ITP 165 – Introduction to C++ Programming
Units: 2   location: online
2021 spring – M+W 5:00PM-6:20PM
section 32054

Instructor: Dr. Barrett Koster
Office: zoom
Office Hours: MW 2-3, TH 10-12, F12-1 or by appointment
Contact Info: bkoster@usc.edu

Teaching Assistant:
Tyler amanosme@usc.edu
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IT Help: Provided by Viterbi IT
Hours of Service: 8am–5pm M-F
Walk-in: DRB 205 (or not)
Contact Info: (213) 740-0517
Help Desk Ticketing System:
https://viterbi.usc.edu/servicedesk

Course Description

Introduction to programming using C++, including variables, operators, conditionals, loops, arrays, vectors, strings, functions, files, structs, pointers, dynamic allocation, and a start on classes.   Class time will be about half lecture, and half lab, where students practice programming the topic of the day. There will be about 10 almost-weekly homeworks (programs to write), and 2 exams.

Catalogue Description

Introduction to programming using C++, including variables, operators, conditionals, loops, arrays, vectors, strings, functions, files, structs, pointers, dynamic allocation, and an introduction to classes.

Learning Objectives

Students will be able to 1. design algorithms for simple calculations and data processing, and they will be able to 2. write, run, and debug C++ programs to do such tasks, including variables, conditionals, loops, i/o, functions and structs.

Note for online classes

This semester we are online, all remote. Students in compatible time zones are expected to join the zoom class meetings live with video and submit labs same-day. Students for whom live class is the middle of the night may watch class recordings, and submit labs offline. (If you have difficulty with any of this, let me know and we'll discuss it.) I am proud to be having this class around the world, unstopped by the virus. We will have TA and/or my office hours to accommodate. If there are other needs, let me know. Welcome.

Prerequisite(s): None
Co-Requisite(s): None
Concurrent Enrollment: None

Technological Proficiency and Hardware/Software Required
Students are expected to be able to perform the following tasks before the course begins:
- **handle text files, rename files, load and save files**
- **Submit files through Blackboard's submission page**

Media

Required: no required text

Blackboard. Homework programs will be assigned and submitted on Blackboard. Files for class and lecture slides will also be posted on Bb. This is the place to look when you want to know what's next in class. Attendance is done with Course Tools/Qwickly Attendance.

Piazza. We use this platform (rather than email) to communicate, about the homework, office hours, questions from class.

IDE. You need a computer for class and to do your homework. (The ITP department has loaners if you don't have your own.) We are going to use repl for actual programming, an online compiler (so all you need is a web browser). But if you want you can install an IDE on your machine. Visual Studio for C++ is good, as is xCode on Macs.

Nature of the course
Programming is learned by doing. A typical class will have 30-40 minutes of lecture and live programming, where we demo the day's feature together. Then you will program. Lab time is short, so you may have to complete them out of class (but these are exercise-level programs, should not take more than an hour and hopefully much less). There will be two tests and some 'notecard-quizzes', all on paper (?). There will be 10 (as currently planned) programs to write for homework. Most of your effort should go to these.

Grading Breakdown
You will be graded on the following

item	% of grade
participation with video	3
lab assignments	7
homework assignments	50
midter exam	20
final exam	20
total	100

Video sharing is required to get full attendance points. (Let me know if you have a problem with this and we can discuss it. Students in far away time zones, herein called 'zoners' are exempt from attendance).

Note that the percentages here may not match the unweighted totals on Blackboard.

Your programs should have comments, and they should compile. Non-compiling programs will have severe deductions. Exams will be done on paper; prepare for it.

