CSCI 210-01

Computer Organization and Programming

Spring 2021

Instructor

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https://www.coastal.edu/academics/facultyprofiles/science/computingsciences/williammjonesjr/ Web Page

Office Hours Will take place in MS Teams, with the days/times listed at the above link Times/Room TuTh 8:00AM – 9:15AM, AOC2 Room 04. + streaming in MS Teams.

Initially Accessing MS Teams:

Here is the CSCI 210 01 SP21 MS Teams link.

Prerequisite

Grade of C or better in CSCI 145 or CSCI 150/L and MATH 174

Main Course Contents

Introduction to computer organization, hardware, and assembly programming.

"This course covers the logical basis of computer structure, machine representation of information, flow of control, instructions codes, arithmetical and logical operations, indexing, indirect addressing, I/O, sub-routines, linkages, macros. Interpretive and assembly systems and pushdown stacks."

Texts and Other Materials

- 1. ZyBook (<u>required</u> textbook)
 - 1. Sign in or create an account at learn.zybooks.com
 - 2. Enter zyBook code: COASTALCSCI210JonesSpring2021
 - 3. Subscribe
- 2. Online Computer System Simulator: https://cpulator.01xz.net

Course Objectives

- Understand the fundamental components of a computer, and how they work together to execute a program. (computer organization and introductory CPU/memory subsystems)
- Understand how to program a computer to solve a problem in an assembly language, and to understand how this style of programming maps to higher-level languages. (assembly programming, instruction set architecture, flow control and indexing)

Grading Grades will be assigned according to the standard 10-point grading scale

with possible "+" letter grades.	Grading Scale		
	90 - 100 A	70 - 76	\mathbf{C}
There will be no curving of grades during the semester. I MAY decide after all grades are in at the end of the semester to curve, based on the	87 - 89 B+	67 - 69	D+
cumulative difficulty of the material, averages, etc; however you should	80 - 86 B	60 - 66	D
not assume that any curve will be given.	77 - 79 C+	0 - 59	F

Grades will be based on quizzes, assignments, 2 tests, and a final exam. Your final grade will be calculated as follows:

Assignments	30%
Quizzes	10%
Tests (2)	40%
Final Exam	20%

As you can see, a good bit of the weight is given to "Assignments". This category includes, but is not limited to, inclass lab-based designs and programs, as well as homework, and longer-term group-based assignments.

Note about any extra credit: I reserve to right, up until the end of the course, to determine how and when extra credit will be calculated into the final score, if applicable.

Note: You should not make assumptions about what will take place in this course based on what has taken place in this course during prior semesters. I reserve to right to either follow or not follow prior practices.

Health Related Class Absences

Please evaluate your own health status regularly and refrain from attending class and other on-campus events if you are ill. Students who miss class due to illness will be given opportunities to access the course online. You are encouraged to seek appropriate medical attention for treatment of illness. In the event of contagious illness, please do not come to class or to campus to submit work or meet with me. Instead, notify me by email about your absences as soon as possible, so that accommodations can be made. Please note that documentation for excused absences may be required. However, you should not come to class if you are feeling sick, even if you have not seen a doctor.

Student Locality

If your personal or health circumstances change and you would like to change the way you attend the class (from streaming to inperson or vice versa), you may do so. However, you must provide me with 48 hours' notice of this change via email, excepting documented emergencies, so that I can track accurately your attendance and course participation. You should also change your in-person vs. virtual preference in WebAdvisor.

Streaming and Recording

To make this course accessible to all students, I will be livestreaming our course meetings. I will also record (some) course meetings and post the recordings on Moodle, Echo360, and/or MS Teams for later access.

Face Coverings

Face coverings are required indoors at all times and outdoors when physical distancing is not possible. CCU requires all students to wear face masks or cloth face coverings in classrooms, laboratories, and other instructional spaces. Compliance with the face-covering protocol is expected. If you do not comply with a classroom rule, you may be asked to leave class and/or reported to the Dean of Students Office. If you forget your mask, or if your mask breaks on your way to class, there are disposable masks available for your use.

Individuals whose unique and individual circumstances require an exception to the face covering requirement, as indicated by a medical professional, may request an exception in accordance with campus ADA policies. Contact the Office of Accessibility and Disability Services at 843-349-2503 or disability@coastal.edu. Appropriate accommodations relating to class modality and social distancing will be evaluated and implemented based on the student's needs.

