COP3363: Introduction to Programming in C++ for Majors

Fall 2024

Instructor:	Shibo Li	**Time:**	4:50pm - 6:05pm
Email:	shiboli@cs.fsu.edu	**Place:**	MCH 201

1 Course Information

Course Pages:

- information/schedules/lecture notes: https://cop3363fall2024.github.io/

- quizs/homeworks/grading: `Canvas`

Mode of Delivery

Lectures will meet in person at the specified time and location. Students should attend the lecture for the section they are enrolled in. This class is in-person only.

Class Time and Location

- Mondays and Wednesdays: 4:50pm - 6:05pm

- MCH 201

Review and Discussion Sessions

Review and discussion sessions are the 50 miniutes weekly sessions scheduled at different times based on your course section. There are four sections in total of this course. Review sessions will meet in person at specified time and location. Students are ***required*** to attend the review session they are enrolled in.

Section Number	Day and Time	Location	Lead TA
Sec. 0002	Wednesdays 1:20pm - 2:10pm	MCH 202	TBA
Sec. 0006	Wednesdays 3:05pm - 3:55pm	MCH 202	TBA
Sec. 0007	Wednesdays 6:35pm - 7:25pm	MCH 202	TBA
Sec. 0008	Wednesdays 12:00pm - 12:50pm	MCH 202	TBA

Instuctor

- Shibo Li

- office: 206A LOV

- office hours: `Wednesdays 3:30-4:30pm`

Teaching Assistants:

TAs help instruction and grade homework assignments. They also supervise the review and discussion sessions. TAs will provide students with more immediate feedback during the Review Sessions along with ideas for course corrections.

- TBA

- TBA

Grading Assistants:

GAs handle the majority of the grading for the course. They are senior students who have completed the 3-course programming series and are facilitators of learning.

- TBA

- TBA

Learning Assistants:

Learning Assistants support the students through the course. They are exemplars of students who have been through the course recently. They will serve as mentors and moral support along with being instructional support. LAs will provide students with more immediate feedback during the help sessions along with ideas for course corrections. **However, they will not have any grading duties.**

- TBA

- TBA

Prerequisites:

- All students taking COP 3363 are required to have previously taken and passed (with a C- or higherfinal grade) MAC 1140 or MAC 2311 or MAC 2233.

- If you have not completed this prerequisite requirement, the CS department will most likely dropyou from this course in the first week of classes.

- If you do not have the prerequisite you should drop yourself from this course and then adjust yourclass schedule appropriately with the help of your academic advisor.

First Day Attendance

This attendance will be taken online on the course Canvas site, by each student completing the first day attendance quiz on Canvas, during the first day of the lecture meeting. Any student registered as of the first day of the first week of this class, and **not present according to taking this quiz, will be dropped from the class as per the FSU First Day Attendance policy.** This quiz does not count towards your final course grade, it only records first day attendance for each student completing it on time.

Note: all drops are each student's responsibility. If you want to drop, and to be sure you are dropped, you must process and verify the drop yourself using the FSU course drop/add system.The teaching staff cannot guarantee drops will occur due to non-attendance as there are too many normally occurring uncertainties and time delays in the relevant computer and software systems.

2 Communication and Email Policy

Please ***do not*** send us Canvas messages regarding any issues you have.

Grading Questions:

If you have any questions about your grading, please directly email your TA/GA who has graded your assignments.

Requests for Exceptional Cases

If you request for extensions, excused absenses, or any specific concerns or escalaitons, please email the instructor directly via shiboli@cs.fsu.edu.

Discussion and Feedback

You can initiate an discussion in `Canvas`, however, do not post any solutions of the assignments and only post topics that related to this course. If you want to send anonymous feedback about the course, you can submit a feedback form through the link in the course webpage `https://cop3363fall2024.github.io/`

Response Time

The instructor and TAs will usually response the emails with in 24hrs during the weekdays. However, due to the heavy load of grading, please allow us for 48hrs during the weekdays.

Check Your Email Regularly

If the instructor or TA needs to contact you individually for any reason, we will send emails to your FSU email. **Make sure you check you FSU email frequently.**

3   Course Materials

Textbook

A Foundation to Programming with C++ - UNIX Edition (TH Bundle) by Sharanya JayaramanISBN 9781778774355. This is the only required text for the course. It is available bundled through TopHat along with the rest of the course material and activities. The course pack was authored specifically for FSU students to align with the learning objectives of the course and the needs of students in the restof their CS classes.

