



COP 2274 | C++ Programming for Engineers

Class Number: 27882

Fall 2026

Instructor Information

Course Details

Catalog Description: Introductory course for those who have little experience in programming and have been looking to obtain a hands-on learning experience to the C++ programming language. Developing problem solving and computational thinking skills in an engineering field is encouraged in this course and emphasized with a reasonably high degree of mathematics.

Pre- and Co-Requisites: Coreq: MAC 2311.

Credit Hours: 3

Course Fees: \$0.00

Required Materials

CODIO - 1 SEMESTER SUBSCRIPTION

ISBN: 9781733187251

Authors: CODIO

Publisher: CODIO

Edition: 1ST EDITION

Recommended Materials

ABSOLUTE C++

ISBN: 9780133970784

Authors: WALTER SAVITCH

Publisher: PEARSON

Edition: 6TH

Absolute C++, 6E (Kortext eBook)

Publisher: Pearson

All Access: This material is available on All Access

A Note on Materials

Additional course materials to be provided by the instructor.

Course Goals and Objectives

- Outcome 1: An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. Coverage: High
- Outcome 2: An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. Coverage: High
- Outcome 3: An ability to communicate effectively with a range of audiences. Coverage: Low
- Outcome 4: An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts. Coverage: Medium
- Outcome 5: An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- Outcome 6: An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- Outcome 7: An ability to acquire and apply new knowledge as needed, using appropriate learning strategies. Coverage: High

Expectations and Student Learning Outcomes

Remembering & Understanding

- Students who successfully complete this course will be able to identify the appropriate C++ data types (integers, floats, arrays, strings, pointers) for a given engineering problem.
- Students who successfully complete this course will be able to recall and apply C++ syntax rules to write syntactically correct programs.

Applying & Analyzing

- Students who successfully complete this course will be able to solve engineering mathematics problems by writing C++ programs using functions, loops, and conditionals.
- Students who successfully complete this course will be able to differentiate between procedural and object-oriented programming approaches and organize code using classes.

- Students who successfully complete this course will be able to analyze program errors and use debugging techniques to correct faulty C++ code.

Evaluating & Creating

- Students who successfully complete this course will be able to produce complete C++ programs that solve multi-step engineering problems, as demonstrated through a course project.
- Students who successfully complete this course will be able to test C++ code against defined requirements and revise it until all test cases pass.
- Students who successfully complete this course will be able to compose C++ programs that integrate standard libraries to analyze and visualize engineering data.

Methods of Evaluation

The course includes the following assignments and grading components. Please note that these may change, and any updates will be announced in class and on Canvas.

- Lessons and Practices: ~13 total (15%)
- Labs: ~13 total (15%)
- Quizzes: ~11 total (10%)
- Exams: ~2 total (40%)
- Final Project: ~1 total (20%)
- Total: 100%

Grading Scale

Letter grade and percentage

Letter Grade	Percentage Value
A	93.4 - 100%
A -	90.0 - 93.3%
B +	86.7 - 89.9%
B	83.4 - 86.6%
B -	80.0 - 83.3%
C +	76.7 - 79.9%
C	73.4 - 76.6%
C -	70.0 - 73.3%
D +	66.7 - 69.9%
D	63.4 - 66.6%
D -	60.0 - 63.3%
E	59% and below

Course Schedule

The tentative course schedule is as follows. Please note that this schedule may change, and any updates will be announced in class and on Canvas.

- August 20, 2026 ~ August 26, 2026 — Module 1: Introduction to the course
- August 27, 2026 ~ September 2, 2026 — Module 2: C++ Basics
- September 3, 2026 ~ September 9, 2026 — Module 3: Flow of Control
- September 10, 2026 ~ September 16, 2026 — Module 4: Function Basics
- September 17, 2026 ~ September 23, 2026 — Module 5: Parameters and Overloading
- September 24, 2026 ~ September 30, 2026 — Module 6: Arrays
- **October 6, 2026 — Exam 1 (Online)**
- October 8, 2026 ~ October 14, 2026 — Module 7: Classes
- October 15, 2026 ~ October 21, 2026 — Module 8: Constructors
- October 22, 2026 ~ October 28, 2026 — Module 9: Operator Overloading
- October 29, 2026 ~ November 4, 2026 — Module 10: Strings
- November 5, 2026 ~ November 11, 2026 — Module 11: Pointers and Dynamic Arrays
- **November 17, 2026 — Exam 2 (Online)**
- November 23, 2026 ~ November 27, 2026 — NO CLASS: Thanksgiving Break
- November 30, 2026 ~ December 2, 2026 — Final Project

University Policies and Resources

Information about grading policies, support for students with disabilities, course evaluations, the Honor Code, and other course policies and campus resources can be found on the [Syllabus Policies page](#).

