COSC 2325 (101HY)
Computer Organization
Spring 2022, 1/17/2022 – 5/13/2022
2:00 – 3:20 pm, Monday
2:00 – 2:50 Wednesday and 2:50 – 3:20 Wednesday
STEAM classroom: S1.146

Instructor Information:

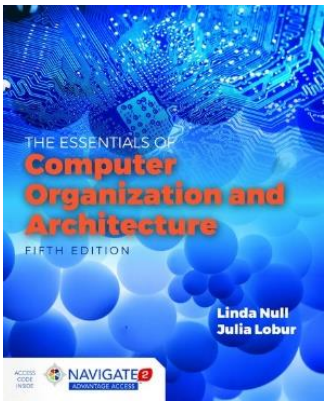
Name: Faith (Fay) Alexander
Email: fbryan@com.edu
Office phone: 409-933-8334 – If no answer, leave a message for a callback.
Office Location: STEAM 225.55

Student / Office Hours and Location:

Monday,	9 – 9:30am, 11:00am – 12:30 pm, S225.55
Tuesday,	9 – 9:30am, 11:00am – 12:30 pm, S225.55
Wednesday,	9 – 9:30am, 11:00am – 12:30 pm, S225.55
Thursday,	9 – 9:30am, 11:00am – 12:30 pm, S225.55

Other days and times are by appointment with the instructor.

Required Textbook:
The textbook is required.
”The Essentials of Computer Organization and Architecture"
Fifth Edition
Linda Null and Julia Lobur
Jones & Bartlett Learning, an Ascend Learning Company
800-832-0034



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Course Description

The organization of computer systems is introduced using assembly language. Topics include basic concepts of computer architecture and organization, memory hierarchy, data types, computer arithmetic, control structures, interrupt handling, instruction sets, performance metrics, and the mechanics of testing and debugging computer systems. Embedded systems and device interfacing are introduced. This course is included in the Associate of Science Degree in Computer Science. Prerequisite: COSC 1336 or COSC 1436 — Programming Fundamentals I.

Course Requirements

The textbook is required during the first week of class. There is no substitute for the textbook. PowerPoint presentations, available to the student, do not contain the detail from the textbook.

Assignments must be worked exactly according to the directions and problem statements provided by the instructor. Assignment solutions must use the material in the textbook and on Blackboard, not material from unauthorized sources on the Internet, which can be incorrect and misunderstood.

There is no software required to be installed on your home computer for this course. The assembly language simulator is provided on a file posted to Blackboard and can be downloaded to your computer. No installation is required. Instructions will be provided in class.

Computer and Internet access: Regarding problems with your own computer and with Internet access outside of campus computer labs, COM is not responsible for outages, and due dates will not be extended. Please see the instructor immediately for any issues regarding this policy.

Grading Formula:

COURSE ITEM	% of Total Grade
Tests	70%
Assignments	30%
Total	**100%**

Grading Scale:

Grading Scale	
Letter Grade	**Percent**
A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	Below 60%

Late Work, Make-Up and Extra-Credit Policy: Homework must be completed on time. Due dates will not be extended and late work will not be accepted. There are no test re-takes. See the instructor if you have a documented emergency. There is no extra credit in this course.

Attendance Policy:

All students are expected to attend all sessions in the classroom. There are no recordings of lectures and labs. If you cannot attend a class, you are still responsible for that content. Please contact a classmate to find out what you missed, and be sure to meet all deadlines, as they will not be extended.

Communicating with your instructor: ALL electronic communication with the instructor must be through your COM email. Due to FERPA restrictions, faculty cannot share any information about performance in the class through other electronic means.

You may communicate with the instructor through email, phone and during student hours.

Student Learner Outcome	Maps to Core Objective	Assessed via this assignment
1. Explain contemporary computer system organization.	Written Communications	Chapter 1, von Neuman Architecture, Covered on Test 1
2. Describe data representation in digital computers.	Empirical and Quantitative Skills	Assignment, Chapter 2, Number representations
3. Explain the concepts of memory hierarchy, interrupt processing, and input/output mechanisms.	Written Communications	Chapter 7, I/O Architectures, Exercises from Chapter 7
4. Measure the performance of a computer system.	Empirical and quantitative skills	Assignment on Speedup, regarding different computer components
5. Design and develop assembly language applications	Critical Thinking Skills	Assignment, MARIE program, assembly language
6. Explain the interfaces between software and hardware components	Written Communications	Chapter 8, Section 8.2, Operating Systems
7. Explain the design of instruction set architectures.	Written Communications	Chapter 4, Real-World Examples of Computer Architectures, covered on Test # 2.
8. Develop a single-cycle processor	Critical Thinking Skills	Chapter 4. Explain the steps in the fetch-decode-execute cycle. Include what is happening in the registers.
9. Explain the concept of virtual memory and how it is realized in hardware and software	Critical Thinking Skills	Chapter 6 (Memory), Section 6.5 (Virtual Memory)
10. Explain the concepts of operating system virtualization	Written Communications	Chapter 8 (System Software), Section 8.3.1 (Virtual Machines), Final Exam, Chapters 1-8

Academic Dishonesty

Any incident of academic policy will be dealt with in accordance with college policy and the Student Handbook. Academic dishonesty – such as cheating on exams is an extremely serious offense and will result in a grade of zero on that exam and the student will be referred to the Office of Student Conduct for the appropriate disciplinary action.