Software Required

- You must have a Computer Science system account (cs.fsu.edu) for this course. Students will be provided with directions for creating a CS account in the first week of classes.

- Macs, Chromebooks, and Linux machines come with a terminal to connect to the CS programming servers. Windows Machines need an SSH client. We recommend Tectia. Students will be provided with directions on Downloading Tectia and using the SSH terminal in the first week of classes.

- Students would require a Top Hat account to access the textbook. It is recommended that the students have a device they use to access Top Hat during class, preferably a laptop or desktop.

4   Attendance and Class Participation

Attendance and participation are expected and REQUIRED to do well in the course. Attendance translates to staying current with the course. Attendance and class participation, measured through the in-class exercises, will count towards the In-Class Exercise component of the course grade.

5 Course Objective and Schedule

Course Objective

This course is intended for majors in computer science or related areas and focuses on the fundamental concepts of computer programming using the C++ language. This course may beused as the programming pre-requisite for COP 3330. The course uses the UNIX operatingsystem and the g++ compiler for all programming tasks. A UNIX "primer" will be provided onthe course Canvas site for reading, learning and reference.

By the end of the semester, a student who has completed this course with a passing grade should be able to:

- Demonstrate a basic understanding of fundamental computer science concepts, including software and hardware.
- Solve computing problems using a top-down approach in a well-structured design in the procedural paradigm, and utilize some basic object-based programming techniques.
- Design, implement, test and debug a C++ program to solve a given problem.
- Demonstrate knowledge and use of control structures including sequence, selection,iteration and functions.
- Make use of data types and structures in C++ including integer and floating point types,arrays (one-dimensional, two-dimensional, strings) and structs; arrays of structs andstructs containing arrays. Have an introductory-level understanding of the C++ class andbe able to utilize the standard IO and string classes and their member functions.
- Utilize fundamental algorithms studied to perform tasks such as finding the max and minin a data set, counting, summing, tracking a previous value, searching and sorting, processing until EOF, etc.
- Consider, compare and evaluate code segments or algorithms for relative efficiency in abasic fashion.
- Evaluate and interpret digital data and/or their implications
- Demonstrate the ability to use digital technology effectively
- Demonstrate the knowledge to use digital technology correctly, safely and/or ethically
- Time permitting, be able to understand the basics of recursion.
- Time permitting, be able to understand the basics of setting up and using linked lists.

Regarding UNIX, students should be able to:

- Create and use an FSU CS user account and use it to work on CS UNIX servers
- Use essential UNIX commands to work with directories and files
- Create and edit files using a standard UNIX text editor (e.g. pico/nano or vi/vim)
- Transfer files to and from their laptop to the FSU CS UNIX servers (e.g. Tectia or ftp)
- Complete programming tasks with the g++ compiler to compile, run, debug and test programs, using gdb for debugging

Tentative Course Schedule

This is a tentative schedule for the course. Please see the weekly calendar on course website https://cop3363fall2024.github.io/for details and updates.

- Week 1 - Introduction to Unix - basic commands and text editing. Introduction to C++ - basic components of a Computer program, output statements
- Week 2 - Unix basics, C++ - Input statements, data types, variables, operators.

- Week 3 - More Unix Commands. C++ - Operators, selection statements

- Week 4 - Selection statements, repetitive statements

- Week 5 - Repetitive statements, problem decomposition

- Week 6 - Functions

- Week 7 - Unix - Redirection and Pipes. C++ - Advanced functions

- Week 8 - Arrays, Arrays with functions

- Week 9 - Simple Unix Utilities. Strings and C++ string objects

- Week 10 - strings with functions, introduction to pointers

- Week 11 - Unix Processes. C++ - pointers and dynamic memory

- Week 12 - Dynamic arrays

- Week 13 - Unix Shell Scripting. C++ - Structures - composite data types

- Week 14 - Structures continued

- Week 15 - File operations

6   Grading Policy

Programming Assignments

Programming assignments will be given periodically throughout the semester. They will be posted on Canvas. The assignments will be turned in through linprog using a UNIX script.

