thread management (3)</td>
<td>Chapter 2 (2.1 through 2.5)</td>
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<td></td>
<td>(T)</td>
<td>Quiz #4, Process Deadlocks (1)</td>
<td>Chapter 3 (3.1 through 3.4)</td>
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<td></td>
<td>(R)</td>
<td>Process Deadlocks (2)</td>
<td>Chapter 3 (3.5 and 3.6)</td>
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<td></td>
<td></td>
<td>Programming Project #1 due</td>
<td>Handout</td>
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<td>Quiz #5, Programming project #2 discussions</td>
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<td>Programming Project #2 assigned</td>
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<tr>
<td>Week 4</td>
<td>(T)</td>
<td>Deadlocks (3)</td>
<td>Chapter 3 (3.5 and 3.6)</td>
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<td></td>
<td>(T)</td>
<td>Quiz #6, Memory Management (1)</td>
<td>Chapter 4 (4.1 and 4.2)</td>
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<td></td>
<td>(R)</td>
<td>Memory Management (2)</td>
<td>Chapter 4 (4.3 and 4.4)</td>
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<td><strong>Midterm Exam</strong></td>
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<tr>
<td>Week 5</td>
<td>(T)</td>
<td>Memory Management (3)</td>
<td>Chapter 4 (4.5 through 4.7)</td>
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<td></td>
<td>(T)</td>
<td>Memory Management (4)</td>
<td>Chapter 4 (4.5 through 4.7)</td>
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<td>Week 5</td>
<td>(R)</td>
<td>Quiz #7, File System (1)</td>
<td>Chapter 6 (6.1)</td>
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<td></td>
<td>(R)</td>
<td>File System (2)</td>
<td>Chapter 6 (6.2)</td>
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<tr>
<td></td>
<td></td>
<td>Programming Project #2 due</td>
<td></td>
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<tr>
<td>Week 6</td>
<td>(T)</td>
<td>Quiz #8, Programming project #3 discussions</td>
<td>Handout</td>
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<tr>
<td></td>
<td>(T)</td>
<td>File System (3)</td>
<td>Chapter 6 (6.3)</td>
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<td></td>
<td>Programming Project #3 assigned</td>
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Week 6 (R): Quiz #9, File System (4)  
(June 15) I/O Subsystems (1)  
Chapter 6 (6.4)  
Chapter 5 (5.4 through 5.6)

Week 7 (T): Quiz #10, I/O Subsystems (2)  
(June 20) I/O Subsystems (3)  
Chapter 5 (5.4 through 5.6)  
Chapter 5 (5.4 through 5.6)

Week 7 (R): Quiz #11, I/O Subsystems (4)  
(June 23) Topics To Be Announced  
   Programming Project #3 due  
Chapter 5 (5.4 through 5.6)  
ON-LINE lecture

Week 8 (T): Quiz #12, Topics To Be Announced  
(June 27) Topics To Be Announced  
ON-LINE lecture

Week 8 (R): Final Exam  
(June 29)

- 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