CSCE 111 Introduction to Programming Concepts Course Syllabus

Wait a Minute

What are all of these NON-computer science majors doing taking this class? I am about to reach over 1500 students this semester in this class. Why are students taking this and why are other majors requiring it?

The use of computers in every industry makes this a very good reason.

Required for all Students?

Throughout many college careers, there are classes that are required for every major. There are people that believe one or two computer science classes should be included in this list. Like English (in an English speaking location) is required to be able to communicate with people, more and more, we need to communicate with machines. Computer science classes can help with that.

Why do I Teach This

There are a lot of reasons this is a class I chose to teach:

- I think it is fun to see a machine do exactly what I command.
- I think it is more fun to see students realize this is very doable.
- I enjoy the challenge and the reward of your success.
- I have had a fantastic career developing software.
- I think there is so much more to come, I want to help others get ready.
- With such a large base of software now, one can focus on their specialty and not have to be a “Computer Scientist” to make good use of computing.
- Java is a fun language to teach.

What’s Next?

Students completing this course should be able to:

- Feel comfortable using a computer.

- Use Java to produce software.
- Understand programming in other settings, like Excel or JavaScript.
- Feel comfortable changing their major to Computer Science.

Course Overview

The computer's role in culture has expanded from a calculating machine used by governments to the iPod as a fashion accessory, the Smart Phone as a companion, and the Internet as a medium of self-expression. In the 1950s, the idea of dedicating a computer to entertainment was unthinkable; today revenues from the computer game industry exceed Hollywood. More humans own a computer than own a toothbrush and Apple is one of the world's largest company having overtaken many Oil, Agriculture, and Manufacturing sectors.

We inhabit a century where every job will be technical. In the 21st century, learning to program a computer is empowerment. From "if" conditionals to "for" loops, knowing the basics of programming allows you to understand the way the modern world works. Programming instruction teaches procedural and functional thinking, project management and time management, skills that are essential components of an empowered individual. Programming is the power to create, the power to change, and the power to influence. Today's students regardless of their ultimate field of study or occupation need this fundamental knowledge.

Programming teaches logic, algorithmic thinking, and an iterative approach to solving problems and testing your ideas. These skills make you smarter and are useful no matter what you do. Learning to program can be incredibly rewarding, give you a new appreciation for technology, and introduce countless career opportunities.

Catalog Description

Using computation to enhance problem-solving abilities; understanding how people communicate with computers, and how computing affects society; computational thinking; software design principles, including algorithm design, data representation, abstraction, modularity, structured and object-oriented programming, documentation, testing, portability, and maintenance; understanding programs' abilities and limitations; development and execution of programs.

Weekly Topics

Some of the topics to be covered in lecture periods are:

- Formal and natural languages.

- Variables, assignment, printing, mental models for computers.
- Operators, math, random numbers, algorithms.
- Conditionals, if statements. Switch statements, trees, composing conditionals.
- Looping, while do loops, do while loops, flow charts.
- Arrays and Lists, enhanced for loops
- Combining branching looping and I/O
- Methods and Classes
- Code refactoring, Java Libraries, Objects, Exceptions, Code verification
- File I/O
- Object Creation and Design
- Graphical user interface

Learning Outcomes

Students completing this course should be able to:

- Use a text editor to program Java code.
- Use a Java compiler to produce executable software.
- Identify the basic syntax and semantics of the Java programming language.
- Use appropriate commenting, layout, and naming to communicate code intent
- Understand the primitive data types built into the Java language.
- Understand the concepts of Java classes and objects.
- Understand the concepts of lifetime, scope, and the initialization mechanism of variables.
- Implement Java code branching using if or switch statements.
- Program loops with while, for, and do statements.
- Make use of arrays to store and process lists of data.
- Assemble data and methods into classes following the software engineering principles of encapsulation and data hiding.
- Organize Java code following the software engineering principles of modularity and abstraction.
- Create Java I/O interfaces
- Read, interpret, analyze, and explain introductory Java programs.
- Test and evaluate introductory Java programs.

Class Meetings:

This course requires you to have a computer. This complies with the College of Engineering's Bring Your Own Device (BYOD) policy.

Lecture:

- Sections 500 – 501: Innovative Learning Classroom Building 112
  - MWF 11:30 AM – 12:20 PM

Lab:

- Section 501: Innovative Learning Classroom Building 223
  - Mondays and Wednesdays 3:00 pm - 3:50 pm
- Section 502: Innovative Learning Classroom Building 223
  - Mondays and Wednesdays 4:10 pm - 5:00 pm

Instructor:
Robert Lightfoot
Use Canvas email for question about class and grades.

