

Instructor: Replace the red bold type in this syllabus with content relevant to your course.



COSC 2336.01W (CSCI 270) Data Structures

COURSE SYLLABUS: Fall 2018

INSTRUCTOR INFORMATION

Instructor:

Sandy Huerter (pronounced HER-ter)

Office Location:

JOUR 211 (follow the hallway to the left of JOUR 222 or to the right of JOUR 218)

Office Hours:

M 3:15pm – 4:15 If I'm not in my office during office hours, look for a note on
T 2:00pm – 4:15 the door. If there's no note, you can check with the CSCI dept
W 3:30pm – 5:00 admin (Nicole Jones) in Jour 122 to be sure I'm on campus.
R 2:00pm – 4:15 * Unless I'm sick that day, I'm probably on my way and will be
there as soon as I can.

* I have lab sections Wednesdays 5-6:15 and Thursdays 2-3:15 and will usually be in Jour 200 during those times.

Office Phone:

903-886-5494 (CSci Dept. Office in JOUR 122 is 903-886-5409)

University Email Address:

Sandy.Huerter@tamuc.edu (please email again if I haven't replied within 24 hrs)

COURSE INFORMATION

Textbook Recommended (not required)

C++ Programming: from Problem Analysis to Program Design by D.S. Malik
6th edition ISBN: 9781133626381
or 5th edition ISBN: 9780538798082
or 7th edition ISBN: 9781285852744

A copy of the 5th edition of the Malik text is on reserve in the university library.

Software Required

C++ compiler (there are free compilers available for download – website addresses will be provide in a separate handout.

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Course Description

This course continues with the concept of abstract data structures (classes) begun in 152 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.

Prerequisite: COSC 1337 (CSci 152) (basics of the C / C++ language and an introduction to C++ classes)

Note: ideally this should **not** be your first class using C or C++

Student Learning Outcomes

(measured by exam and program assignment results)

After completion of this course, you will be able to use classes to implement the basic data structures (stacks, queues, linked lists, trees, and hash tables) and to use predefined classes from the Standard Template Library. You will be able to design and code a program for application areas in which these data structures would be useful. Given multiple algorithms to solve the same problem, you will be able to estimate which algorithm would be more efficient in terms of time and memory required.

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

My use of the eCollege replacement will be minimal this semester. All of my notes files and handouts are in Word format. You should be able to access the new learning management system and be able to use Microsoft Word.

Tips for Success in the Course

- 1) **Be here** as often as possible.
- 2) **Read assignments** and be ready for what we'll be talking about in class.
- 3) **Ask** if you don't understand something.

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- 4) **Get help** (sooner rather than later) if you have problems:
 - dept lab tutors in Jour 200 or 101-102
 - the Academic Success Center also provides tutoring in the library for a wide variety of subjects
 - make friends with at least one person in class so you can compare notes or check for anything you might have missed
 - get a study group together
- 5) **Stay caught up** as much as possible.
- 6) **Get started** on programs so that you have time to get help if you find you need some help.
- 7) **Do your own work.** Consult with others about problem-solving strategies, but **code it yourself.**
- 8) What you get out of any class depends to a very large degree on what you're willing to put into it. Get in the habit of writing little practice programs to try out new language features as we learn them. As you write more programs (even small ones), the process becomes easier, you're much more likely to remember how the language works, and you get much better at programming logic (the hardest part of computer programming).
- 9) Know your own limits and **don't over-extend yourself** any more than necessary.

GRADING

Your grade for the course will be based on the following activities and approximate percentages:

Pct	Activity
70%	Exams (3) Each exam is worth approximately 23% of your grade (almost a quarter of your grade average).
20%	Programs (probably 4-5) Assuming 5 programs, each one would be worth 4% of your grade (almost half a letter grade).
10%	Current events discussions about social, ethical, and security issues in computers and technology (one per week for 10 weeks – week 3 through week 12) Each of the 10 weeks of discussions is worth 1% of your grade. All 10 weeks are worth a letter grade.

Exams

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Format for the exams will typically be approximately half coding (usually small sections of code such as functions, parts of functions, or calling a function) and half analyzing the effects of executing code (for example, describing output, completing diagrams to show values assigned, etc.) or multiple-choice/true-false/fill-in-the-blank/short-essay questions about the behavior of the data structures being studied.