Successful participation is defined as consistently adhering to expectations and requirements in this syllabus. I expect you to wear a mask that covers your mouth and nose

We know from existing data that wearing a mask in public can help prevent the spread of SARS-CoV-2, which causes COVID-19, in the community (Lyu & Wehby, 2020; CDC, 2020; Johns Hopkins Medicine, 2020). In accordance with the Office of the Commissioner of Higher Education and guidance from the Centers for Disease Control and Prevention (CDC), CCU has determined that everyone will be required to wear a face mask in university buildings, including classrooms. This requirement includes wearing a mask appropriately (i.e., covering both your mouth and nose).

Lyu, W. and Wehby, G. L. Community Use Of Face Masks And COVID-19: Evidence From A Natural Experiment Of State Mandates In The US Health Affairs 0 0:0 doi: 10.1377/hlthaff.2020.00818

Centers for Disease Control and Prevention. (July 16, 2020)

Recommendation Regarding the Use of Cloth Face Coverings, Especially in Areas of Significant Community-Based Transmission. Retrieved on July 22, 2020.

Maragakis, L. L. Coronavirus Face Masks & Protection FAQs. (Updated July 2, 2020) Retrieved from the Johns Hopkins Health website on July 22, 2020.

Classroom Sanitation

Our classroom has a Sanitation Station that is stocked with cleaners and sanitizers. When you enter the classroom, please use the spray and/or wipes to clean your workspace. The Sanitation Station also includes hand sanitizer and disposable masks in case you forget your own face covering. These disposable masks are finite in supply, so please take one only when necessary!

ADA Statement

Coastal Carolina University is committed to equitable access and inclusion of individuals with disabilities in accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. Individuals seeking reasonable accommodations should contact Accessibility & Disability Services (843-349-2503 or https://www.coastal.edu/disabilityservices/). If this applies to you, it is your responsibility to request testing reservations (Accommodate System) in the system well ahead of time, and for a time-slot that matches when the exams would be taken in the regular classroom.

Course Policies

Attendance:

Attendance is expected (and when viewed in synchronous streaming locality, you are expected to be on time and present for the entire live stream, even if your locality is not in class itself), and you are expected to be on time for class. The CCU University Catalog states, with respect to attendance, that "An instructor is permitted to impose a penalty, including assigning the grade of F, for unexcused absences in excess of 25% of the regularly scheduled class meetings." Attendance will be taken, and absences in excess of 25% of our class meetings will result in a failing grade, no matter what your actual performance in the course happens to be. The Catalog also states that "Absences will be excused for documented cases of:

- a) incapacitating illness,
- b) official representation of the University (excuses for official representation of the University should be obtained from the official supervising the activity),
- c) death of a close relative, and
- d) religious holidays."

In short: Attendance is required

No late work accepted.

Make-up tests by prior appointment only.

Wait 15 minutes for late instructor.

Tests

Tests will be given during regularly scheduled class times. Make-ups for missed tests will not be allowed without prior approval from the instructor and only when the absence is excused (verification may be required).

E-mail Communication. - And MS TEAMS

(Either email me or use MS Teams)

I will normally respond to e-mails within one day. I do not normally read student e-mails on the weekends, so do not expect an immediate response if an e-mail is sent then; however in some cases I will be able to respond during the weekend. University policy dictates that all e-mail communication regarding class issues be conducted with students via their Coastal e-mail address. E-mail from other addresses will not be answered.

An e-mail must have the correct course number in the subject. If you send me email without a subject, it is very likely that I will throw it away as SPAM. If you send me email, use correct spelling, grammar and punctuation. Do not send email to me using instant messaging code or txt-speak. If you do, I will throw away your email.

Hints for Success

- Start working on assignments early.
- You can't leave things to the last minute in this course.
- If you get stuck, take a break and then go back to think about it.
- Ask questions! Don't hesitate to contact me if you have any problems or don't understand something.
- Be familiar with the reading material before coming to class.
- Attend class!

Academic Honesty

Coastal's policy on academic integrity as stated in the Student Code of Conduct:

Coastal Carolina University is an academic community that expects the highest standards of honesty, integrity and personal responsibility. Members of this community are accountable for their actions and reporting the inappropriate action of others and are committed to creating an atmosphere of mutual respect and trust.

Cheating and plagiarism will not be tolerated. Students are required to turn in their own work, unless otherwise specifically allowed by the instructor. Submitting a copy of another student's work or allowing your work to be copied by another student is a violation of academic integrity. Falsification of program output is also a violation of academic integrity. Penalties for

21 SP CSCI 210-01 JONES

violations of academic integrity WILL include a grade of FX for the course, no exceptions and notification of the Provost of the University. Please refer to the Student Handbook from the Office of Student Affairs for more information regarding Coastal Carolina University's Student Code of Conduct and Academic Responsibility.

