CSE220 : Systems Fundamentals I

Syllabus

Term: Spring 2026
Instructor: *Tony Mione*
Course Meeting Times / Location: *Mon & Wed, 3:30 – 5:00 PM – B105*
Recitation: *Wed 5:00 – 5:55*
Office: *C520*
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Office Hours:
Mon: 1:30PM–3:00PM
Tue: 10:30AM - 12:00 Noon
Wed: 2:00PM–3:00 PM
(or by appointment) [B425]

Course Homepage:
https://www3.cs.stonybrook.edu/~amione/CSE220_Course/index.html

Brigthspace: ***https://mycourses.stonybrook.edu/d2l/home/2483605***

Required Text:

- *C Programming: A Modern Approach*, 2nd ed. by K. N. King. W. W. Norton & Company, 2008. 978-0393979503.

Recommended Texts:

- *C Programming Language*, 2nd ed. by Brian W. Kernighan and Dennis M. Ritchie. Pearson, 1998. 978-0131103627.
- *Digital Design and Computer Architecture*, 2nd ed. by David Harris and Sarah Harris. Morgan Kaufmann, 2013. ISBN-13: 978-0-12-394424-5.
- *Other readings as specified*

Course Description

Introduces systems-level programming concepts using the C language and assembly language and explores the correspondence of programming constructs in these languages. Topics include internal data representation, basic instructions and control structures, bitwise operations, arithmetic operations, memory management, pointers, function calls and parameter passing, linking and loading. Included is an overview of foundational topics in computer architecture, organization and networks.

Major Topics Covered

- Basics of computer architecture and organization
- Machine-level representations of data
- Basics of C programming
- Low-level programming in C
- C functions and program structure
- C I/O; Linking and loading
- C pointers and arrays
- Fundamental data structures in C
- Computer networks
- MIPS architecture and assembly language basics
- MIPS assembly memory management
- MIPS assembly functions
- C/MIPS correspondence and cross-compilation
- MIPS processor implementation, modern computer architectures

Course Objectives/Outcomes

At the end of the course the student should have

- an ability to determine the machine-level representations of primitive and structured data types,
- an ability to determine the correspondence of program constructs written in C and in assembly language, and
- an ability to implement non-trivial algorithms, and both static and dynamic data structures, in the C programming language.

Prerequisites

- C or higher in CSE 214 or co-requisite CSE 260
- CSE major

Grades and Evaluation

Your grade in the course will be based on the following work:
Attendance/Participation – 5% [25 points] – Based on attendance at class.
Assignments - 45% [225 points] - Programming assignments in C programming and MIPS assembler (approximately 8). These will exercise understanding of C, assembler programming, and problem solving using these languages.
Midterm Exam – 20% [100 points] – a midterm exam to check understanding of the concepts presented in readings, lecture slides, demonstrations, and recitation.
Final Exam – 30% [150 points] - A cumulative final exam will provide questions that will cover the key concepts taught during the entire semester.

Final Grade Calculation

The final grade is based on the accumulated points from all exams, assignments, and the semester project (with the entire class comprised of 500 points). Letter grades are given on the following scale:

Letter	Minimum Percentage	Minimum 'points'
A	93	465
A-	90	450
B+	87	435
B	83	415
B-	80	400
C+	77	385
C	73	365
C-	70	350
D+	67	335
D	60	300

Attendance

The range of topics covered in this course is extensive, and due to the limited lecture time, these topics are covered in an intensive manner. MOE guidelines also dictate that missing more than 20% of the classes in a course requires issuing an 'F' for the class. Therefore, attendance at all classes are ***mandatory*** in order to keep up, perform well, and receive a passing grade

- Attendance will be taken during each lecture session.
- A sheet is passed around that must be signed
    - ONLY Sign for yourself! Signing for anyone else is fraud and is a breach of academic integrity. If caught it will be reported!
    - **Make sure you sign the sheet during class! I cannot mark you present based on an email after class saying "I was at class and forgot to sign. Please mark me present."**
- ***If a student has over 20% unexcused absences, the final course grade will be an F. ← This is an MOE (Ministry of Education) rule. I cannot alter this requirement!***

Note also that 5% of the course grade is based on attendance. So missing even 5 classes (not enough to fail the course), will lose about 1% of grade which could be the difference between the grade you want and what you earn.

Re-grading

Requests for a review or regrade on an assignment must be made within 1 calendar week of receiving the grade with feedback.

Important note: On assignments: Regrading will ONLY be considered in cases where I may have run the code incorrectly. Upon correcting the code, if functionality is shown to work, the grade will be adjusted. I will NOT regrade on the basis of the assignment being 'vague' or failing to state a specific required behavior. I will try to make the specifications as precise as possible but if something seems ambiguous, you should ask in class, in person during office hours, or by email. If there is enough confusion, I will announce more specific guidelines to the class either in person or by email.

