Syllabus – Spring 2021

Course Information

Course Number:	CSCE 121	
Course Title:	Introduction to Program Design & Concepts	
Sections:	505-516	
Time:	**505-508** (Lecture) - 8:00am-8:50am (MWF)	**505** (Lab) - 8:00am-8:50am (T) in ZACH 244
	Lecture is online	**506** (Lab) - 8:00am-8:50am (R) in ZACH 244
		507 (Lab) - 9:45am-10:35am (T) in ZACH 244
		508 (Lab) - 9:45am-10:35am (R) in ZACH 244
	509-512 (Lecture) - 9:20am-10:10am (MWF)	**509** (Lab) - 11:30am-12:20pm (T) in ZACH 260
	Lecture is online	**510** (Lab) - 11:30am-12:20pm (R) in ZACH 260
		511 (Lab) - 5:00pm-5:50pm (T) in ZACH 244
		512 (Lab) - 5:00pm-5:50pm (R) in ZACH 244
	513-516 (Lecture) - 10:40am-11:30am (MWF)	**513** (Lab) - 6:45pm-7:35pm (T) in ZACH 244
	Lecture is online	**514** (Lab) - 6:45pm-7:35pm (R) in ZACH 244
		515 (Lab) - 8:00am-8:50am (T) in ZACH 310
		516 (Lab) - 8:00am-8:50am (R) in ZACH 310
Location:	Lecture - Online, Lab	
Credit Hours:	4	

Instructor and TA Details

Instructor

Instructor:	Prof. S. Lupoli
Office:	HRBB 322A
Phone:	979-845-2479 (not there often, please use Email or Zoom to reach)
E-Mail:	slupoli@***cse***.tamu.edu
Office Hours:	8-11:30am M,W,F via Zoom. See ECampus for the links (they may change)

Teaching Assistant (TA)

Find information on eCampus under Get Help - > Teaching Assistants.

Course Description

Extend prior programming knowledge to create computer programs that solve problems; use the C++ language; apply computational thinking to enhance problem solving; analyze, design and implement computer programs; use basic and aggregate data types to develop functional and object-oriented solutions; develop classes that use dynamic memory without introducing memory leaks; learn error handling strategies to develop more secure and robust programs.

Course Prerequisites

ENGR 102 or CSCE 110 or CSCE 111 or CSCE 206 or a programming course in high school or permission of the instructor.

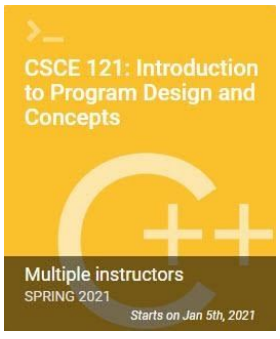
Course Learning Outcomes

Upon completion of the course students should be able to:

- Use C++ to develop programs.
- Analyze a problem, identify its important features to design and develop small computer programs or functions that solve the problem. Articulate the rationale for various design and implementation decisions.
- Represent algorithm designs as pseudocode or other appropriate representations.
- Given an algorithm, write code that implements the algorithm.
- Write code that follows common code readability practices.
- Document code so that others can easily understand and follow it.
- Explain the following concepts and utilize them when developing computer programs.
  - Abstraction
  - Information Hiding
  - Object-oriented decomposition
- List common data types used in computer programs.
- Define and use aggregate data types correctly, including arrays, vectors, and linked lists.
- Describe when each aggregate data type is appropriate.
- Define and use heterogeneous data types, including structs and classes.
- Use strategies that address errors in programs.
- Use debugging tools and techniques to find and fix errors in C++ source code.
- Use basic control structures including sequence, selection, and iteration as well as function invocation.
- Distinguish between adding and removing memory in relation to the stack and heap memory locations.
- Describe the process of allocating and deallocating dynamic memory.
- Write programs that use dynamic memory and avoid memory leaks.
- Use functions to implement abstraction and information hiding that avoid unintended memory side effects.
- Explain the concept of recursion and deploy it in problem solving.
- Describe the parts of a recursive function.
- Explain how to ensure a recursive function terminates.
- Write programs that use recursive functions.

