ITP 165 Introduction to C++ Programming, 2 units

Viterbi logo

2025 spring, section: 32054
M+W 12-13 (12pm-1pm) room: OHE540
Instructor: Dr. Barrett Koster
Office: RRB 211 and zoom 501 267 3551
Office Hours: M+W 13-15, T+Th 14-15, or by appointment
Contact Info: bkoster ayat usc dawt edu

Learning Assistants:
Amanda Lu ?

Course Description. Introduction to programming using C++, including variables, operators, conditionals, loops, arrays, vectors, strings, functions, files, structs, 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 on paper.

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

Learning Objectives Students will be able to

- design algorithms for simple calculations and data processing, and
- write, run, and debug C++ programs to do such tasks, including use of variables, conditionals, loops, i/o, functions, structs and some classes.

Prerequisites: none
Co-requisites: none
Concurrent Enrollment: none

Technological Proficiency : students should be able to handle text files, rename files, save and load files, find and organize files on your computer. You also need to know how to get on BrightSpace and submit files to BrightSpace.

Media There is no required text (book) for this course.

BrightSpace (BS) Homework programs will be assigned and submitted on BrightSpace. Files for class and lecture slides will also be posted on BS. This is the place to look when you want to know what's next in class, what is due. Attendance is monitored with Course Tools/Qwickly Attendance.â€

Piazza . We use this platform (preferred over email) to communicate, about the homework, office hours, questions from class. https://piazza.com/usc/fall2024/itp165/info

IDE and computer . 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 replit.com for actual programming, an online

compiler (so all you need is a web browser). It is highly recommended that you also have an IDE on your machine.â€ Visual Studio for C++ is goodon PC, as is xCode on Macs. If you use just replit.com, use an unguessable account name and keep it secret.

Nature of the course Programming is learned by doing. A typical class will have 30 minutes of lecture and live programming, where we demo the day's feature together. Then you will program 'lab'. Labs should take you less than an hour. There will be two tests and possibly 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 homework assignments.

Grading (note that the unweighted numbers on Blackboard may not match)

what	% of grade
labs	20
homework	40
midterm exam (and quiz)	20
final exam	20
total	100

Grade scale

letter	range
A	93+
A-	90-92.99
B+	87-89.99
B	83-86.99
B-	80-82.99
C+	77-79.99
C	73-76.99
C-	70-72.99
D+	67-69.99
D	63-66.99
D-	60-62.99
F	0-59.99

Assignment Submission Policy Homeworks are to be submitted on BrightSpace only. The link should allow for multiple submissions, but only the last one will be graded. Some systems do not allow submission of .cpp files; if so, you can change your files to .txt and submit, as needed.

Lab assignments are assigned during the class session and are due soon. 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. Do not present someone else's work as your own or let someone else present your work as theirs. If I find matching programs or evidence of use of AI, your case gets sent to the Office of Academic Integrity. Typical sanction is an F on the program or an F in the course and an 'integrity' note on your transcript. You would be better off with a plain F. Please, I am begging you, do not turn in work that is not yours. If you do poorly on an assignment, take your hit with honor.

Lateness It is your responsibility to submit your all homework assignments on or before the due date. Homework grades will be deducted up to 10% per day late. 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 LA. Some times students do not feel good about their work and they do not turn it in. Do not do that -- TURN STUFF IN. If you improve your program, fine, turn it in again. If you are embarrassed that it is late or not complete, turn it in. It is almost always better than a 0. Write comments in it, say what you have tried. Tell me what is working and what you know is not working. And turn it in.

procedure for extension Extensions may be granted for documented medical or other emergency. If you have a valid excuse for turning in an assignment late, submit your explanation as through it were the assignment. I can 'grade' it with my answer, and then when you RE-submit with the actual assignment, the documentation is all right there.

