Operating Systems
CS 314-003 Spring 2021 (CRN: 17620)

Synchronous-Online Course

Welcome to CS 314!

Instructor: Dr. Hiroshi Fujinoki
Office: EB 2034  
Email: hfujino@siue.edu
URL: www.siue.edu/~hfujino
Office Phone: (618) 650-3727

Office Hours: Monday: 10:00 A.M. - 12:00 P.M.
Tuesday: 1:00-2:00 P.M.
Wednesday: 10:00 A.M. - 12:00 P.M.
Thursday: 1:00 - 2:00 P.M.
Friday: by appointment (please make an appointment 24 hours prior to the time you want to meet the instructor - not always available).

Class Meeting Room: online (no classroom assigned to this course)
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) (a course grade of C of better is required for both)

♦ Grading:                  Weight:         Final Letter Grade:
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.
• Exams will start and end at the pre-announced time and every student is expected to take the exams at those pre-scheduled time slots.
• Absence without a prior consent from Dr. Fujinoki will result in zero point except for medical emergency (a letter from your doctor is required).
• If you need any special assistance, you must contact to Dr. Fujinoki at least one week before.
• One letter-size cheat sheet and a calculator are allowed in the exams.
• Exams will cover reading assignments and the required exercise questions.
• Any grading error regarding your exams should be reported to Dr. Fujinoki within two weeks (14 calendar days) after your graded exam is returned in the classroom.

Lecture (zoom meeting) Attendance:
• Attending the zoom meetings during 9:30 - 10:45 a.m. is required.
• There can be up to two mandatory zoom meetings in each week.
• During each lecture (zoom meeting), some information will be provided (can be more than once in each meeting). Each attending student should send the provided information to the TA (using e-mail) of this course within a given time limit (60 seconds) for your credit. If information for your attendance credit is provided more than once, attendance credit for that particular lecture can be earned only if all the information is sent to the TA.
• 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 to your medical emergency (however, you need to provide a written proof of medical service to waive the penalty).
• Any error regarding your lecture 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.

Programming Projects (tentative plan): 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). 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:**
- There will be five 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 10\%).
- Any grading error should be reported to Dr. Fujinoki within two weeks (14 calendar days) after your grade quiz is returned in the classroom.

**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.

**学术 Dishonesty:**
Following activities (but not limited to them) will be considered academic dishonesty:

I. Exams:
- Watching and copying your neighbors' solutions during exams.
- Using materials not allowed during exams.
- Anyone committing academic misconduct above (I-(a) or (b)) will receive a failing grade for this course and reported to the department chair as well as to the dean of the school of engineering.

II. Programming Projects:
(a) Submitting work totally or partially done by somebody else (this includes any human/electronic sources (such as web sites and even another course at SIUE)).
(b) Submitting program source code files (for the programming projects) that are developed by collaborations with other people. This includes both program designs and implementations.

(c) Anyone committing academic misconduct above (II-(a) or (b)) will receive a failing grade for this course and reported to the department chair as well as to 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) Each of you is expected to check "Weekly Notices" in the web site of this course 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).

(3) 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.
(4) Any electric device, such as smart phone, laptop PC, and tablet computer (except a calculator), should not be used during exams.

(5) E-mails sent to the course instructor during weekends may not be responded.

(6) 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).

(7) 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.

<table>
<thead>
<tr>
<th>Week #</th>
<th>Day</th>
<th>Topics</th>
<th>Reading Assignments</th>
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<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td></td>
<td>January 19 (T): Introduction to operating systems</td>
<td>Chapter 1 (1.1 through 1.7)</td>
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<td></td>
<td>Operating System Concepts (1)</td>
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<td>January 21 (R): Operating System Concepts (2)</td>
<td>Chapter 1 (1.1 through 1.7)</td>
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<td><strong>Week 2</strong></td>
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<td>January 26 (T): Processes and process management (1)</td>
<td>Chapter 2 (2.1 through 2.5)</td>
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<td></td>
<td></td>
<td>January 28 (R): Processes and process management (2)</td>
<td>Chapter 2 (2.1 through 2.5)</td>
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<td>Programming Project #0 assigned</td>
<td>Handout</td>
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<td><strong>Week 3</strong></td>
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<td>February 2 (T): Processes and process management (3)</td>
<td>Chapter 2 (2.1 through 2.5)</td>
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<td>February 4 (R): Programming project #1 discussions</td>
<td>Handout</td>
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<td></td>
<td>• Programming Project #0 due</td>
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<td>• Programming Project #1 assigned</td>
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<td><strong>Week 4</strong></td>
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<td>February 9 (T): Threads and thread management (1)</td>
<td>Chapter 2 (2.1 through 2.5)</td>
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<td>February 11 (R): Threads and thread management (2)</td>
<td>Chapter 2 (2.1 through 2.5)</td>
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<td><strong>Week 5</strong></td>
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<td>February 16 (T): Threads and thread management (3)</td>
<td>Chapter 2 (2.1 through 2.5)</td>
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<td>February 18 (R): Process Deadlocks (1)</td>
<td>Chapter 3 (3.1 through 3.4)</td>
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<td><strong>Week 6</strong></td>
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<td>February 23 (T): Process Deadlocks (2)</td>
<td>Chapter 3 (3.5 and 3.6)</td>
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<td>Programming Project #1 due</td>
<td>Handout</td>
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<td>February 25 (R): Programming project #2 discussions</td>
<td>Handout</td>
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<td>Programming Project #2 assigned</td>
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<td><strong>Week 7</strong></td>
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<td>March 2 (T): Deadlocks (3)</td>
<td>Chapter 3 (3.5 and 3.6)</td>
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<td>March 4 (R): Memory Management (1)</td>
<td>Chapter 4 (4.1 and 4.2)</td>
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<td><strong>Week 8</strong></td>
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<td>March 9 (T): Memory Management (2)</td>
<td>Chapter 4 (4.3 and 4.4)</td>
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<td>March 11 (R): <strong>Midterm Exam</strong></td>
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<td><strong>Week 9</strong></td>
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<td>March 16 (T): Memory Management (3)</td>
<td>Chapter 4 (4.5 through 4.7)</td>
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<td>March 18 (R): Memory Management (4)</td>
<td>Chapter 4 (4.5 through 4.7)</td>
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<td><strong>Week 10</strong></td>
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<td>March 23 (T): File System (1)</td>
<td>Chapter 6 (6.1)</td>
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<td></td>
<td>March 25 (R): File System (2)</td>
<td>Chapter 6 (6.2)</td>
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<td>Programming Project #2 due</td>
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</table>
**Week 11**: March 30 (T): Programming project #3 discussions

Handout

Programming Project #3 assigned

April 1 (R): File System (3)

Chapter 6 (6.3)

**Week 12**: April 6 (T): File System (4)

Chapter 6 (6.4)

April 8 (R): I/O Subsystems (1)

Chapter 5 (5.4 through 5.6)

**Week 13**: April 13 (T): I/O Subsystems (2)

Chapter 5 (5.4 through 5.6)

April 15 (R): I/O Subsystems (3)

Chapter 5 (5.4 through 5.6)

**Week 14**: April 20 (T): I/O Subsystems (4)

Chapter 5 (5.4 through 5.6)

April 22 (R): Topics To Be Announced

Programming Project #3 due

**Week 15**: April 27 (T): Topics To Be Announced

April 29 (R): Topics To Be Announced

**Final Exam Week**: May 4 (Tuesday): 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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