Textbook and Resource Materials

Required Textbook



CSCE 121: Introduction to Program Design & Concepts C++ (Online Textbook)

- zyBook (http://learn.zybooks.com)
- Class Code: TAMUCSCE121Spring2021
- You are required to have access to your own copy linked to this class with the code above. Part of your grade depends on completion of activities in the zyBook.
- zyBooks has a refund policy. I've heard of refunds given as late as after Q-drops. So purchase ASAP. Even if you have to wait to purchase until after add/drop, you can sign up and get access to the first chapter for free!
- Note: You are required to know the information in "optional" sections in the first 2 chapters; however, any participation activities and challenge activities in these sections are optional. Example sections have been made optional throughout the text, but they can be a source of additional help if needed.

Recommended Textbooks

- *Programming Principles and Practice Using C++, Second Edition,* Bjarne Stroustrup, Pearson, 2014.
- *A Computer Science Tapestry, Second Edition*, Owen L. Astrachan, McGraw-Hill, 2000. (Free PDF)

Required Computer

- You must have your own computer for consuming online content that fulfills the Texas A&M Computer Requirements.
- You will have to install software on it. We will provide links to software you can install for the course and procedures for setting things up.

Bandwidth

You should have sufficient bandwidth to watch videos and use the online tools used in this course.

Technology to Capture an Image

At times you may be asked to create a sketch or diagram to submit electronically. You need the ability to get the diagram into a format that can be uploaded. You could sketch on paper and take a picture with your camera, sketch on a tablet device, or use a scanner. You should be able to do this quickly, especially if needed for an exam question.

Required Online Tools

eCampus (https://ecampus.tamu.edu/)

Dashboard for the entire course. This will link out to appropriate resources.

Piazza (https:// piazza.com/tamu/spring2021/csce121/home)

All questions will be fielded through Piazza.

- Everyone can see answers and other students can answer as well.
  - *o* We will endorse good student responses.
- Private messages can be posed to all instructors or an individual instructor.
  - *o* Email messages are more likely to be overlooked and should be used only in rare circumstances.

Note: Posts directed to instructors that would benefit the entire class and should be visible to all students will be updated so that the post is visible by the entire class. This might expose you as the source of the message if you did not indicate you wanted to be anonymous to the entire class.

Students will be added to the course Piazza by the instructors on Wednesday 20 January. Students who enroll in the course on or after Wednesday 20 January should contact their instructor to be added to the Piazza.

Mimir (https://class.mimir.io/cas_login/5315e0bf-a5bc-4521-baec-923474543dd5)

Online code submission system with autograding.Used for labwork, homework, and exams.

- TAMU Mimir login (https://class.mimir.io/cas_login/5315e0bf-a5bc-4521-baec-923474543dd5)
- Class access code: **b800e8f942**

Gradescope (https://www.gradescope.com/)

Used to grade and distribute exam grades. You will receive an email invitation after the add/drop registration period ends.

TAMU Google Shared Drive (https://google.tamu.edu/)

Used to share some course materials such as homework and labwork prompts. You must be logged into your TAMU Google account to access these materials or submit Google Forms (e.g. for a quiz). Your TAMU Google account will have to be the default account in your browser, or you can open an incognito window and log in from there.

It might take up to 24 hours after registering for the class to be able to access materials in the Google shared drive.

TAMU Zoom (https://zoom.tamu.edu)

Used for class meetings and meetings with instructors and TAs.

Grading Policy

If you want to challenge any grading, you must do so within one week of when the grade is published.

We reserve the right to audit the grades for any assignments submitted to this course. During the audit process, we can decrease or increase your score. This could result in lowering the score of already released grades.

Rounded % total	Letter Grade
100 - 90	A
<90 and ≥ 80	B
<80 and ≥ 70	C
<70 and ≥ 60	D
<60	F

Exams (40%)

The course exam average is the maximum of

- Final Exam grade
- Average of Exam 1, Exam 2, and Final Exam.

Exams are open book, open note.

- You **are not** allowed
    - to interact with anyone face to face or electronically during an exam.
    - to use sites like Chegg, CourseHero, and StackOverflow, or any tutoring service.
- You are allowed
    - to use your textbook.
    - any instructor's slides and examples.
    - any code you've written for homework or labwork.
    - C++ standards site
        - https://cppreference.com
        - https://cplusplus.com

See Make Up & Late Work policy.

Course Engagement (10%)

We will use multiple indicators to determine your engagement in the course.