Student Concerns:
If you have any questions or concerns about any aspect of this course, please contact me using the contact information previously provided. If, after discussing your concern with me, you continue to have questions, please contact Mr. Leslie Richardson, Math and Computer Science Department Chair, at 409-933-8329, email lrichardson@com.edu.

Course Outline

An outline of course assignments is shown below.

Wk	Date	Topic
1	1/19	Chapter 1: Introduction
2	1/24 – 1/26	Chapter 2: Data Representation in Computer Systems
3	1/31 – 2/1	Chapter 2 (continued)
4	2/7 – 2/9	Chapter 3: Boolean algebra and Digital Logic
5	2/14 – 2/16	Chapter 3 (continued), **TEST 1 ON CHAPTERS 1-3.**
6	2/21 – 2/23	Chapter 4: MARIE: An Introduction to a Simple Computer
7	2/28 – 3/2	Chapter 4 (continued), MARIE projects
8	3/7 – 3/9	Chapter 5: A Closer Look at Instruction Set Architectures, MARIE cont'd
	3/14 – 3/16	S P R I N G B R E A K
9	3/21 – 3/23	Chapter 5 (continued),
10	3/28 – 3/30	**TEST 2 ON CHAPTERS 4-5,** Chapter 6: Memory
11	4/4 – 4/6	Chapter 6 (continued)
12	4/11 – 4/13	Chapter 7: Input/Output Systems
13	4/18 - 4/30	Chapter 7 (continued), **TEST 3 ON CHAPTERS 6-7**
14	4/25 – 4/27	Chapter 8: System Software, Chapter 9: Alternative Architectures
15	5/2 – 5/4	Chapter 9 (continued), Review for Final Exam
16	5/9 – 5/11	Chapters 1-9 **Final Exam**

Institutional Policies and Guidelines

Grade Appeal Process: Concerns about the accuracy of grades should first be discussed with the instructor. A request for a change of grade is a formal request and must be made within six months of the grade assignment. Directions for filing an appeal can be found in the student handbook.<https://build.com.edu/uploads/sitecontent/files/student-

services/Student_Handbook_2019-2020v5.pdf. *An appeal will not be considered because of general dissatisfaction with a grade, penalty, or outcome of a course. Disagreement with the instructor's professional judgment of the quality of the student's work and performance is also not an admissible basis for a grade appeal.*
https://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.pdf

Academic Success & Support Services: College of the Mainland is committed to providing students the necessary support and tools for success in their college careers. Support is offered through our Tutoring Services, Library, Counseling, and through Student Services. Please discuss any concerns with your faculty or an advisor.

ADA Statement: Any student with a documented disability needing academic accommodations is requested to contact Holly Bankston at 409-933-8520 or hbankston@com.edu. The Office of Services for Students with Disabilities is located in the Student Success Center.

Counseling Statement: Any student needing counseling services is requested to please contact Holly Bankston in the student success center at 409-933-8520 or hbankston@com.edu. Counseling services are available on campus in the student center for free and students can also email counseling@com.edu to set up their appointment. Appointments are strongly encouraged; however, some concerns may be addressed on a walk-in basis.

Textbook Purchasing Statement: A student attending College of the Mainland is not under any obligation to purchase a textbook from the college-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

Withdrawal Policy: Students may withdraw from this course for any reason prior to the last eligible day for a "W" grade. Before withdrawing students should speak with the instructor and consult an advisor. Students are permitted to withdraw only six times during their college career by state law. The last date to withdraw from the 1st 8-week session is March 2. The last date to withdraw from the 16-week session is April 25. The last date to withdraw for the 2nd 8-week session is May 4.

F_N Grading: The F_N grade is issued in cases of *failure due to a lack of attendance*, as determined by the instructor. The F_N grade may be issued for cases in which the student ceases or fails to attend class, submit assignments, or participate in required capacities, and for which the student has failed to withdraw. The issuing of the F_N grade is at the discretion of the instructor. The last date of attendance should be documented for submission of an F_N grade.

Early Alert Program: The Student Success Center at College of the Mainland has implemented an Early Alert Program because student success and retention are very important to us. I have been asked to refer students to the program throughout the semester if they are having difficulty completing assignments or have poor attendance. If you are referred to the Early Alert Program you will be contacted by someone in the Student Success Center who will schedule a

meeting with you to see what assistance they can offer in order for you to meet your academic goals.

COVID-19 Statement: All students, faculty, and staff are expected to familiarize themselves with materials and information contained on the College of the Mainland's Coronavirus Information site at www.com.edu/coronavirus. In compliance with Governor Abbott's May 18 Executive Order, face coverings/masks will no longer be required on COM campus. Protocols and college signage are being updated. We will no longer enforce any COM protocol that requires face coverings. We continue to encourage all members of the COM community to distance when possible, use hygiene measures, and get vaccinated to protect against COVID-19. Please visit com.edu/coronavirus for future updates.

Updates to this Syllabus:
The instructor reserves the right to update this syllabus. All substantive changes will be communicated to students as soon as possible, in the classroom and through Blackboard announcements.