Syllabus

San Diego City College
CISC 192 C/C++ Programming
Prof. Richard Pelletier

Course Description

This course is an introduction to computer programming using the C++ programming language. Standard I/O classes are used. Structured and object oriented programming techniques are presented and used to design and implement solutions to a variety of computer programming problems.

The C programming language is one of the most popular programming languages, ever. The syntax for Java and other programming languages are based on the C programming language. We will be using standard ANSI C++ which is compatible with just about every computer platform to make console applications.

- **Semester**: Fall 2021
- **Class No**: 73620
- **Units**: 4.0 (6 hours lecture/6 hours lab per week)
- **Meets**: online at sdccd.instructure.com
  for 8 weeks from October 18 to December 18, 2021
- **Instructor**: Prof. Richard Pelletier -
  Computer & Information Science
- **Office**: BT-210 D
- **Telephone**: (619) 388-3113 (office/voice),
  (619) 354-5648 (cell phone/voice/text)
- **Email**: rpelleti@sdccd.edu

Prerequisites & Advisories

This course is not an introduction to computers. This is an introduction to computer programming. No computer programming experience is needed, but you are expected to know how to use a computer and the internet.

Students must have completed English 047a or 048 and English 049 or higher with a grade of C or better or have an Assessment Skill Level W5/R5.

If you are new to computer programming, do not take more than one computer programming class at the same time. The similarities and differences will make it difficult for most students. It is like trying to learn multiple languages at the same time.

Student Learning Outcomes

Create functions that carry out tasks using standard C++ programming.

Upon successful completion of this course, the student will be able to...

1. Create simple to intermediate level console applications using the standard I/O routines in ANSI C++.
2. Understand and be able to apply the various data types and structures in ANSI C++.
3. Understand and use basic object oriented programming techniques.
4. Understand and use procedural abstraction and top-down design.
5. Create programs that store and access data to and from files.

Course Content

1. **Introduction to Computers and Programming** - computer hardware and software, programming languages, input/processing/output, procedural vs. object-oriented programming.
2. **Expressions and Interactivity** - data types, arithmetic expressions, named constants, variables, console I/O.
3. **Making Decisions** - if statements, switch statements, conditional expressions.
4. **Looping** - pre-test, post-test, while loop, for loop, counters, accumulators, sentinals, file processing loops, data validation loops.
5. **Functions** - functions, prototypes, arguments, parameters, value returning functions, pass by value parameters, pass by reference parameters, local and global variables, static variables, default arguments, function overloading, stubs and drivers.
6. **Arrays** - single dimensional arrays, array bounds, range-based for-loops, array processing, parallel arrays, two-dimensional arrays, multi-dimensional arrays, STL vectors, STL array.
7. **Sorting and Searching Arrays** - linear search, binary search, bubble sort, selection sort, qsort() and STL sort().
8. **Pointers** - pointer variables, addresses, pointer parameters, dynamic memory allocation, smart pointers, memory leaks.
9. **Strings** - characters vs. strings, c-strings vs. string class, character case conversions, string-to-numeric conversions.

10. **Structured Data** - abstract data types, structure variables, array of structures, structure arguments and parameters, pointers to structures, unions, enumerated data types.
11. **File I/O** - file output formatting, file stream objects, error testing, reading & writing files.

Required Course Materials

For this class you will need the following:

- Textbook
- Software
- Internet

Textbook

We will be using **Starting Out with C++**, as an eText in **Revel**. We will be using Revel for our textbook, exercises, assignments, and quizes. On the first day of class, I will show you how you can get Revel free for 14 days. After that, if you want to continue in this class, you will have to buy an access code from the City College Bookstore (www.bookstore.sdccd.edu/city) or through the publisher, Pearson.

If you get your access code from the college bookstore, note that they cannot send it by email and you will have to wait for a physical card to come in the mail before you can use it.

It is not possible to buy a used version of Revel, nor is is possible to share one copy--you must have your own access to Revel.

Software

You will not need to buy any software for this class. We will be using the following software:

> **Microsoft Visual Studio Community 2019** available from Microsoft Visual Studio Downloads.

This software is free and runs on Windows computers. I recommend Windows 10 for best results. You may use any C++ development environment as long as it has standard C++ compiler and can create console applications using cin/out. My lecture notes will be written for use with Microsoft Visual Studio Community on a Windows PC.

Internet

This should go without saying, but when you enroll in an online class, you will need reliable access to the internet. Slow, unreliable internet will affect your grade because most of the assignments are online. If your internet is slow or unreliable, you may have to redo your exercise, quiz, or assignment.

Class Format

CISC 192 is a 4 unit course that normally meets for 3 hours lecture and 3 hours lab per week for 16 weeks, but our class is in an 8 week session, so we must cover twice as many hours per week. We will use Canvas to take this class online. You will need access to the internet to use Canvas.

Each week we will be reading at least two chapters in the textbook, do a number of exercises, quizzes, and assignments.