- Indicators
    - Completion of weekly zyBook activities (80 points)
        - both Zybook's Challenge and Participation Exercises
    - Participation on Piazza (20 points)
        - 8 constructive contributions (answers)
        - +1 for those that are instructor endorsed (so one less contribution is REALLY good)

See Make Up & Late Work policy.

Homework (40%)

Homework assignments are completed **individually** outside of class and submitted weekly.

- You must write your individual homework independently.
- All detected plagiarism, cheating, and complicity will be reported to the Honor System Office.
  - Students have previously used code from Chegg; using such resources is not allowed.
  - Submitting code based on a solution or on starting code from such a resource is considered plagiarism. See Academic Dishonesty section below.

See Make Up & Late Work policy.

Labwork (10%)

Labwork are activities to help you get a better understanding of concepts that students traditionally struggle with or that are integral to know prior to doing homework.

- You must work collaboratively with other students during your lab session.
- Even though you will work collaboratively, you will submit individually.
- You must be present in the lab session to receive credit.

See Make Up & Late Work policy.

Modifiers

- **Syllabus Acknowledgement**
  - **o** If you fail to submit the syllabus acknowledgement form by Friday 29 January you will receive an F.

Make Up and Late Work Policy

See the Makeup Work Policy, the Attendance Policy, the Statement on Mental Health and Wellness, and the COVID-19 Amendment under University Policies below.

It is *your* responsibility to keep up with the class, even when unexpected events interfere.

Excused Absences

Before you can do any make up work, you must provide your instructor with any documentation for your excused absence.

- Submit any documentation for excused absences online.
- We will provide a link in ECampus

Exam Make Up

You may only make up exams missed due to a university excused absence. Note that if advanced notice is not feasible, you have two business days to provide notification. See Make Up policy under University Policies below.

A zero will be assigned for exams due to an unexcused absence. Documentation must be submitted prior to making up a missed exam.

If you miss an exam due to an excused absence you must take the make up exam on the designated date and time:

- Exam 1 Make Up: Friday, March 12 at 7:00 PM
- Exam 2 Make Up: Friday, April 16 at 7:00 PM
  - If and only if you have a course time conflict, you can make other arrangements with your instructor.

Course Engagement

Engagement cannot be made up. It is an indication of what you are currently doing to consistently keep up with course materials. However, excused absences will be considered when determining course engagement.

Homework Late Work

You may submit homework up to 3 days late at a penalty of 12% per day. Homework is not accepted more than 3 days late. Excused absences during the period of the homework will extend the due date by the number of days excused.

Note: Network congestion frequently increases close to deadlines. So waiting to submit until the last minute can easily lead it to becoming a late submission. We suggest finishing an assignment several hours in advance to ensure it is on time. You should also submit periodically as you develop your solution to get feedback from the autograding system.

Labwork Late Work

You should always complete labwork. If you have an excused absence, then you must visit a TA during office hours or by appointment to discuss your labwork solution before you can receive credit for it.

Accommodation Letters

See Americans with Disabilities Act (ADA) Policy under University Policies below.

If you have an accommodation letter from Disability Resources:

- Submit your accommodation letter electronically.
- Make an appointment with your instructor to discuss your accommodations.

Help and Support

Course Content

Piazza

You can post questions related to course content. See Piazza under Required Online Tools.

Teaching Assistants and Instructors

The CSCE 121 instructors and TAs are working collaboratively. So, you can go to any instructor or TA for most questions you have about the course. You may still need to meet with your instructor in some cases.

Find information on TA and Instructor help sessions on eCampus under “Get Help”

Peer Teachers

The peer teacher program aids students with course assignments.

Technical Support

Many tools are used in this course. Students tend to ask instructors and TAs for assistance. However, resolution happens much faster when you contact the vendors listed below rather than contacting us where we then have to contact the vendor. Often they have follow up questions that we cannot answer which further delays resolution if you are not in direct contact with them.

Texas A&M Resources

- Student eCampus Help
- Help Desk Central
- Mediasite Help (i.e. videos)

Vendors

- zyBook Support
- Mimir
  - Mimir Help Webpage
  - When on any Mimir page, click on the chat icon in the lower left corner.

If you can’t find resolution from these sources, contact a TA or instructor and they will try to guide you.

