CIS -029-01Z **Advanced C++ Programming - Winter 2021** CRN 34926

Instructor: Joe Bentley **Email:** bentleyjoe@fhda.edu

Class Schedule: This course will be taught entirely online using Zoom
Lecture: TTh 1:30 – 3:20 pm **Office Hours:** TTh 12:45 – 1:15 pm

Course Description: Advanced topics in C++ including: namespace, string and stringstream classes, cast operators, multiple inheritance, exception handling, compilation concepts, libraries, templates, the Standard Template Library and programming style.

Requisites: Prerequisite: (CIS 22B or CIS 22BH) or CIS 27 or equivalent. Advisory: MATH 212 or equivalent.

Student Learning Outcomes:
• Create C++ programs using standard classes, advanced operators, multiple inheritance, and exception handling.
• Create and use libraries with the C++ language.
• Create and use templates, including the Standard Template Library, in C++ programs.

Textbook: None Required. Required: Access to course notes at http://voyager.deanza.edu/~bentley/cis29/CIS29.pdf

Assignments: There will be **seven** assignments in the class. Each assignment is due at the **beginning** of the class session on the specified date. Late assignments will be accepted for 24 hours after the due date and will be assessed 5 points. **Assignments must be completed individually**. **Assignments with compile errors or that *crash* will not be accepted**. Six assignments will be used for your grade. Your assignment with the lowest grade will be discarded.

Group Project: A group project is required. Each group will consist of 5-7 students. Projects are due in the 11th week of the quarter. Each group will have a leader who will coordinate the work within the group. Each group must hold at least 4 group meetings and the leader will submit meeting reports.

Attendance: You are responsible for all material covered in each class meeting**. Assignments are due on the dates specified, even if you are absent**. **Tests may only be made up if prior arrangements are made**.

Tests: There will be a midterm and a final. **If you are late for the test, you will not be permitted extra time.**

Help from the Instructor: It is recommended that you take advantage of the online time, office hours, and email. The instructor can answer questions, debug programs, clarify assignments, and help with the group project.

Academic Integrity: Students are required to follow the Academic Integrity guidelines (https://www.deanza.edu/policies/academic_integrity.html). Any student who participates in copying an assignment or test or uses work performed by someone else will receive a grade of 0 on that assignment or test.

Disability Support: Students who have been found to be eligible for accommodations by Disability Support Services (DSS), please follow up to ensure that your accommodations have been authorized for the current quarter. If you are not registered with DSS and need accommodations, please go to the DSS office in the Registration & Student Services Building (RSS) - Room 141 for information on eligibility and how to receive support services. You can also go online to https://www.deanza.edu/dsps/ for additional information.

Grading Policy:

Programming Assignments	120 points	20 each
Midterm	60 points	
Final	100 points	
Group Project	120 points	
Total	400 points	

Points	**Percent**	**Grade**
360-400	90-100%	A
320-359	80-89%	B
280-319	70-79%	C
240-279	60-69%	D
Below 240	Below 60%	F
+ or – added if within 2% of grade boundary		

You may be dropped from the class if you miss the midterm or turn in less than half of the required assignments. If you decide to drop the class, you must withdraw by the end of the 8th week.

CIS 29 **Class Schedule – Winter 2021 – Joe Bentley**

Week	Tuesday	Thursday
1	Introduction Review	Review Conversion operators, explicit constructors Overloading new and delete C++ 11/14/17/20 Features
2	Typedef, using, typeid C++ casts **Assignment 1 due**	Binary File I/O
3	Building and Using Libraries Static libraries	DLLs, Shared Libraries SFML library ***Group Meeting Report 1 due***
4	string class stringstream classes **Assignment 2 due**	I/O Manipulators Bitwise operators & bit manipulation
5	Inheritance, Polymorphism Dynamic cast Multiple Inheritance, Common ancestors **Assignment 3 due**	Exception Handling ***Group Meeting Report 2 due***
6	Namespaces **Assignment 4 due**	**MIDTERM**
7	Function Templates Class Templates	Hash tables ***Group Meeting Report 3 due***
8	STL array, vector, list, forward_list **Assignment 5 due**	STL stack, queue, deque, priority_queue
9	STL set, map, multi_set, multi_map	STL Function objects ***Group Meeting Report 4 due***
10	Bitset **Assignment 6 due** ***Group Project Presentations***	STL Algorithms ***Group Project Presentations***
11	Lambda expressions, functions ***Group Project Presentations***	Smart Pointers ***Group Project Presentations***
12	**FINAL** **Assignment 7 due**	

Class Web Page: http://voyager.deanza.edu/~bentley/cis29