Attendance Policy

Excused and Unexcused Absences

Students may only participate in classes if they are registered officially or approved to audit with evidence of having paid audit fees. The Office of the University Registrar provides official class rolls to instructors.

Students are responsible for satisfying all academic objectives as defined by the instructor. Absences count from the first-class meeting.

Acceptable reasons for absence from or failure to engage in class include illness; Title IX-related situations; serious accidents or emergencies affecting the student, their roommates, or their family; special curricular requirements (e.g., judging trips, field trips, professional conferences); military obligation; severe weather conditions that prevent class participation; religious holidays; participation in official university activities (e.g., music performances, athletic competition, debate); and court-imposed legal obligations (e.g., jury duty or subpoena). Other reasons (e.g., a job interview or club activity) may be deemed acceptable if approved by the instructor.

For all planned absences, a student in a situation that allows an excused absence from a class, or any required class activity must inform the instructor as early as possible prior to the class. For all unplanned absences because of accidents or emergency situations, students should contact their instructor as soon as conditions permit.

Students shall be permitted a reasonable amount of time to make up the material or activities covered during absence from class or inability to engage in class activities because of the reasons outlined above.

If a student does not participate in at least one of the first two class meetings of a course or laboratory in which they are registered, and they have not contacted the department to indicate their intent, the student can be dropped from the course. Students must not assume that they will be dropped, however. The department will notify students if they have been dropped from a course or laboratory.

The university recognizes the right of the instructor to make attendance mandatory and require documentation for absences (except for religious holidays), missed work, or inability to fully engage in class. After due warning, an instructor can prohibit further attendance and subsequently assign a failing grade for excessive absences.

Religious Holidays Guidelines

At the University of Florida, students and faculty work together to allow students the opportunity to observe the holy days of their faith. A student should inform the faculty member of the religious observances of their faith that will conflict with class attendance, with tests or examinations, or with other class activities prior to the class or occurrence of that test or activity. The faculty member is then obligated to accommodate that particular student's religious observances. Because students represent a myriad of cultures and many faiths, the University of Florida is not able to assure that scheduled academic activities do not conflict with the holy days of all religious groups. Accordingly, individual students should make their need for an excused absence known in advance of the scheduled activities.

The Florida Board of Education and state law govern university policy regarding observance of religious holidays.

Guidelines

- Students, upon prior notification to their instructors, shall be excused from class or other scheduled academic activity to observe a religious holy day of their faith.
- Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence.
- Students shall not be penalized due to absence from class or other scheduled academic activity because of religious observances.

If a faculty member is informed of or is aware that a significant number of students are likely to be absent from class because of a religious observance, the faculty member should not schedule a major exam or other academic event at that time.

A student who is to be excused from class for a religious observance is not required to provide a second party certification of the reason for the absence. Furthermore, a student who believes that they have been unreasonably denied an education benefit due to religious beliefs or practices may seek redress through the student grievance procedure.

Absence due to Illness

A student who is absent from class or any required class-related activity because of illness should contact their instructor, if feasible, as early as possible prior to the missed class or activity.

Students shall be permitted a reasonable amount of time to make up the material or activities covered during an excused absence.

Students should contact their college by the deadline to drop a course for medical reasons. Students can petition the Dean of Students Office to drop a course for medical reasons. The university's policy regarding medical excuse from classes is maintained by the Student Health Care Center.

