Syllabus-S23

Sunday, December 19, 2021 3:14 PM

CS/CE 1337.006 - Computer Science I
Mondays & Wednesdays 4-5:15pm in GR 3.420
Websites: elearning.utdallas.edu (assignment submissions, grades, etc.)
utdallas.box.com/v/cs1337-spr23 (programs), utdallas.box.com/v/cs1337-spr23-slides (slides)

Instructor	Dr. Jey Veerasamy *Online Office hours* (MS Teams utd.link/jey): Mon & Wed 1-3pm OR by appointment *Communication:* MS Teams chat (preferred) or email jeyv@utdallas.edu
TA	TBD

Prerequisites: CS 1336 with a grade of C or better or equivalent.

Catalog Description:
(3 semester credit hours) Review of control structures and data types with emphasis on structured data types. Applies the object-oriented programming paradigm, focusing on the definition and use of classes along with the fundamentals of object-oriented design. Includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering. Programming language of choice is C/C++. Students will also be registered for an exam section.

Prerequisite: CS 1336 with a grade of C or better or equivalent. (Same as CE 1337) (3-0) S

Course Learning Outcomes:
After successful completion of this course, the student should have an:
1. Ability to use single and multi-dimension arrays
2. Ability to implement simple searching and sorting algorithms
3. Ability to implement pointers and perform simple memory management
4. Ability to implement structured data types
5. Ability to define and implement a class
6. Ability to use fundamentals of object-oriented design

Notes: This course is the middle one in the UTDCS programming sequence. Goal is to build your coding expertise in these courses so that you can apply your skills to complete assignments/projects in all the future courses, without much handholding.

CS 1336 Programming Fundamentals (C++)
CS 1337 Computer Science I (C++)
CS 2336 Computer Science II (Java)

Teaching Philosophy Statement

My goal is to make each class as enjoyable as possible! I use project based learning approach to teach. In other words, I work on a series of real-world scenario based problems. After discussing each problem in high level, I expect the students to code along with me in the class.

My exams will contain a mix of multiple choice & fill-in-the-blank questions and one or two coding questions. Since I focus on the big picture and problem solving skills, I encourage the students to read the book to get the complete details. You will work on one activity in each class and one or more problems as the weekly assignment. I expect a typical student to spend 3-4 hours every week for the homework. There will be plenty of help available to the students (my office hours, TA office hours & CSMC) - use them effectively to avoid frustration & wasting time - make it an enjoyable learning experience!

Textbook

Starting Out with C++, From Control Structures through Objects (9th edition); Gaddis, Tony; Addison-Wesley Publishing. ISBN-13: 978-0134498379 ISBN-10: 0134498372 (Revel digital edition OR previous editions are OK too).
Notes regarding textbook material: As you read the text, watch the corresponding VideoNotes, available at pearsonhighered.com/gaddis.

We will be using codio platform to submit & auto-grade the assignments and most activities. Your submissions will be tested against several testcases, similar to ZyLab platform you might have used in CS 1136/1336 courses. You will be promoted to purchase a license ($40 fee) as part of the first assignment/activity we will do in that platform.

Software Options:

- Windows: Code::Blocks IDE from codeblocks.org/downloads/binaries - codeblocks-20.03mingw-setup.exe (mingw is important – it is the compiler!) - very easy to install!
- Mac: use pre-installed XCode
- Web based: https://replit.com/new/cpp - this popular site supports several languages!
- Web based: Online GDB compiler onlinegdb.com/online_c++_compiler (includes debugging!)
- There are several other popular ones out there, including Visual Studio - incredibuild.com/blog/best-c-ides has a good list!