- Assignments are NOT OPTIONAL. Students need to turn in all the homework assignments to attempt to get full credit for the homework assignment component of the grade.

- Students are expected to turn in all assignments ON TIME!

- Students are not permitted to "re-do" assignments after the deadline.

- Assignment deadlines and Late Policy (see below) are STRICTLY enforced.

- STUDENTS are responsible for ensuring that their program file was submitted correctly. This means making sure their file was submitted without error, ON TIME, and also submitting the correct `.cpp` file.

- STUDENTS are responsible for ensuring they do not accidentally delete or overwrite their files.

Backup Copies of Your Programming Assignments

Always make multiple backup copies (on a flash drive, in the university's file space, in your private cloud space, private repository on Github ...) of your work!!! This is a course requirement, professional convention in CS and IT, and good common sense. The teaching staff may under certain circumstances have to ask you to produce your backup file copies. Note that many business IT departments maintaining large databases make it a habit to maintain 8 or more backup copies, on multiple types of media and in different physical locations. Get in that habit and start now, withat least 3 copies that you maintain for yourself.

Compiling, Debugging, Testing and Programmig Conventions

- Programs that do not compile are very tedious to grade, and they show a lack of testing, which is a significant part of programming. If the program does not compile, **a immediate 50% off will occur.** So please make sure your code does compile before submitting to `Canvas`.

- Runtime errors (such as segmetation fault) also occur **a immediate 40% off will occur.**

- Also, the programs must compile without warnings - warnings are not the same as errors(programs can still "run" even with warnings) but they are NOT acceptable and it is not good practice to submit programs with warnings. 3 points will be deducted for EACH WARNING present in the student's submitted code.

- The assignments will have sample runs that give the student an idea of what the output of the program should look like. However, these samples only show one or two possible runs of the program. It is the student's responsibility to test their programs thoroughly for a variety ofpossible inputs.

- Testing is also a good way to catch logical bugs in the program that would give you the wrong answer. Compilers cannot help out with these errors.

- Points are set aside for following programming conventions which will be introduced throughout the course. A program that produces the correct answers without following programming conventions would not get 100% credit.

Regrade Requests

Requests for regrading should be *within a week* of grades being posted on Canvas by sending an email to the TA who graded the assignment. Only the file already submitted on Canvas. Students are not allowed to submit a newer version of their programs.

Tentative Points Distribution

The grades are based on the following components:

- Homeworks (6) - 60% (10% each)

- Midterm Exam - 15%

- Final Exam - 20%

- Attendance - 5%

Assignments **must be electronically submitted through Canvas by midnight of the due date.** Instructions about submission will be given in each assignment. **Hand written versions or scans will *not* be accepted.**

Convert the percentage to letter grade, **the final score will not be curved**

Late Submission

All assignments should be submitted by the deadline. If the deadline is missed, the late submissions will have 10% penalty. In every subsequent 24 hours, the late submissions will loose another 10% credicts. For example, a 10 points assignment will have 2 points penalty, if it is submitted 30 hours late. However, **if the assignment is not turned in within 48 hours after the deadline, 0 grade will be given.**

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, 30)
F	<60

7   Vital Policies

University Attendance Policy

Excused absences include documented illness, deaths in the family and other documented crises, call toactive military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

Academic Honor Policy

The Florida State University Academic Honor Policy outlines the University's expectations for the integrityof students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to "...be honest and truthfuland...[to] strive for personal and institutional integrity at Florida State University." (Florida State UniversityAcademic Honor Policy, found at https://fda.fsu.edu/academic-resources/academic-integrity-and-grievances/academic-honor-policy)

Additional Notes on Academic Integrity

The basic course rule is that you may not give or receive substantial assistance for any work youare submitting as your own. In all cases in which we have reason to believe that cheating has occurred, we will submit relevant materials to appropriate university authorities for evaluation. If a violation of university academic standards has occurred, a zero score will be assigned on the assignment or exam in question and other sanctions will be determined as well.

Students are expected to uphold the Academic Honor Policy published in the Florida StateUniversity Bulletin and the Student Handbook. The Academic Honor System of Florida StateUniversity is based on the premise that each student has the responsibility (1) to uphold thehighest standards of academic integrity in the student's own work, (2) to refuse to tolerate violations of academic integrity in the university community and (3) to foster a high sense ofintegrity and social responsibility on the part of the university community.

