



School of Engineering
*Information
Technology Program*

ITP 165 – Introduction to C++ Programming

Units: 2

Fall 2018 – Monday/Wednesday – 3:30pm-4:50pm

Instructor: Barrett Koster

Office: OHE 530G

Office Hours: MTWH 11-1

Contact Info: bkoster@usc.edu

Teaching Assistant: Callie rosanky@usc.edu

Teaching Assistant: Baiyu baiyuhua@usc.edu

Teaching Assistant: Manish dhankani@usc.edu

Office Hours: (when/where) TBD

IT Help: Provided by Viterbi IT

Hours of Service: 8am–5pm M-F

Walk-in: DRB 205

Contact Info: (213) 740-0517

Email: engrhelp@usc.edu

Course Description

Fundamentals of C++ syntax and semantics, including function prototypes, overloading, memory management, abstract data types, object creation, pointers to class members, and I/O streams.

Learning Objectives

This course will teach students problem solving skills using the C++ programming language. Programming fundamentals including variables, control statements, loops, and arrays, pointers, functions and object-oriented programming.

Prerequisite(s): None

Co-Requisite(s): None

Concurrent Enrollment: None

Course Notes

All lecture slides and course content including homework and lab assignments will be posted to the course Blackboard page. Midterm and Final Examination are to be done by hand on paper.

Technological Proficiency and Hardware/Software Required

Students are expected to be able to perform the following tasks before the course begins:

- **Create a ZIP file that contains one or more files**
- **UnZIP a file that contains one or more files**
- **Submit files through Blackboard's submission page**
- **Install VisualStudio or XCode software**

Required Readings and Supplementary Materials

To supplement course material a good introductory C++ reference is recommended like the tutorials available at LearnCpp.com, CPlusPlus.com, and CProgramming.com.

Grading Breakdown

You will be graded on the following

ITEM	% of Grade	
Lab Assignments	20	
Homework Assignments	40	
Midterm Exam	20	
Final Exam	20	
TOTAL	100	

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 and lab assignments are to be submitted on Blackboard only. Any other form of submission to instructor, teaching assistant, or grader will not be counted. Only the last submission on Blackboard will be graded. Students will not be able to get points for any previous submissions regardless of whether the previous submissions were correct or on time.

Lab assignments are assigned during the class session and are due at the end of the class session. Students will still be able to submit after the deadline but any submission marked "Late" by Blackboard will automatically receive a score of 0. Lab assignments are graded as PASS/FAIL. There will be no partial credit awarded on any lab. A lab is deemed as "PASSED" if the student has:

1. Completed the task assigned using the specified constructs and functions denoted in the assignment sheet
2. Followed all style guidelines
3. Includes header and comments throughout

Any submission lacking the aforementioned attributes is automatically deemed "FAILED". Reason for failure will always be given to student as justification. There may be other reasons than those listed above for failure of a lab assignment at the instructor's discretion.

There are no makeup labs. There is no way to make up a missed practical, however a practical grade can be dropped provided either prior instructor approval or a documented emergency.

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

Each homework assignment will include instructions, a due date, and a link for electronic submission. Homework assignments must be submitted using this link.

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.

All homework assignments must be digitally submitted through Blackboard except when otherwise specified by the course staff. Do not email homework assignments to the instructor or lab assistant.

Homework assignment questions should be posted to the online question forum. Class time is for lecture and lab assignments only. Do not send any email to the instructor regarding homework assignments or ask specific homework questions during the lecture sessions. 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 labs will be done by the end of the week on which the lab was assigned.

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. Make-up exams are generally only offered in emergency situations.

Before logging off any ITP-owned computer (laptops, desktops in OHE 540, OHE 542, KAP 107, KAP 160, KAP 162, KAP 267) students must ensure that they have saved any work to either a USB drive or a service such as Dropbox. Any work saved to the computer will be erased after restarting the computer. ITP is not responsible for any work lost.

ITP offers Open Lab use for all students enrolled in ITP classes. These open labs are held beginning the second week of classes through the last week of classes.

Hours are listed at: <http://itp.usc.edu/labs/>.

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 will be punished through SJACS.

Course Schedule: A Weekly Breakdown

	Topics/Daily Activities	Labs	Deliverable/ Due Dates
Week 1	Introduction Variables	NONE LP1	Homework 1 Assigned
Week 2	Booleans and Conditionals More conditionals	LP2 LP3	Homework 2 Assigned Homework 1 Due
Week 3	<u>UNIVERSITY HOLIDAY</u> open lab day, no lecture		Homework 3 Assigned Homework 2 Due
Week 4	While Loops 3.1 Loops and Arrays 4.1 More Arrays and C-Style Strings 4.2	LP5.3 LP4 LP5	Homework 4 Assigned Homework 3 Due
Week 5	Calling Functions 5.1 Creating Functions 5.2	LP6 LP7	Homework 5 Assigned Homework 4 Due
Week 6	PBR vs. PBV 6.1 Debugging	LP8 LP9	Homework 5 Due Homework 6 Assigned
Week 7	Midterm Streams	NONE NONE	
Week 8	Midterm Review More Streams	NONE LP10	Homework 6 Due Homework 7 Assigned
Week 9	Structures Memory and variables	LP11 LP12	Homework 7 Due Homework 8 Assigned
Week 10	Pointers Dynamic Memory and Arrays	LP13 LP14	Homework 8 Due Homework 9 Assigned
Week 11	Classes Header and Implementation files	LP15 LP16	Homework 9 Due Homework 10 Assigned
Week 12	Class Functions Dynamic Memory in Classes	LP17 LP18	Homework 10 Due Homework 11 Assigned
Week 13	Vectors Has-A vs. Is-A	LP19 LP20	Homework 11 Due Homework 12 Assigned
Week 14	Virtual Functions <u>THANKSGIVING</u>	LP21	
Week 15	Pure Virtual Functions/Abstract Classes Where to go from here	LP22	Homework 12 Due
FINAL	Monday 2018 Dec 10 2-4PM		

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 will 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>