Additional optional resources:

C++ language tutorial www.cplusplus.com/files/tutorial.pdf
C++ reference: www.cppreference.com
C++ tutorial www.learncpp.com

Academic Calendar (TENTATIVE, but the test dates are fixed):

Week	Topic	Reading
1	Syllabus review & codio Review: Arrays & Functions	Ch. 1-8
2	Review: Arrays & Functions, Debugging Coding contest sites (USACO and Kattis)	
3	Pointers Review C language	Ch. 9
4	Characters, C-Strings, and the String class	Ch. 10
5	Structured Data (struct)	Ch. 11.1-11.10
6	Introduction to Classes	Ch. 13
7	Classes: Operator Overloading	
8	Classes: Copy constructor & = operator **Test 1 – March 8**	Ch. 14
9	Composition	
10	Inheritance, Polymorphism, and Pure Virtual Functions	Ch. 15
11	Object Oriented Design	
12	Object Oriented Design	
13	Introduction to Recursion	Ch. 19
14	Introduction to Recursion	
15	**Test 2 – May 3**	

Grading Policy

Course credit is only given for work assigned in the course schedule. No extra work will be assigned nor will extra credit be given for any extra work performed by a student. Don't ask for a bump in the final grade - it should be earned, not just given!

Tests	30%	There will be 2 tests (Test1: 15% & Test2: 15%) You need to take each test during the class timings in the classroom using Lockdown browser. Each test will contain a few multiple choice questions, fill-in-the-blank questions & one or two coding questions. There will be a few bonus questions to reduce your stress ☺ Any make-up tests will be arranged and scheduled during the same week at the discretion of the instructor. There should be a valid reason (like Dr note, official off-site event participation, etc.) for scheduling make-up tests & you need to coordinate with the instructor in advance. Makeup test due to other scenarios (including missing to book the slot in the testing center) will result in 20% penalty. Also, make-up test questions will be different, so the complexity may vary a bit. Best way to prepare for the test will be to attend each class & be engaged, complete the activities and weekly assignments & get your doubts clarified in timely manner. No extra preparation is needed for the tests!

Assignments	40%	There will be weekly assignments due on Wednesdays & they will have equal weightage – all of them together will contribute 40% to the final weighted grade. This high weightage indicates the importance of weekly assignments! Complexity level of each assignment will vary – each assignment may take several hours to complete. You are expected to start working on them as soon as they are posted so that you have "enough" time to work through the glitches, get the necessary help & still manage to submit on time. Do not expect me or the TA to rescue you at the 11th hour! Late submissions will be accepted with 10% penalty until Sunday night. If you cannot complete an assignment due to medical condition, send the Doctor note to the professor using MS Teams chat. You will be given a few additional days to complete the assignment. Each week's assignment may vary from multiple small programs to one large program OR somewhere in-between. You are expected to spend several hours in a computer every week. Right way to approach the programming assignments is to start on them right away & get help when you get stuck (you can approach the instructor, TA, or tutors at CS mentor center for help). Do not waste lots of hours trying to fix one specific issue. In simple words, your approach will determine whether programming assignments provide an enjoyable learning experience or end up like a painful activity that ruins your self-confidence. You can develop & test your program using any C++ IDE, but you need to pass all the official testcases in codio to complete. Assignments are auto-graded through codio & the scores will appear automatically in elearning. Your program should be as generic as possible – it should be able to handle all possible valid input values and output meaningful results. As time permits, TA will manually review your code in codio and give feedback. All submissions are subject to random manual inspection as well - you should NOT use any concepts that is not yet covered in the course yet. You should NOT write code just to pass the specified testcases either. Your assignment score may be reduced to 0 for such violations. We are all here to learn! Sophisticated tools are available in ZyLabs and beyond to detect plagiarism. Suspicious cases will be referred to UTD administration directly - Review http://utdallas.edu/conduct/integrity & http://utdallas.edu/conduct/manage-dishonesty for details. If you don't like writing a lot of code, you are in the wrong major!
Activities	30%	There will be 1 or 2 activities every week (relatively simple compared to Assignments - should not take more than 1 hour each) to ensure that you are keeping up with the class content (complete tutorials at home, finish simple exercise or take online quiz etc.) You also need to complete an in-class activity in every class - bring your laptop to every class - all of them will contribute equally & together they will account for 30% of your final grade. Activities ensure that you are keeping up with the course - they cannot be made up after the deadline! In other words, late submissions will NOT be accepted, however 2 lowest scores will be dropped when computing the final grade, to cover the common issues like car-trouble, overslept, etc. You should be able to earn full 30% if you attend all the sessions. If you cannot complete an activity due to medical condition, send the Doctor note to the professor using MS Teams chat. You will be given additional time to complete OR exempted from that activity.