The instructor's decision as to whether to report a student for a possible violation of the academic honesty on an assignment depends on a variety of factors including the intent of the assignment and the behavior of the student. Two general guidelines will be used in making the decision:

- Program plagiarism will be suspected if an assignment that calls for individual work results in two or more programs so similar that one can be converted to another by purely mechanical transformations. The same is true for assignment plagiarism.
- Cheating will be suspected if a student who was to complete an assignment independently cannot explain both the intricacies of his/her solution and the techniques used to generate that solution.

To avoid any semblance of plagiarism, it is recommended that observe the following guidelines:

- Allowing another student to examine your program or assignment solution or examining another student's program or assignment solution, for any reason, is strictly forbidden.
- You may discuss only the following with other students:
- The program statement (e.g., "What size inputs do we need to handle?"").
- Syntax errors and features of programming languages (e.g., "How do I declare a file?" or "Do I need to terminate the last line in a procedure with a semi-colon?").
- Discussion of solutions to an assignment must be limited to a discussion of what was discussed in class, in handouts or in the book. You may not otherwise discuss algorithms to be used to solve programming assignments (e.g., you should not ask or answer "Should I use linked lists to store the input lines?") except to discuss what was said in class about the issue.
- Attempting to falsely represent the correctness of your program, or to delay other members of the class from completing a programming assignment, is cheating.
- You are discouraged, in the strongest possible terms, from making a habit of getting together with another student while you work on a programming project or homework assignment with the idea that you will limit yourselves to discussion of problems such as syntax errors only. There are too many temptations, and if by chance your programs or assignments wind up being very similar, you will find it difficult to make a convincing argument that you limited yourselves to allowable discussions of the project.

Changes

The instructor reserves the right to make changes in this syllabus at any time.

Moodle

Check Moodle daily for updates

Manage Course SLOs for CSCI 210

Number	Description	Pls
1	Convert between decimal, binary, octal, and hexadecimal number systems and perform computations involving signed binary number systems.	0
2	Demonstrate an understanding of the purpose, behavior, performance, and relationship among the basic components of a typical Von Neumann machine architecture.	1.2, 1.3, 2.3, CS6.3
3	Demonstrate a basic understanding of low level programming by completing programs that require multi-level control flow, addressing modes, modules with parameter passing and return, and/or special and general purpose registers.	1.2, 1.4, 2.2, CS6.2
4	Define and explain the process of translating, linking and loading a program.	0
5	Demonstrate an understanding of the relationship between a high-level C-like language and a low-level assembly language.	*07*

Program Educational Objective – Student Learning Outcome – Performance Indicator Mapping

PEO 1. Program graduates are expected to be <u>contributing to society</u> through the application of strong core competencies in the field

- SLO 1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions. [Maps to old SLO B]
 - 1.1 Define requirements and/or specifications for a computing problem.
 - 1.2 Analyze a complex problem by breaking it down into smaller components.
 - 1.3 Select an existing solution to mitigate or solve a problem.
 - 1.4 Solve a problem by applying principles of computing and/or other relevant disciplines.
- SLO 2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline. [Maps to old SLO C]
 - 2.1 Design a system to meet specific requirements.
 - 2.2 Implement a system to meet a set of requirements.
 - 2.3 Evaluate a solution against requirements

PEO 2. Program graduates are expected to be <u>demonstrating a commitment</u> to professional and ethical practice

- SLO 3. Communicate effectively in a variety of professional contexts. [Maps to old SLO F]
 - 3.1 Explain a topic with clarity.
 - 3.2 Illustrate a topic completely.
 - 3.3 Present a topic with proper mechanics.
 - 3.4 Produce documentation/citations that supports communication artifact (oral/written)
- SLO 4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles. [Maps to old SLO E]
 - 4.1 Recommend a course of action for an ethical/legal issue in the discipline.
 - 4.2 Illustrate a violation of a professional code of ethics (ACM, IEEE).
- SLO 5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline. [Maps to old SLO D]
 - 5.1 Provides the team with relevant information.
 - 5.2 Communicate ideas related to the group's purpose.
 - 5.3 Participates in group activities

PEO 3. Program graduates are expected to be <u>successfully adapting</u> to technical, societal, and environmental changes by building upon strong foundational competencies.

- SLO 6. CS ONLY Apply computer science theory and software development fundamentals to produce computing-based solutions. [Maps to old SLO J]
 - CS 6.1 Use software development fundamentals to fashion a computing based solution.
 - CS 6.2 Develop a computing based solution that demonstrates an understanding of computer science theory.
 - CS 6.3 Evaluate how time/space constraints affect design.