Grading Scale

Course final grades will be determined using the following scale
A   93+
A-   90 - <93
B+   87 - <90
B   83 - <87
B-   80 - <83
C+   77 - <80
C   73 - <77
C-   70 - <73
D+   67 - <70
D   63 - <67
D-   60 - <63
F   <60

Assignment Submission Policy
Homework are to be submitted on Blackboard only. We cannot process it correctly as an email attachment, so don't. Each homework assignment will include instructions, a due date, and a link for electronic submission. Homework assignments must be submitted using this link. The link should allow for multiple submissions, but only the last one will be graded. Some systems do not allow submission of .cpp files, so you should be able to change your files to .txt and submit.

Lab assignments are assigned during the class session and are due soon (zoners get an extra day). You generally get the points if you make a reasonable attempt.

Each homework assignment must be completely individually. There are no group projects in this course.

It is your responsibility to submit your all homework assignments on or before the due date. Homework assignments turned in one day late will have 20% of the total points deducted from the graded score. Homework assignments turned in two days late will have 50% of the total points deducted from the graded score. After two days, submissions will not be accepted and you will receive a 0. Extensions may be granted for documented medical or other emergency.

> If you have a valid excuse for turning in an assignment late, send me email (Piazza private preferred) with documentation and also (if approved) submit to Blackboard a summary of your request as a 'first draft' of your homework. I will add a note on Bb with my decision and typically give a score of -1, which lets the TAs know this is pending. You can then submit your actual assignment later as a 2nd version for a real score. Note: the critical part is the submission to Bb -- I can't leave a note for the TA to accept your work late unless there is a submission there for me to put the note on.

You have a 1-day grace period you can use on any ONE assignment. If you turn in an assignment late and wish to use this, put a note on it for the TA. You only have one of these per semester.

Homework assignment questions should be posted to the online question forum Piazza. Try to avoid email to the professor. You are encouraged to attend the office hours for homework related questions.

Extensions for homework will only be granted for those students who have a medical/family emergency or illness resulting in an inability to complete the assignment on time. Students must provide official documentation.

Grading Timeline
Grading of homework will be done within one week of the deadline.

Additional Policies
Make-up policy for exams: To make up for a missed exam, the student must provide a satisfactory reason (as determined by the instructor) along with proper documentation.

Backup your work. A crashed computer is NOT a valid excuse for late work. ITP has loaner machines, but you need to save your work.

This course will make use of Piazza, an online discussion forum. Students will be invited to join the class discussion, but are not required to. Students may post questions, answer other student's questions, post anonymously, or post privately. Students are not allowed to post homework or lab code to Piazza publicly. Students may post homework or lab code privately on Piazza to instructors only. Any student caught posting homework or lab code on Piazza may be sent to SJACS.

If you think that something of your homework was not graded correctly, contact the person who graded it to see if you can clear it up. If you still don't like it, come see me (professor). Generally, this should happen within a week of getting a grade. Do not come to me at the end of the semester with some complaint that is months old.

The university allows students to join courses up to the end of week 3. You will need my permission to join the course, and I generally give it with the understanding that late-comers will catch up within a week and at the latest by the beginning of week 5.

Schedule

The schedule is posted in a separate document.

Statement on Academic Conduct and Support Systems

Academic Conduct:
Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, "Behavior Violating University Standards" https://policy.usc.edu/scampus-part-b/.   Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, http://policy.usc.edu/scientific-misconduct

In this class, all homework submissions may be compared with current, previous, and future students' submissions. If your work is found to be a copy of another person's work, or if you submit someone else's work as your own, the instructors will file a report with SJACS with a recommended penalty of an F in the course.

It is not okay to look through another student's code. It does not matter if this code is online or from a student you know, it is cheating. Do not share your code with anyone else in this or a future section of the course, as allowing someone else to copy your code carries the same penalty as you copying the code yourself.