> I will post the assignments on **Monday** and everything will be due by 11:45 PM on **Saturday**.

I do not assign anything on Sunday, but you may read ahead and prepare for Monday's lesson on that day if you like.

Communications

Each week I will post a new lesson and a message in Canvas Inbox. From time-to-time it may be necessary for me to let you know of changes or updates to the class materials, so check your Canvas Inbox messages every time you log in to Canvas.

Student-teacher confidentiality is important to me. I will only discuss your grades with you in Canvas Inbox. Because I have no way of identifying you through your email, if you contact me by email, I will ask you to contact me through Canvas Inbox.

Attendance

Attendance will be recorded by completing assignments and tests. According to district policy, you must not be absent for more than 12 percent of the total class hours which comes to around one week. If you stop doing assignments or tests for 2 weeks or more, I will have to drop you from class for non-attendance.

For federal financial aid, including VA benefits, it is important that you continue to make academic progress. To show that you are making academic progress, you must do the

assignments and tests. If you do not make academic progress for 22 days, you will be dropped from the class.

If you plan to drop this class, do so officially. It is your responsibility to drop yourself from classes before the deadlines. If you stop attending class without officially dropping yourself from the class, you may find an F grade on your student record which may affect your financial aid, graduation, or transfer plans.

Grading

Everything in this class will fall into one of the following categories:

- **Exercises** (Revel) - 10 percent
- **Programming Assignments** (PCs) - 30 percent
- **Chapter Quizzes** - 30 percent
- **Midterm and Final Exam & Project** - 30 percent

Each item will be scored by calculating a percentage of the points earned over the possible points that could be earned for that item. The average of the scores for each category will be weighted as a percentage of your final grade to get a number from 0 to 100...

Score	Letter Grade
100 to 90	A
89 to 80	B
79 to 70	C
69 to 60	D
59 to 0	F

I will not grade every programming assignment, but if you skip a programming assignment, you will get a zero for that assignment. If you have questions about any of the programming assignments, please feel free to contact me about it.

> Canvas only records the scores for each item that you complete. It does not calculate your grade in this class--I have to do that at the end of the semester.

If you have any questions about your scores or grade, contact me through Canvas Inbox.

Important Notes

Responsibility to Add, Drop, or Withdraw
It is your responsibility to add, drop, or withdraw from classes before the deadlines stated in the class schedule. Petitions to add, drop, or withdraw after the deadline will not be approved without proof of circumstances beyond the student's control which made the student unable to meet the deadline. Lack of money to pay fees is not considered an extenuating circumstance. Students anticipating difficulty in paying fees before the add deadline should check with the Financial Aid Office about sources of funds or other alternatives for which they may be eligible.

Classroom Behavior & Student Code of Conduct
Students are expected to respect and obey standards of student conduct while in class or on the campus. The Student Code of Conduct, Disciplinary Procedure, and Student Due Process (policy 3100 and procedure 3100.2) can be found in the college catalog, student handbook, and the Office of the Dean of Student Affairs. Charges of misconduct and disciplinary sanctions may be imposed upon students who violate these standards of conduct or provisions of college regulations.

Academic Integrity
This class will be conducted in accordance with the college Student Code of Conduct and basic standards of academic honesty. Cheating, plagiarism, or other forms of academic dishonesty are not acceptable and will not be tolerated. Violations of standards of academic honesty will be reported to the college disciplinary office for appropriate action.

Accommodation of Disability
Students with disabilities who may need academic accommodations should discuss options with me sometime during the first two weeks of class.

I have made every effort to make this course accessible to all students, including students with disabilities. If you encounter a problem accessing anything in this course, please contact me immediately. Students with disabilities should email me and contact the college's Disabled Students Programs and Services (DSPS) office.

Changes to the Syllabus

From time to time this syllabus may need to be changed. I will notify the class of changes when they occur and update the online version of this syllabus. The revision date can be found on the last page of this syllabus.

Calendar

The dates may change. I will notify the class of changes when they occur.

Week	Date	Topic
1	Oct 18	Introduction to the Class Chapter 1 - Intro to Programming Chapter 2 - Introduction to C++
2	Oct 25	Chapter 3 - Expressions & Interactivity Chapter 4 - Making Decisions
3	Nov 1	Chapter 5 - Loops & Files Chapter 6 - Functions
4	Nov 8	Midterm Exam & Project
5	Nov 15	Chapter 7 - Arrays Chapter 8 - Searching & Sorting Arrays
--	Nov 22	Thanksgiving Week Break
6	Nov 29	Chapter 9 - Pointers Chapter 10 - Strings and the String Class
7	Dec 6	Chapter 13 - Introduction to Classes Starting the Final Exam & Project
8	Dec 13	Final Exam & Project

Important Dates

Oct 26	Last day to add/drop this class.
Nov 19	Last day to withdraw from this class.
Dec 18	Last Day of Class

Revised: September 6, 2021