Keep this in mind: If you are having trouble finishing an assignment, it is far better to do your own work and receive a low score than to go through an academic integrity investigation and suffer any penalties which may be involved, which can be very severe, and may have a serious impact for many years into your future.

What is cheating on a programming project? (a few examples)

- having someone else write your program, in whole or in part
- copying a program someone else wrote, in whole or in part
- collaborating with someone else to the extent that the programs are identifiably very similar, in whole or in part

In all of the above, it is not relevant whether the "someone else" is a friend, a "tutor," a complete stranger, a textbook other than the required book specified for this course (if you use it, cite it!),a web site or any other media.

In this course, all programming projects are to be done <u>ON YOUR OWN</u> unless otherwise stated in writing by the instructor on the assignment write-up itself.

What is not cheating? (a few examples)

- talking to someone in general about topics and concepts involved
- getting help with the specifics of C++ language syntax and semantics
- utilizing information given to you by the teaching staff of the course, for example copying a paragraph describing the program from the assignment write-up we provide
- copying parts of code from the required textbook(s) used this semester in this course; you would cite as a reference the textbook and page(s) used in your program comments

Generally speaking, talking about assignment work is ok; *sharing, using, looking at or reading ANY form of printed, written, electronic or hand-drawn material is typically a violation* of academic integrity policies. Obtaining material from the internet and submitting it as your ownwork is considered a violation. Note: for your own security, never post your own code on the internet, anywhere. In addition don't leave your program files or printouts on lab computers or inany public location, including trash cans!

The course teaching staff will regularly examine all class assignments turned in using software plagiarism detection software systems and methods.

**** Here is the list of things that you should be aware: ****

- Students are expected to do their own work on any classwork, homework assignment, or test submitted for a grade. There are no graded group assignments in this course.

- It is NOT appropriate to work on assignments with other students or to give or receive solutions toor from anyone before an assignment is due and handed in (by all parties).

- It is NOT appropriate to verbally discuss solutions and solution strategies to assignments with other students(even during TA office hours).

- It is NOT appropriate to share any amount of assignment/quiz/exam solutions with your classmates.

- Using or submitting existing scripts or solutions from the internet is a violation of the Academic Honor Policy.

- Submitting programs/reports/assignments done, wholly or in part, by a third party, including hiredand contracted is a violation of the Academic Honor Policy. **This includes solutions or partialsolutions found on "tutoring" websites like chegg.com, CourseHero or similar**

- DO NOT POST YOUR SOLUTIONS ONLINE (online compilers, text sites, blogs, help sites, etc...).No matter what the intent was in posting your solutions, this is automatically in violation of theAcademic Honor Policy and the appropriate actions will be taken. DO NOT USE publicly visibleonline compilers, chat rooms, or post any amount of your code on the web.

- DO NOT DISCUSS ASSIGNMENTS OR SOLUTIONS WITH YOUR CLASSMATES ON GROUP-MEOR SIMILAR. Not only is any information found there unverified and possibly incorrect, it would also be a violation of the FSU Honor Policy. The instructor or the TA's will only ever contact you through Canvas (for course announcements) or through your FSU email (individually).

- **DO NOT UPLOAD COURSE MATERIALS (INCLUDING HOMEWORK QUESTION-S/PROBLEM STATEMENTS) TO PAY-FOR SOLUTION WEBSITES LIKECHEGG OR QUID-PRO-QUO WEBSITES LIKE COURSE HERO.** This is a violationof the Honor Policy. These materials are the intellectual property of the instructor and this also violates general Copyright rules.

- The only approved sources of "help" on assignments are the instructor, TA Help Sessions, and ACETu-toring at FSU. Working with other students, former students, friends or family members, hiring"tutors" (from Chegg, WiseAnt, Bartelby, unsanctioned Facebook Groups, Discord Servers, redditor similar) could potentially result in violations of the Academic Honor Policy.

- Discussing solutions and techniques on assignments with other students after the assignment has been graded and handed back is okay, and encouraged.

- Students are expected to turn in their work with their name on it, and they are representing thatwork as their own. If a student's submission matches that of another student, it is considered aviolation of the Academic Honor Code.