Course Schedule

Following is a tentative schedule for the class topics:

Week/Day	Lecture Topics	Readings	Tests/Vids/Assgn
W1: 3/4	Course Overview / Data Representation		
W2: 3/9	C Fundamentals / IO / Expressions / Selection		
W2: 3/11	IO / Expressions / Selection		
W3: 3/16	C Basic Types / Arrays / Functions		
W3: 3/18	Arrays / Functions		
W4: 3/23	C Pointers and Arrays		
W4: 3/25	Pointers and Arrays		
W5: 3/30	C Strings and Command line arguments		
W5: 4/1	C Structures, Unions, and Enumerations		
W6: 4/6	Advanced Uses of Pointers, Dynamic Memory Allocation		
W6: 4/8	Advanced Uses of Pointers		
W7: 4/13	Input-Output and Files		
W7: 4/15	Midterm		
W8: 4/20	Program Organization		
4/22	Program Organization		
W9: 4/27	Preprocessor and Large Programs		
4/29	Preprocessor and Large Programs		
W10: 5/4	Logic Design and MIPS Architecture		
5/6	MIPS Assembly Language I		
W11: 5/11	MIPS Assembly Language II		
5/13	MIPS Assembly Language III		
W12: 5/18	MIPS Processor Implementation		
5/20	Networks Introduction		
W13: 5/25	Budda's Birthday (Subst) [No class]		
5/27	Networks Application Layer		
W14: 6/1			
6/3	Local Elections [No Class]		
6/5	Networks Transport Layer [Mon Sched]		
W15: 6/8	Final Exam Review		
6/17	Final Exam [3:15-5:45PM]		

Academic Dishonesty

You may *discuss* the homework assignments with anyone you like, however each students' *assignment (including coding)* which they submit must be their own work, and **only** their own work. **Any evidence that source code or solutions have been copied, shared, or transmitted *in any way* (this includes using source code downloaded from the Internet (i.e. Chegg), source code written by an AI like ChatGPT, or code written by other students in previous semesters!) will be regarded as evidence of academic dishonesty and will be reported to the administration.**

For additional information, see the **Academic Integrity Statement** section below.

Guidelines for Assignments

Except for the Term Project, all assignment submissions are based on individual work. However, discussion of an assignment's requirements or technical aspects ***at a high level*** is okay. When doing this, you must work only with others whose understanding of the material is approximately equal to yours. In this situation, working together to find a good approach for solving a programming problem is cooperation; ***HOWEVER, listening while someone dictates a coding solution is cheating***. You must limit collaboration to a high-level discussion of solution strategies, and stop short of actually writing down a group answer. Anything that you hand in, whether it is a written problem or a computer program, must be written in your own words. If you base your solution on any other written solution, you are cheating.

Guidelines for Taking Exams

When taking an exam, you must work completely independently of everyone else. Any collaboration here, of course, is cheating. All examinations will be closed-notes and closed-book. No electronic devices of any kind will be permitted to be used during exams. All cell phones must be silenced or turned off during exams. You will be allowed one (1) sheet of notes, both sides (8.5 x 11 or A4). **Any additional note sheets found will be confiscated and you may be reported to academic administration for a violation of academic integrity which could cause you to fail the course.**

General Guidelines

Be advised that any evidence of academic dishonesty will be treated with utmost seriousness. *We do not distinguish between cheaters who copy others' work and cheaters who allow their work to be copied.*

If you cheat, you will be given an F on the assignment. Any incidence of cheating will be reported to Academic Affairs. If you have any questions about what constitutes cheating, please ask.

Student Success Resources

There are multiple resources, university offices, and help desks that are available to assist you with everything from advising, tutoring, accessibility, and much more. Please reach out to the following as necessary:

- Department Advisor
- Academic Affairs: academicaffairs@sunykorea.ac.kr
- Tutoring Center: tutoring@sunykorea.ac.kr
- Writing Center: wc@sunykorea.ac.kr
- Student Affairs: student@sunykorea.ac.kr
- Career Center: career@sunykorea.ac.kr
- Bursar Office: bursar@sunykorea.ac.kr
- Office of Institutional Diversity and Equity: oide@sunykorea.ac.kr

Wellness & Support Statement

SUNY Korea values student well-being, including mental health, and recognizes that a variety of factors can impact emotional wellness and academic success including stress, anxiety, depression, substance use, sexual violence, family or relationship concerns, and political conflict. If you experience challenges or wellness concerns that affect your ability to be successful in class, you are encouraged to reach out for help from the Counseling Center via counseling@sunykorea.ac.kr when you need it.

In the event of a short-term absence from class, students are encouraged to communicate immediately and work directly with instructors. However, if a student is struggling with an extended absence due a hospitalization, family illness or death, they are encouraged to reach out to the Student Support Team.

Students with Disabilities

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, Academic Building A208, 032-626-1198, or at sas@sunykorea.ac.kr. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.
Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and the Student Accessibility Support Center.

Academic Integrity Statement

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to Academic Affairs (academicaffairs@sunykorea.ac.kr). For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to Student Affairs (student@sunykorea.ac.kr) any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn.

Understand When You May Drop This Course

If you need to drop or withdraw from the course, it is your responsibility to be aware of the tuition liability deadlines listed on the registrar's Academic Calendar. Before making the decision to drop/withdraw, please contact me or your department advisor.

For the detailed information about course drop, please refer to the University's policies:

- Undergraduate Course Load and Course Withdrawal Policy
- Graduate Course Changes Policy

Incomplete Policy

Under emergency/special circumstances, students may petition for an incomplete grade.
Circumstances must be documented and significant enough to merit an incomplete. If you need to request an incomplete for this course, contact me for approval as far in advance as possible.
You should also read the University's policies that apply to you:

Undergraduate Catalog - Grading and the Grading System
Graduate Catalog - Grading Policies

Course Materials and Copyright Statement

Course material accessed from Brightspace is for the exclusive use of students who are currently enrolled in the course. Content from these systems cannot be reused or distributed without written permission of the instructor and/or the copyright holder. Duplication of materials protected by copyright, without permission of the copyright holder is a violation of the Federal copyright law, as
well as a violation of Stony Brook's Academic Integrity.