A **study guide** will be provided for each exam, listing topics to be covered (or omitted) and recommending selected problems from the text from which many of the exam questions will be derived. For each topic covered, I will recommend page numbers from the text and/or online tutorial links for your reference.

An optional **makeup exam** will be given toward the end of the semester which can be used to replace one of the grades for an exam already taken. More info on this later. This makeup exam will be in multiple-choice, true/false, and short answer format with minimal coding required.

Exams will be taken in face-to-face mode. I've checked everyone's class schedule, and there are only two students who are not also taking at least one face-to-face course on the Commerce campus. You'll have the option of scheduling an exam anytime during the week in which the on-campus section is taking it. So you would be able to take an exam on a day when you would be on campus anyway. I can arrange for someone to proctor an exam for you.

Navarro students will be responsible for finding someone to proctor their exam. That could be someone in your testing or disability services office or your campus library or some other faculty or staff member.

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

A = 90%-100%

B = 80%-89%

C = 70%-79%

D = 60%-69%

F = 59% or Below

You must earn an A on your own. Assuming that you have completed all assignments, lower borderline grades may be affected positively or negatively by factors such as the class grade distribution .

You need to give me a reason to think you deserve a grade higher than your percentage indicates and that you've made every effort to help yourself.

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TECHNOLOGY REQUIREMENTS

Browser support

D2L is committed to performing key application testing when new browser versions are released. New and updated functionality is also tested against the latest version of supported browsers. However, due to the frequency of some browser releases, D2L cannot guarantee that each browser version will perform as expected. If you encounter any issues with any of the browser versions listed in the tables below, contact D2L Support, who will determine the best course of action for resolution. Reported issues are prioritized by supported browsers and then maintenance browsers.

Supported browsers are the latest or most recent browser versions that are tested against new versions of D2L products. Customers can report problems and receive support for issues. For an optimal experience, D2L recommends using supported browsers with D2L products.

Maintenance browsers are older browser versions that are not tested extensively against new versions of D2L products. Customers can still report problems and receive support for critical issues; however, D2L does not guarantee all issues will be addressed. A maintenance browser becomes officially unsupported after one year.

Note the following:

- Ensure that your browser has JavaScript and Cookies enabled.
- For desktop systems, you must have Adobe Flash Player 10.1 or greater.
- The Brightspace Support features are now optimized for production environments when using the Google Chrome browser, Apple Safari browser, Microsoft Edge browser, Microsoft Internet Explorer browser, and Mozilla Firefox browsers.

Desktop Support

Browser	Supported Browser Version(s)	Maintenance Browser Version(s)
Microsoft® Edge	Latest	N/A
Microsoft® Internet Explorer®	N/A	11
Mozilla® Firefox®	Latest, ESR	N/A
Google® Chrome™	Latest	N/A
Apple® Safari®	Latest	N/A

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Tablet and Mobile Support

Device	Operating System	Browser	Supported Browser Version(s)
Android™	Android 4.4+	Chrome	Latest
Apple	iOS®	Safari, Chrome	The current major version of iOS (the latest minor or point release of that major version) and the previous major version of iOS (the latest minor or point release of that major version). For example, as of June 7, 2017, D2L supports iOS 10.3.2 and iOS 9.3.5, but not iOS 10.2.1, 9.0.2, or any other version. Chrome: Latest version for the iOS browser.
Windows	Windows 10	Edge, Chrome, Firefox	Latest of all browsers, and Firefox ESR.

- You will need regular access to a computer with a broadband Internet connection. The minimum computer requirements are:
 - 512 MB of RAM, 1 GB or more preferred
 - Broadband connection required courses are heavily video intensive
 - Video display capable of high-color 16-bit display 1024 x 768 or higher resolution
- You must have a: (these items are optional)
 - Sound card, which is usually integrated into your desktop or laptop computer
 - Speakers or headphones.
 - *For courses utilizing video-conferencing tools and/or an online proctoring solution, a webcam and microphone are required.
- Both versions of Java (32 bit and 64 bit) must be installed and up to date on your machine. At a minimum Java 7, update 51, is required to support the learning management system. The most current version of Java can be downloaded at: [JAVA web site http://www.java.com/en/download/manual.jsp](http://www.java.com/en/download/manual.jsp)
- Current anti-virus software must be installed and kept up to date.