Course Schedule

Class Meetings

Lecture

- Since all course lecture material is online, I will be conducting Q/A sessions during your particular lecture over Zoom. Attendance is not required, but HIGHLY encouraged
- Please check on Page 1 for the schedule

Lab

- Labs can either be Face-to-Face or distant using Zoom
- Attendance is taken each lab
- You need to appear for your particular lab and lab time

Topics

- What you (should) already know, but in C++
- Software Development Process
- Errors, Debugging, and Exceptions
- Object Oriented Concepts
- Input/Output Streams
- Data Validation
- Arrays
- Dynamic Memory
- Dynamic Arrays
- Functions – Pass by Reference
- Class Design
- Writing a Class
- Dynamic Memory and Classes
- Linked Lists
- Inheritance and Polymorphism
- Recursion

Exam and Homework Dates

- January 29 – Homework due
- February 5 – Homework due
- February 12 – Homework due
- February 19 – Homework due
- February 26 – Homework due
- **March 4/5 – Exam 1 ** add time if you want/need to**
- March 12 – Homework due
- March 19 – Homework due
- March 26 – Homework due
- April 2 – Homework due
- **April 8/9 – Exam 2 ** add time if you want/need to**
- April 16 – Homework due
- April 23 – Homework due
- April 29 – Homework due
- **May ? – Final Exam – ?:?? AM/PM**

Syllabus Acknowledgement

- January 29 – Submit syllabus acknowledgement

Student Behavior & Academic Integrity

See Academic Integrity Statement and Policy under University Policies below.

Acknowledgement

By submitting anything to this course, electronically or otherwise, you are asserting the following: “On my honor, as an Aggie, I have neither given nor received unauthorized aid on this academic work. In particular, I certify that I have listed above all the sources that I consulted regarding this assignment, and that I have not received or given any assistance that is contrary to the letter or the spirit of the collaboration guidelines for this assignment.”

Academic Dishonesty

Academic dishonesty will not be tolerated. For individual homework assignments, each student is expected to write his or her own programs from beginning to end.

If it is determined to the satisfaction of the instructor that any student's submission (unless it is a group/team submission for a group/team activity) is not the product of the individual, all students involved are subject to the Texas A&M University Honor System Rules, including a course grade of F* (with the ‘*’ denoting academic dishonesty). Additional penalties as determined by the Aggie Honor System Office may be applied if this is not the first offense.

It is imperative that each student clearly understand those rules and the severe consequences that can result from the adjudication of an Honor Code Violation.

Plagiarism & Cheating

Individual programming MUST be done on your own. Plagiarism and cheating will not be tolerated. Plagiarism is the presentation of the work of someone else without giving him or her due credit. In this course, **you cannot use another's work** even if you cite it. Cheating is using or attempting to use unauthorized materials. For example, since homework assignments are to be done individually, you are cheating if you discuss it with another student. However discussing it with instructors, peer teachers and TAs is acceptable. If you copy, you are both plagiarizing and cheating.

To help identify possible instances of plagiarism, we use systems for plagiarism detection. Students engaging in plagiarism will be sanctioned. A typical result is an F in the course and submission of the incident to the Aggie Honor System.

Complicity

Every student should understand that complicity – helping or attempting to help another student commit an act of academic dishonesty – also constitutes academic dishonesty and carries the same punishment as cheating and plagiarism.

In other words, if you provide your solution to another student, even if that student does not turn it in for credit, you have committed an act of academic dishonesty. All involved will be subject to the same consequences, such as a course grade of F*.

Collaboration

Collaboration is important for facilitating learning, and your peers can be a great resource. In this class you can only collaborate on labworks and in class activities. All other assignments and exams must be done independently. If you have an issue that needs clarification, contact an instructor or TA.

Netiquette

Netiquette is network etiquette. Netiquette covers both common courtesy online and the informal interactions that occur when communication occurs online. Faculty and students are expected to follow some general netiquette rules (https://distance.tamu.edu/Student-Rules-and-Policies/Aggie-Honor-Code-and-Netiquette). Your instructor may introduce additional guidelines as needed.

Course Copyright

The materials used within this course are copyrighted. These materials include, but are not limited to, the syllabi, quizzes, exams, homework and labwork problems, online handouts, course videos, audio and visual recordings of classes, etc. Because these materials are copyrighted, you do not have the right to copy or distribute these materials, unless permission is expressly granted.