Support Systems:
Student Counseling Services (SCS) - (213) 740-7711 – 24/7 on call
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.
https://engemannshc.usc.edu/counseling/

National Suicide Prevention Lifeline - 1-800-273-8255
Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. http://www.suicidepreventionlifeline.org

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 - 24/7 on call
Free and confidential therapy services, workshops, and training for situations related to gender-based harm. https://engemannshc.usc.edu/rsvp/

Sexual Assault Resource Center
For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: http://sarc.usc.edu/

Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086
Works with faculty, staff, visitors, applicants, and students around issues of protected class.
https://equity.usc.edu/

Bias Assessment Response and Support

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. https://studentaffairs.usc.edu/bias-assessment-response-support/

The Office of Disability Services and Programs
Provides certification for students with disabilities and helps arrange relevant accommodations. http://dsp.usc.edu

Student Support and Advocacy – (213) 821-4710
Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic https://studentaffairs.usc.edu/ssa/

Diversity at USC
Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. https://diversity.usc.edu/

USC Emergency Information
Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible, http://emergency.usc.edu

USC Department of Public Safety – 213-740-4321 (UPC) and 323-442-1000 (HSC) for 24-hour emergency assistance or to report a crime.
Provides overall safety to USC community. http://dps.usc.edu

Schedule for ITP-165 Intro C++

2021 spring

Links on this page only work on MY computer. - BEK

week	Mon	topics	Wed	topics (HW due Friday midnight)
1	Jan 18	MLK day, no class	Jan 20	1. topic: class policies , introduction lab: set up, repl or other
2	Jan 25	2. topic: variables lab: Madlib	Jan 27	3. topic: Conditionals lab: Premium
3	Feb 1	4. topic: Booleans lab: Craps	Feb 3	5. topic: While Loops live: sum x^2 , factoring lab avg numbers until 0 (sentinel, accumulator) due: H1 Pizza
4	Feb 8	6. topic: For Loops live: break int lab: lab stars, triangle, Factorial	Feb 10	7. topic: Arrays , random numbers live: reverse a sentence lab: GradeBook due: HW Horoscope
5	Feb 15	Presidents' Day, no class	Feb 17	8. topic: Functions 1 , live: and create some faces lab: draw hotel due: HW Virus or CarLoan
6	Feb 22	9. topic: Vectors live: stars with functions lab: search text for word(s)	Feb 24	10. topic: Files , getline live: read files, use functions lab: copy file, 5 word lines due : HW Cypher or Dogs
7	Mar 1	11. More Streams , files, arrays, vectors, and functions. live: command line parsing lab: parse	Mar3	12. Functions 2 live: sum of 5 dice lab: N dice, paper quiz due: HW05 Madlib from files.
8	Mar 8	13. topic: review for test	Mar 10	14. exam 1
9	Mar 15	15. topic: Function Misc , PBR vs PBV , and some attention to design lab: primes	Mar 17	16. topic: stringsArrays ... C-strings , live: Vowel Count lab: password checker due: HW06 Puzzle15
10	Mar 22	17. topic: Structs live: Point, distance(), midPoint() lab: Card struct	Mar 24	18. topic: more structs , use vectors of structs, ... lots of data live: recipies ? lab: dictionary due: HW Deal Or No Deal
11	Mar 29	19. topic: Pointers (+memory in general) live: exiting programs, check addresses, copies	Mar 31	20. topic: Dynamic Allocation live: mke dictionary dynamic (more on Gloss)

		lab: try finding addresses of things		lab17: dynamic allocation due: HW Quizzle
12	Apr 5	21. topic: Dynamic Arrays live: finish Gloss lab: bubble sort ?	Apr 7	wellness day, no class
13	Apr 12	22. Pointers on Pointers live and lab: stable marriage game due: HW Numbo	Apr 14	23. topic: Classes + into constructors here. lab: battleship prep
14	Apr 19	24. topic: Class Functions , lab: quick sort	Apr 21	25. topic: Class Functions 2 (access) ,
15	Apr 26	26. topic: Final Review , due: Player	Apr 28	27. Perspectives lab: Tournament live: evals, questions?
FINAL exam		Wednesday May 4:30pm-6:30pm PT far east students TBD		