Twelve-Day Rule

Students who participate in university-sponsored athletic or scholarly activities are permitted to be absent 12 scholastic days per semester without penalty. A scholastic day is any day on which regular class work is scheduled as defined in the approved university calendar. [More Info](#)

The student or student's advisor must notify the instructor as early as possible prior to the anticipated absence to allow ample time for accommodations. Instructors must be flexible and not penalize students when re-scheduling during-term and final exams, class assignments, and other required activities and must follow the UF Attendance Policy herein and UF Examination Policies. As noted in the UF Examination Policies, during-term exams should be re-scheduled no later than before the end of the semester, while final exams no later than 90 days after the originally scheduled exam time. However, instructors are encouraged to re-schedule final and during-term exams, assignments, and other activities as soon as possible after the last day of the absence and must not penalize the student in any way. [More Info](#)

A group's schedule that requires absence of more than 12 scholastic days should be adjusted so that no student is absent from campus more than 12 scholastic days. Students who previously have been warned in writing by their instructor about the impact of absences on their individual class performance should not incur additional absences, even if they have not been absent 12 scholastic days. The student is responsible to maintain satisfactory academic performance and attendance.

Course Policies and Resources

Strategy for Success

Start early! Most things in life take time to learn. TIME. There is no shortcut. Students have to put in the time. In this class, that means spending time to:

- learn the concepts
- read and understand an assignment
- write the code
- debug the code (this will almost always take longer than you think)
- verify results, and submit
- and of course, ask any questions along the way

Grade questions

If student believes there is an error in their grade or in an exam question, they **must** notify the instructor **within one (1) week**. This policy helps ensure that grading concerns are addressed promptly rather than at the end of the semester after the course material has already been completed.

Communication

Canvas is the official communication tool for the course. If Canvas is unavailable, students may use the instructor's UF email instead.

Honorlock Requirement

This course uses Honorlock for all quizzes and exams. You must fully show your face and keep HonorLock active during these assessments. Failure to comply will result in an honor code violation, with consequences detailed below.

A practice quiz will be available at the start of the semester to help you verify your settings before attempting the quizzes. It is your responsibility to ensure a stable connection and that your camera and microphone are functioning correctly. Do not access, type or make changes in Codio unless Honorlock is active.

Note: Honorlock is a privilege. If technical issues arise or suspicious behavior is observed with Honorlock, the instructional team may, at any point during the semester, require you to switch to a different proctoring method, typically an in person, recorded session with a peer mentor or instructor or in person.

Attempting quizzes and exams means that you are accepting the following:

I understand that I must follow the following instructions:

- (1) You may not use any electronic device besides your computer to take the quiz. Attempting to use other devices during the quiz will result in an Honor Code violation.(2) Any attempt to access other webpages, communication tools, resources, or software other than Codio or Canvas will result in an Honor Code violation.(3) For all questions, you are responsible for making sure your code passes the test cases. Your overall score for the quiz is the score that is achieved by the autograder.
- (4) You must click "Check It!" at least once for each question, in order to attempt to receive credit for a particular question.
- (5) If your Honorlock is not active during any portion of your quiz, your quiz will be invalid. This means that your grade will be 0.
- (6) You must submit your Canvas quiz after, and only after, you have finished the Codio quiz and marked it as complete.

You can access the quiz through the 'HERE' link above; which will direct you to the Quiz. If it does not, click on the CANVAS link above, and from there go to Home > Modules > Module X Quiz (Do not access without Honorlock)

AI Policy

Students are encouraged to use AI tools as learning support, not as a substitute for their own work. AI tools should be used to help explain concepts and debug code after students have attempted the problem themselves. Students should not use AI to generate full solutions or complete code. If students use AI-generated examples, they are expected to understand, explain, and modify them independently.

We will not actively monitor AI use on assignments. However, students are fully responsible for demonstrating their own skills and knowledge on exams. Overreliance on AI during the semester may negatively affect exam performance and overall course success.

Support is always available during class and office hours. Students are strongly encouraged to seek human support alongside thoughtful AI use to develop genuine understanding.

Late and Make Up Work Policy

Deadlines in this course are final, and submissions after the deadline will **not** be accepted. Ultimately, it is the students' responsibility to ensure that assignments are completed on time and that all test cases pass according to the specifications. Students are given ample time to complete each assignment. If a student waits until the last day to begin an assignment and encounters problems, it is **not** the instructor's responsibility.

If students experience special circumstances supported by documentation, such as medical issues, family emergencies, or other significant hardships, they may contact the instructor **through the Canvas Inbox** to request an extension. This policy does **not** apply to exams.