Homework assignment questions should be posted to the online question forum Piazza. General questions or examples can be 'public'. Use private mode to post your code if you have specific questions. DO not post your homework code publicly. Personal stuff can be emailed to the professor, for example, accommodation letters that you do not want everyone to know. You are encouraged to attend the office hours for homework related questions. We give good help; use it.

Additional Policies If you have a documented reason for missing an exam or if you need special accommodations, please let me know ahead of time and we will make arrangements. **Back up your work.** A crashed computer is not a valid excuse for late work.

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 of arrival and at the latest by the beginning of week 5.

Schedule for ITP-165 Intro C++

2025 Spring

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

week	Mon	class	Wed	class	Fri	due
1	Jan	1. intro ,	Jan	2. output and variables	Jan 17	no homework per

	13	lab: Hello World	15	lab: MyNameIs		say
2	Jan 20	MLK Day no class	Jan 22	3. input and operators lab: madlib	Jan 24	HW01: Donut
3	Jan 27	4. Conditionals lab: Premium	Jan 29	5. Booleans lab: Scratch Off	Jan 31	HW02: Horoscope
4	Feb 3	6. Do While Loops lab: average	Feb 5	7. While Loops , lab: Guess	Feb 7	HW03: High Low
5	Feb 10	8. For Loops , lab: Stars	Feb 12	9. Loop Review , simulation loops , lab: Times Tables	Feb 14	HW04: Mortgage
6	Feb 17	President's Day no class	Feb 19	10. getline , Arrays and Strings lab: CString	Feb 21	HW05: Encryption
7	Feb 24	11. Random lab: Pick a Card	Feb 26	12. Vector , lab: 3 in a row ,	Feb 28	
8	Mar 3	13. Test 1 prep	Mar 5	14. midterm exam	Mar 7	HW: Stories
9	Mar 10	15. Functions 1 lab: Hotel	Mar 12	16. Functions 2 lab: primes	Mar 14	HW07: Chuck a Luck
Spring Break no class						
10	Mar 24	17. Pass by Reference lab: shuffle	Mar 26	18. Stream Output lab: Hotel File	Mar 28	HW08: Pancakes
11	Mar 31	19. Stream Input lab: 5 words at a time	Apr 2	20. enum, 2d arrays lab: Tic Tac Toe	Apr 4	HW09: Quizzle
12	Apr 7	21. structs lab: Point	Apr 9	22. Class 1 leb: Point Class	Apr 11	HW10: Gloss
13	Apr 14	23. Multiple Files lab: BattleShip prep	Apr 16	24. Class 2 lab: Dice	Apr 18	
14	Apr 21	25. Maps 1 , lab: start Letter Count	Apr 23	26. Maps 2 lab: Letter Count	Apr 25	
15	Apr 28	27. final review (last semester's test) lab: Battleship help **HW: Battleship due**	Apr 30	28. Battleship tournament, evaluations	May 2	
					May 9 11am-1pm	final exam

Statement on University Academic and Support Systems

Students and Disability Accommodations: USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible

for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Student Financial Aid and Satisfactory Academic Progress: To be eligible for certain kinds of financial aid, students are required to maintain Satisfactory Academic Progress (SAP) toward their degree objectives. Visit the Financial Aid Office webpage for undergraduate- and graduate-level SAP eligibility requirements and the appeals process.

Support Systems: Counseling and Mental Health - (213) 740-9355 â€" 24/7 on call Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

988 Suicide and Crisis Lifeline - 988 for both calls and text messages â€" 24/7 on call The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline consists of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL) â€" 24/7 on call Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX) - (213) 740-5086 Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-2500 Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS) - (213) 740-0776 OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention - (213) 740-0411 Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity, Equity and Inclusion - (213) 740-2101 Information on events, programs and training, the Provostâ€™s Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 â€“ 24/7 on call Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-1200 â€“ 24/7 on call Non-emergency assistance or information.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC) A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

Occupational Therapy Faculty Practice - (323) 442-2850 orÂ otfp@med.usc.edu â€‹ConfidentialÂ Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.Â