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Running the browser check will ensure your internet browser is supported.

Pop-ups are allowed.

JavaScript is enabled.

Cookies are enabled.

- You will need some additional free software (plug-ins) for enhanced web browsing. Ensure that you download the free versions of the following software:
 - [Adobe Reader](https://get.adobe.com/reader/) <https://get.adobe.com/reader/>
 - [Adobe Flash Player](https://get.adobe.com/flashplayer/) (version 17 or later) <https://get.adobe.com/flashplayer/>
 - [Adobe Shockwave Player](https://get.adobe.com/shockwave/) <https://get.adobe.com/shockwave/>
 - [Apple Quick Time](http://www.apple.com/quicktime/download/) <http://www.apple.com/quicktime/download/>
- At a minimum, you must have Microsoft Office 2013, 2010, 2007 or Open Office. Microsoft Office is the standard office productivity software utilized by faculty, students, and staff. Microsoft Word is the standard word processing software, Microsoft Excel is the standard spreadsheet software, and Microsoft PowerPoint is the standard presentation software. Copying and pasting, along with attaching/uploading documents for assignment submission, will also be required. If you do not have Microsoft Office, you can check with the bookstore to see if they have any student copies.

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

Brightspace Support

Need Help?

Student Support

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

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Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778 or click on the **Live Chat** or click on the words “[click here](#)” to submit an issue via email.



System Maintenance

D2L runs monthly updates during the last week of the month, usually on Wednesday. The system should remain up during this time unless otherwise specified in an announcement. You may experience minimal impacts to performance and/or look and feel of the environment.

Interaction with Instructor Statement

You can expect a weekly email from me which will explain what will be happening in the course during the week and will contain a reminder of due dates for course components.

My use of the eCollege replacement for online courses will be minimal at the beginning of the semester but will hopefully increase during the semester. Until I have implemented a particular feature, I will be emailing notes and assignment files to you. I'll let you know by email when any new feature has been implemented.

If you have any questions or need help, please email Sandy.Huerter@tamuc.edu . If I haven't replied to an email within 24 hours, please re-send it to make sure that I've seen it.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Policies

Makeups:

If you miss either of the first two exams, you can take the optional makeup exam to replace the missing grade. To make up an exam, you must be able to complete it before the graded exams are returned to the class. If you know ahead of time that you have a problem with an exam time, let me know as soon as possible.

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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 Policies and Announcements

Students with Disabilities

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/>

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: [Netiquette](#)

<http://www.albion.com/netiquette/corerules.html>

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TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

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.

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>

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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. 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

Week Class Dates Activity

Week	Class Dates	Activity
1	27 – 30 Aug	Introduction and course overview eCollege access demo Review/intro structs and classes
2	3 Sep 4 – 6 Sep	Labor Day / no class Review/intro structs and classes
3	10 – 13 Sep	Review/intro structs and classes
4	17– 20 Sep	Pointer variables & Dynamic Variables

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5	24 – 27 Sep	Pointer variables & Dynamic Variables
6	1 – 4 Oct	Exam 1(estimated date is subject to change) over arrays, structs, using classes Pointer variables & Dynamic Variables
7	8 –11 Oct	Linked Lists
8	15 – 18 Oct	Linked Lists
9	22 – 25 Oct	Stacks
10	29 Oct – 1 Nov	Stacks Stack applications: function calls, postfix notation
11	5 – 8 Nov	Exam 2(estimated date is subject to change) over pointers, dynamic variables, linked lists Queues
12	12 – 15 Nov	Recursion
13	19 – 20 Nov 21 – 22 Nov	Recursion\ Thanksgiving break
14	26 – 29 Nov	Recursion Algorithm Analysis
15	3 – 6 Dec	Trees, Binary Search Trees Hash Tables
16	10 – 13 Dec Final Week	Exam 3 over stacks, queues, recursion, algorithm analysis, binary trees, hash tables TR Section: Thurs 13 Dec 10:30-12:30

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