Here is the standard mapping used for mapping the weighted total to letter grades in UTD. You have to earn the grade with your work. I do not plan to round up to improve your final grade.

A+ >= 97	97 > A >= 94	94 > A- >= 90
90 > B+ >= 87	87 > B >= 84	84 > B- >= 80
80 > C+ >= 77	77 > C >= 74	74 > C- >= 70
70 > D+ >= 67	67 > D >= 64	64 > D- >= 60
60 > F		

Weighted total in your gradebook shows the current weighted grade based on your graded work. For example, if you have done only 2 assignments & 2 weeks of Class work so far, current grade will be based on only those entries. So, it will continue to change throughout the semester as the items are graded.

Course & Instructor Policies

You need to bring your laptop to each class. We will work on a series of coding problems in each session. I expect you to be physically and mentally present in the class. You are NOT allowed to do anything in the laptop unrelated to the class work.

In addition to meeting the instructor before or after the class, you can also visit the instructor or TA during respective virtual office hours. This is preferred approach specifically if you run into project related issues & you need help to progress. Outside the office hours, you can also send the code or the screenshot of error message/output by MS Teams. Please do NOT use the email system.

Class Recordings

Instructor will try to record all the sessions in MS Teams so that all students can use them for future reference. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same: "As a Comet, I pledge honesty, integrity, and service in all that I do."

Plagiarism has no place in the college education. UTD policies require all the professors to forward all suspicious cases to academic disciplinary committee. So, do not copy the code from others & do not give your code to others.

Please review the UTD policy and guideline on Student behavior and conduct, academic honesty and integrity in https://www.utdallas.edu/conduct/integrity/ and UTD BAIT team in https://www.utd.edu/conduct/bait/

Course Access and Navigation
This course can be accessed using your UT Dallas NetID account on the eLearning website.

Please see the course access and navigation section of the Getting Started with eLearning webpage for more information.

To become familiar with the eLearning tool, please see the Student eLearning Tutorials webpage.

UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The eLearning Support Center includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

Communication
This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the Student eLearning Tutorials webpage for video demonstrations on eLearning tools.

Student emails and discussion board messages will be answered within 3 working days under normal circumstances.

Distance Learning Student Resources
Online students have access to resources including the McDermott Library, Academic Advising, The Office of Student AccessAbility, and many others. Please see the eLearning Current Students webpage for more information.

Server Unavailability or Other Technical Difficulties
The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online eLearning Help Desk. The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.

Classroom Conduct Requirements Related to Public Health Measures

UT Dallas will follow the public health and safety guidelines put forth by the Centers for Disease Control and Prevention (CDC), the Texas Department of State Health Services (DSHS), and local public health agencies that are in effect at that time during the Fall 2021 semester to the extent allowed by state governance. We strongly encourage all Comets to get vaccinated and wear face coverings as recommended by the CDC. Check the Comets United: Latest Updates webpage for the latest guidance on the University's public health measures. Comets are expected to carry out Student Safety protocols in adherence to the Comet Commitment. Everyone is expected to complete the Required Daily Health Screening. Those students who do not comply will be referred to the Office of Community Standards and Conduct for disciplinary action under the Student Code of Conduct – UTSP5003.

Academic Support Resources

The information contained in the following link lists the University's academic support resources for all students. Please see http://go.utdallas.edu/academic-support-resources.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.