Help/Office Hours: Days/Times Posted on Canvas

Teaching Assistants:

CSCE 111 has 7 undergraduate TAs this semester. You will find their office hours in Canvas.

Grading

Grading will come from the accumulation of points throughout the semester. There are a total of 1500 points available to earn. You need 1050 or more to get an A. Unlike the traditional 90% or 1350 points, you can choose from different assignments with different values to get your points. You can choose the point level you want to achieve and know the grade you have earned base on the items you have shown mastery towards.

To show mastery in a topic, you must achieve 70% or greater. Otherwise no credit is given for that topic.

The grading scale expected to be used is:

A >= 1050 points > B >= 950 points > C >= 850 points D >= 750 points > F < 750 points

The main path includes 4 categories. A student must get 70% on each of the main assignment groups to get a C or better in the class.

Main Categories

4 of the 11 pathways make up the main Categories that need to be mastered to be successful in this class. **To pass the class you must pass the core categories**. To get a C or better in the class, you must get 70% or better in the core categories.

The main requirements will provide enough points to get a C in the course. This is the minimum needed to pass. By choosing other assignments or additional pathways, you can build your grade to the grade you want.

zyBooks: (Core)
Weekly zyBooks assignments account for 100 points. Each week will have a reading to do before class and examples and challenge activities to do by the end of the week. You must archive 70 points for this to count towards your point total.

Lab: (Core)
Lab works, activities, and/or demos count for 100 points of your grade. You must archive 70 points for this to count towards your point total.

Assignments: (Core)
Weekly coding assignments account for 500 points of your grade. More complicated assignments towards the end of the semester are weighted heavier than earlier ones. You must archive 350 points for this to count towards your point total.

Projects: (Core)
Projects account for 200 points of your grade. There will be two projects with each project having multiple deliverables. Projects are team-based. You must archive 140 points for this to count towards your point total. You must be present for milestone checks and project demonstrations to receive credit for your project.

Additional pathways to build your personal learning experience:

7 of the 11 categories are additional pathways that you can pick. If you show mastery in this topic (score 70 or more) these points can go to your total. Many of these are a great way to build a solid base of points that will get you the grade you want.

Engagement and Participation:

Engagement counts for 100 points. Historically in my classes, those students who get full credit for engagement make the highest grades. Those who get less than full credit, down to zero credit, do not make the highest grades.

Each week you will have several opportunities to show your engagement. This is one of the best ways to earn points. Most engagement points will be earned while in class. There will be more than 100 points of opportunity to account for

some missed chances. This path follows along each week of the semester. There is no way to make up engagement.

Discussions

Weekly discussions account for 100 points. Topics will be given every week. You will provide your thoughts on the discussion and reflect on 2 other students work. You must archive 70 points for this to count towards your point total. These are online discussions in Canvas that happen once per week for the whole semester.

Coding Challenges

Coding challenges will be worth 100 points. There will be coding challenges available for you to be able to do. Information will be posted when the challenge is available. You must archive 70 points (combined score on all 5) for this to count towards your point total. Coding Challenges is a 5 week “scenic tour” of things we have learned.

Social Media Scavenger Hunt

A scavenger hunt will be worth 50 points. Information will be posted when the challenge is available. You must archive 35 points for this to count towards your point total. The scavenger hunt is a small rest stop on your path that will be available early in the semester.

JavaScript

A JavaScript option worth 50 points will be added to one of your assignments. Details will be provided. If you would like to try this, it can add to your points. You must archive 35 points for this to count towards your point total. This is another small rest stop on your path that will be available once you have learned enough in the class to be successful.

YouTube Channel

A YouTube Channel option worth 100 points will be available as one of your assignments. Details will be provided. If you would like to try this, it can add to your points. You must archive 70 points for this to count towards your point total. The YouTube option is another scenic side road that will help you show your mastery in this class.

Final Test (Optional)

A Final test will be worth 100 points. If you usually do well at tests, this will be a chance to take one. Information will be posted when the test is available, how

you will take it, and what it will cover. You must archive 70 points for this to count towards your point total. This is a great way to make up for some things that might not have gone as planned. It only adds to your grade and cannot reduce it.

Late Work:

Late work on coding assignments will receive a 10% reduction per day for a maximum of 3 days. After this period, late work is not accepted. Late work is not accepted for other items.

Extensions on due dates are required for any excused absences. You may ask for these in class.

Required Textbook

zyBooks Java Textbook is required for this class. To subscribe:

1. Click any zyBooks assignment link in your learning management system (Do not go to the zyBooks website and create a new account)
2. Subscribe

A subscription is **$77**. Students may begin subscribing on Dec 27, 2021 and the cutoff to subscribe is May 10, 2022. Subscriptions will last until Jun 13, 2022.

University and Course 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.

