COCS 2336 Data Structures and Algorithms

COURSE SYLLABUS: SUMMER I 2024

INSTRUCTOR INFORMATION

Instructor: Mutlu Mete, PhD, Professor of Computer Science
Office Location: Jour 218
Office Hours: Online
Office Phone: 903-886-5497
Meetings: Online, recorded materials
Office Fax: 903-886-5165
University Email Address: Mutlu.Mete@tamuc.edu
Preferred Form of Communication**:** Email
Instructor Response Time: One business day

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Textbook: Strongly recommended

Robert Sedgewick, Addison Wesley, ISBN 0-201-35088-2

I will follow chapters from Algorithms in C++, Third Edition, Parts 1-4, Fundamentals, Data Structures, Sorting, Searching by Robert Sedgewick, Addison Wesley, ISBN 0-201-35088-2, 2009.

Supplementary textbooks: C++ Programming: from Problem Analysis to Program Design 5th edition by D.S. Malik; Shaffer, C.A. “Data Structures and Algorithm Analysis”, Dover Publications. http://people.cs.vt.edu/~shaffer/Book/

Note: TAMUC Library provides full access to many online books

For additional resources for learning C++, click on Related Web Links.
Some particularly recommended sites for compiler information, tutorials, and general

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information.
http://www.cprogramming.com/
http://www.cplusplus.com/
http://msdn.microsoft.com/en-us/visualc/default.aspx

Software: C++ compiler of your choice. For instance, Windows users might consider Bloodshed Dev-C++ or MS Visual Studio; Xcode for Mac OS users; GCC/G++ for Linux users.

Course Description

This course continues with the concept of abstract data structures (classes) begun in COSC 1337 Programming II and concentrates on building programming tools known as container classes which can be used to store and manipulate data. Topics covered include address variables, linked lists, stacks, queues, recursion, analysis of algorithm efficiency, binary search trees, and hash tables.

Student Learning Outcomes

1. Use address variables.
2. Use the linked list data structure.
3. Use the stack data structure.
4. Use the queue data structure.
5. Design, code, and use recursive functions.
6. Understand Big-O notation (for algorithm efficiency): what it means, how it is determined, and why it should be considered in effective programming.
7. Use the binary tree data structure and a hash table.
8. Integrate the use of container classes (user-created or STL) into a moderately complex program solution.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

Students should be able to use C++ compiler. Please do not use a web-based compiler.

Instructional Methods

This is an online course. Assignments and course notes will be available online. Feedback on assignments will also be available online.

Student Responsibilities or Tips for Success in the Course

"All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment." (See Student's Guide Handbook, Policies and Procedures, Conduct). Talking and other activities that distract/disturb others in the class would not be tolerated. Instructor holds the right to ask you leave the classroom anytime based on any of disturbing attitude. Each student should sign the sign-sheet if asked by instructor. Late student may not be allowed to participate the lecture.

Assignments and quizzes will be announced on myLeoOnline. No makeup quizzes or assignments.

GRADING

Final grades in this course will be based on the following scale:

GRADING POLICY:
A: 100%- 90%
B: 89% - 80%
C: 79% - 70%
D: 69% - 60%
F: 59 % - 0%

Assessments

Basis for Evaluation:

Assignments: 30% (4 activities)

Quizzes: 20% (4 activities)

Midterm Exam: 25%

Final Exams: 25%

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:
https://community.brightspace.com/s/article/Brightspace-Platform-Requirements

LMS Browser Support:

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https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

YouSeeU Virtual Classroom Requirements:
https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu**.**

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

https://community.brightspace.com/support/s/contactsupport

Interaction with Instructor Statement

Primary mode of asynchronous communication is email. My email address is mutlu.mete@tamuc.edu. Usually, I email you using a tool in myLeoOnline, where I cannot see/edit your email address. The emails I send through the myLeoOnline go the email address you associated with myLeo system. It could be your @leo.tamuc.edu or other email address from other domains you selected (gmail, yahoo, outlook, etc.). In the first week of semester, I will email you and ensure that you receive this email to establish an electronic communication between you and me. I usually response students' emails in 24 hours. Please wait 24 hours to remind the issue again in the emails. My office number is 903-886-5497; however, the least preferred way of communication is phone calls because of untraceable nature of the actions. If need be, I can give you a phone call appointment to discuss a course issue.

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COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

Credit will be given for ONLY those exams, programs, and/or projects turned in no later than the deadline as announced by the instructor of this class, unless prior arrangement has been made with the instructor. Late programs / projects / assignments do not gain partial credit. Assignments and projects will be posted in university's myLeoOnline communication system. Detailed information will be provided by the instructor. Students also should turn in their assignments through myLeoOnline portal. Each student is responsible for the content/instructions of email communications. It is highly recommended that you set notification setting in D2L.

You should do your own work on exams/projects and for computer assignments. Copying another student's work is not acceptable. Any indication of cheating and/or plagiarism on an exam/assignment/project will be an automatic 0 (zero) for the exam/assignment/project for all students involved. Yet, based on cheating and plagiarism activity in any section of class, instructor holds the right to give F grade to the identified student(s). Regarding codes in assignments / projects, you may be required to explain the code you submitted. In case of discursive explanation, the instructor holds the right to lower your grade.

No computer uses during lecture except the times allowed by the instructor. Instruction may ask you to leave classroom in case excessive use of cell phone.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook.
http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum:
https://www.britannica.com/topic/netiquette

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Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

Undergraduate Academic Dishonesty 13.99.99.R0.03

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf

Graduate Student Academic Dishonesty 13.99.99.R0.10

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf

Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library- Room 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: studentdisabilityservices@tamuc.edu
Website: Office of Student Disability Resources and Services
http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun.

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Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the Carrying Concealed Handguns On Campus document and/or consult your event organizer.

Web url:
http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

COURSE OUTLINE / CALENDAR

Tentative Topics by Week

Week	TOPIC
6/3/2024	Review functions, enumerated types, arrays, Structures and Classes Pointers.
6/10/2024	Searching and Sorting, Recursion.
6/17/2024	Searching and Sorting. Selection, Merge, Insertion Sort
6/24/2024	Linked List, Stacks
7/1/2024	Queues, Binary Tree, Hash

~~HAVE A SUCCESSFUL SEMESTER~~

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