Recording statement

Students may not record audio or video of any course activity unless the student has an approved accommodation from Disability Services permitting the recording of lectures and/or laboratory sessions. This accommodation letter must be presented to the instructor in advance of any recording being done. Students with permission to record classes are not permitted to redistribute audio or video recordings of statements or comments from the course to other individuals without the express permission of the faculty member and of any students who are recorded.

Course Plagiarism

All materials generated by the instructor for this class (which may include but are not limited to syllabi and in-class materials) are copyrighted. You do not have the right to copy such materials unless the instructor expressly grants permission. As commonly defined, plagiarism consists of passing off as one's own the ideas, words, writing, etc. which belong to another. Plagiarism is one of the worst academic violations, for the plagiarist destroys trust among others. If you have any questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules, under the section "Scholastic Dishonesty."

University Policies

Attendance Policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to Student Rule 7 in its entirety for information about excused absences, including definitions, and related documentation and timelines.

Makeup Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Please refer to Student Rule 7 in its entirety for information about makeup work, including definitions, and related documentation and timelines.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" (Student Rule 7, Section 7.4.1).

"The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence" (Student Rule 7, Section 7.4.2).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See Student Rule 24.)

Academic Integrity Statement and Policy

"An Aggie does not lie, cheat or steal, or tolerate those who do."

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" (Section 20.1.2.3, Student Rule 20).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at aggiehonor.tamu.edu.

Americans with Disabilities Act (ADA) Policy

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Resources in the Student Services Building or at (979) 845-1637 or visit disability.tamu.edu. Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

Title IX and Statement on Limits to Confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see University Rule 08.01.01.M1):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, you will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with Counseling and Psychological Services (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's Title IX webpage.

Statement on Mental Health and Wellness

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in proper self-care by utilizing the resources and services available from Counseling & Psychological Services (CAPS). Students who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at suicidepreventionlifeline.org.

COVID-19 Temporary Addendum

The Faculty Senate temporarily added the following statements to the minimum syllabus requirements in Spring 2021 as part of the university's COVID-19 response.

Campus Safety Measures

To promote public safety and protect students, faculty, and staff during the coronavirus pandemic, Texas A&M University has adopted policies and practices for the Spring 2021 academic term to limit virus transmission. Students must observe the following practices while participating in face-to-face courses and course-related activities (office hours, help sessions, transitioning to and between classes, study spaces, academic services, etc.):

- Self-monitoring—Students should follow CDC recommendations for self-monitoring. **Students who have a fever or exhibit symptoms of COVID-19 should participate in class remotely if that option is available, and should not participate in face-to-face instruction.**
- Face Coverings—Face coverings (cloth face covering, surgical mask, etc.) must be properly worn in all non-private spaces including classrooms, teaching laboratories, common spaces such as lobbies and hallways, public study spaces, libraries, academic resource and support offices, and outdoor spaces where 6 feet of physical distancing is difficult to reliably maintain. Description of face coverings and additional guidance are provided in the Face Covering policy and Frequently Asked Questions (FAQ) available on the Provost website.
- Physical Distancing—Physical distancing must be maintained between students, instructors, and others in course and course-related activities.
- Classroom Ingress/Egress—Students must follow marked pathways for entering and exiting classrooms and other teaching spaces. Leave classrooms promptly after course activities have concluded. Do not congregate in hallways and maintain 6-foot physical distancing when waiting to enter classrooms and other instructional spaces.
- To attend a face-to-face class, students must properly wear an approved face covering If a student refuses to wear a face covering, the instructor should ask the student to leave and join the class remotely. If the student does not leave the class, the faculty member should report that student to the Student Conduct office for sanctions. Additionally, the faculty member may choose to teach that day's class remotely for all students, or dismiss the class in the case of a traditional face to face lecture.

Personal Illness and Quarantine

Students required to quarantine must participate in courses and course-related activities remotely, if that option is available, and **must not attend face-to-face course activities**. Students should notify their instructors of the quarantine requirement. Students under quarantine are expected to participate in courses and complete graded work unless they have symptoms that are too severe to participate in course activities.

Students experiencing personal injury or Illness that is too severe for the student to attend class qualify for an excused absence (See Student Rule 7, Section 7.2.2.) To receive an excused absence, students must comply with the documentation and notification guidelines outlined in Student Rule 7.