- If a student has previously taken the course, they are NOT permitted to submit their old work forany assignment in the current semester. They must do their work from scratch. This is included inthe FSU honor policy. See the link above.

- If it is found that a student has violated the academic honor policy the student is not permitted todrop or withdraw from the course, and must complete the course with the sanctions accessed via thepolicy. This is a UNIVERSITY policy.

- Examples found in the course textbook or in the course notes may be used in programs, **as long asthe source is cited.** This is appropriate, as some assignments may be based on program examplesfound in the book or contain other code that is provided to you in the assignment specification.

- **A first violation of the honor code will result, at minimum (but not limited to), apenalty of a 0 grade on the assignment or test involved, along with a reduced lettergrade in the course.** This will be done by filing the Student-Instructor Resolution Form of theFSU Honor Policy.

- **Any second violation of the honor code will result in an automatic F in the course, andpossible proceedings before the Honor Court.** This will be done with a Hearing before theHonor Code Committee.

Free Tutoring at FSU

On-campus tutoring and writing assistance is available for many courses at Florida State University. Formore information, visit the Academic Center for Excellence (ACE) Tutoring Services' comprehensive list of on-campus tutoring options - see **http://ace.fsu.edu/tutoring** or contact **tutor@fsu.edu**. High quality tutoring is available by appointment and on a walk-in basis. These services are offered by tutors trained to encourage the highest level of individual academic success while upholding personal academic integrity.

Academic Success

Your academic success is a top priority for Florida State University. University resources to help you succeed include tutoring centers, computer labs, counseling and health services, and services for designated groups, such as veterans and students with disabilities. The following information is not exhaustive, soplease check with your advisor or the Department of Student Support and Transitions to learn more.

Americans With Disabilities Act

Florida State University (FSU) values diversity and inclusion; we are committed to a climate of mutual re-spect and full participation. Our goal is to create learning environments that are usable, equitable, inclusive, and welcoming. FSU is committed to providing reasonable accommodations for all persons with disabilities in a manner that is consistent with academic standards of thecourse while empowering the student to meet integral requirements of the course.

Students with disabilities needing academic accommodation should:

1. register with and provide documentation to the Office of Accessibility Services; and

2. request a letter from the Office of Accessibility Services to be sent to the instructor indicatingthe need for accommodation and what type; and,

3. meet (in person, via phone, email, skype, zoom, etc...) with each instructor to whom a letter of accommodation was sent to review approved accommodations.

Please note that instructors are not allowed to provide classroom accommodations to a student until appro-priate verification from the Office of Accessibility Services has been provided.

This syllabus and other class materials are available in alternative format upon request.

For the latest version of this statement and more information about services available to FSU students with disabilities, contact the:

```
Office of Accessibility Services
874 Traditions Way
108 Student Services Building
Florida State University
Tallahassee, FL 32306-4167
(850) 644-9566 (voice)
(850) 644-8504 (TDD)
oas@fsu.edu
https://dsst.fsu.edu/oas
```

Instructor's note on course exams: any requests for specific special exam arrangements due to aregistered disability must be brought to the course instructor at least two weeks prior to the examdate, or they will not be considered. In addition students must follow all rules and procedures setforth by the FSU OAS.

FSU Student Conduct Code

Students are expected to follow the FSU Student Conduct Code in all interactions and situationsat the university. See https://dos.fsu.edu/srr/conduct-codes/student-conduct-codes.

Confidential Campus Resources

Various centers and programs are available to assist students with navigating stressors thatmight impact academic success. These include the following:

- Victim Advocate Program

        ```
        University Center A
        Room 4100
        (850)644-7161 (Available 24/7/365)
        Office Hours:  M-F 8 am-5 pm
        https://dsst.fsu.edu/vap
        ```

- Counseling and Psychological Services

        ```
        Askew Student Life Center, 2nd Floor
        942 Learning Way
        (850)644-8255
        Office Hours:  M-F 8 am-5 pm
        https://counseling.fsu.edu/
        ```

- Counseling and Psychological Services

        ```
        Health and Wellness Center
        (850)644-6230
        Office Hours:  M-F 8 am-5 pm
        https://uhs.fsu.edu/
        ```

Syllabus Change Policy

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with appropriate notice.