Attendance and participation is expected in the course and will be recorded in both lectures and labs. Up to 100 points of the course grade will be based on participation, and absences may prevent you from earning any participation points.

It is particularly important to attend lab sessions since this will often serve as a team meeting time for your project work. In addition, students may miss in-class activities, which will not be made up without prior approval. Note that remote students are still required to attend class online sessions and participate in in-class activities.

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 reasons 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.)

If you know you are going to miss a class or assessment, please let the instructor know ahead of time. If an absence is excused (see Student Rule 7), the instructor will either provide you an opportunity to make up any work that contributes to the final grade or provide a satisfactory alternative by a date agreed upon by you and instructor. You are responsible for providing satisfactory evidence to the instructor to substantiate the reason for the absence. Falsification of documentation is a violation of the Honor Code. Other absences may be excused at the discretion of the instructor with prior notification and proper documentation. In cases where prior notification is not feasible (e.g., accident or emergency) you must provide notification by the end of the second working day after the absence, including an explanation of why notice could not be sent prior to the class. Accommodations sought for absences due to the observance of a religious holiday can be sought either prior or after the absence, but not later than two working days after the absence.

Bring Your Own Device:

BYOD is an initiative in the college of engineering where students are required to bring their own computing device to class. Students need to have a computer or laptop with stable internet access, microphone, and webcam. Students also need a smartphone as a backup in the case of a network outage. See the BYOD webpage for information on the program, approved devices, and financial assistance. BYOD devices fulfill the requirements for this class.

Communication:

We will use Canvas to post assignments, course resources, and send announcements. It is your responsibility to check Canvas and pay attention to class emails.

Other forms of Communication will be outlined in Canvas.

For personal or private questions, email me through canvas. I receive a lot of email in the regular TAMU email, this will help me find you and answer your question much quicker.

Submissions of Assignments:

All assignments will be turned in electronically through Canvas (unless otherwise specified) by the due date and time given on the assignment. Email submissions will not be accepted.

Academic Integrity Statement and Policy:

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

For this class, any use of websites like Chegg, CourseHero, or others is neither needed nor allowed. All instances of this will be sent to the Honor Council with the recommended sanction of F*. No assignment is worth this. In fact, many assignments can be skipped altogether without preventing an A in the course. The posting of assignments from this course, as well as accessing the answers provided is considered cheating. Logs are provided from these companies and any access to a question can result in an Honor Council Violation. (See the Course Resource tab on Canvas for approved resources.)

"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.

- Definitions of academic misconduct which includes plagiarism.
- List of sanctions that can be applied if academic misconduct is found.

For this class, certain aspects of the honor code need to be clarified.

1. There will be times in this course where you or your team make use of external code/software/libraries. Whenever this is done, you must make sure that you:
    A. Follow any licensing and/or use restrictions that library/code requires
    B. Clearly document what the source of the external code was, and how it was used

2. There may be cases in this course where you or your team seek outside assistance related to one of the projects. Any assistance received from people other than members of your team, the professor, teaching assistants, or peer teacher needs to be clearly documented.
3. You will be working in team environments in this course, and your work as a team will be used to determine grades. As such, it is your responsibility, when asked, to:

    a. Accurately describe the work that you have done on a team project. Claiming credit for work that you have not done or that others did instead is a violation of the honor code.
    b. Accurately describe (to the best of your knowledge) the performance of other team members. “Covering” for another team member (claiming they did more work than you know they did, or exaggerating the work they did) or “spiking” them (claiming they did less work than you know they did or purposefully minimizing the work they did) are examples of honor code violations.
    c. Prevent (as best you can) or report (known or suspected) violations of the honor code by your other team members. You share responsibility when a project is turned in; if you are aware of a teammate having violated the code in his/her work on the project, and do not report it, you are claiming credit for that violation yourself.

If there are any questions or concerns about whether an action is appropriate, you should check with the professor or teaching assistant first. If in doubt, assume that it is not appropriate.

Americans with Disabilities Act (ADA) Policy Statement:

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.

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 Fall 2020 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 and should not participate in face-to-face instruction.**
- Face Coverings: Face coverings (cloth face covering, surgical mask, etc.) are encouraged to 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.

Personal Illness and Quarantine:

Students required to quarantine must participate in courses and course-related activities remotely 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. While Student Rule 7, Section 7.3.2.1, indicates a medical confirmation note from the student's medical provider is preferred.

Schedule

In this class, our weekly schedule will be very constant. The week will contain a module that has zyBooks reading and some challenge activities. A discussion over current topics. And a coding assignment.
Each week in Lab you are likely to get 2 lab works to complete. We will introduce additional projects throughout the semester to

After module 6, we will start our first project.
After module 10, we will start our final project.