CIS 22A Section 05Z Fall 2024
BEGINNING PROGRAMMING METHODOLOGIES IN C++

INSTRUCTOR: Doug Case
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FINAL: **Synchronous Zoom**
Monday, December 9, 2024, from 1:45 PM – 3:45 PM

LECTURES: Monday / Wednesday 1:30 PM – 3:20 PM on Zoom. Lectures will not be recorded.

OFFICE HOURS: Thursday 3:30 pm – 4:30 pm (with online with Zoom link in Canvas)
Hours subject to change due to other meetings that others schedule. Also by appointment (please email me to make an appointment).

Please know that you may email me your questions. Monday through Friday I will generally reply within 24 hours; after 5:00 pm on Friday and over the weekend the guaranteed response time is 48 hours.

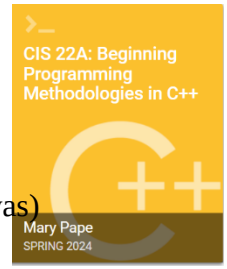
Prerequisites:
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 114 or equivalent. CIS 22A was formerly Computer Information Systems 71A. (Students may receive credit for either Computer Information Systems (22A and 22B) or 27, but not both.).

Course Description:
An introduction to computer programming. Its primary objective is to teach problem solving using the C++ programming language. Emphasis will be placed on structured procedural programming with an introduction to object-oriented programming. Designed primarily for computer science and related transfer majors.

Student Learning Outcome: *Design solutions for introductory level problems using appropriate design methodology incorporating elementary programming constructs.*
Student Learning Outcome: *Create algorithms, code, document, debug, and test introductory level C++ programs*.
Student Learning Outcome: *Read, analyze and explain introductory level C++ programs.*

Course Outline: Please refer to course calendar below. But note that Canvas is the source of truth.

Attendance:
- In order not to be dropped as a "no-show" you must complete the "Week 1 – Student Information Survey Quiz" in Canvas Week 1 by Friday September 27.
- You are expected to actively work along with each of the lessons.
- You are expected to login into Canvas at least once per day.
- You must complete quizzes, midterms, and final on calendared day.
- You will **not** be automatically dropped once you have completed the introductory survey assignment. Thus, be sure to withdraw officially to avoid 'F' grade on your transcript.



Required Text:
ZyBooks C++ This is for **free** to you this quarter.
(Do not go to the zyBooks website and create a new account)
1. Click on your zyBooks link in your learning management system (Canvas)
2. Subscribe

Recommended Text & Resources:

- For those of you who like to have a text to read and follow along with. This is totally ***optional*** but section numbers will be provided. Solutions for Starting Out with C++: From Control Structures through Objects, 9th Edition by Gaddis IBN eText: ISBN: MTC:28782070 ISBN-13: 978-0134498379 ISBN-10: 0134498372 **This is the same text as often used by instructors for CIS 22B** N.B. Earlier editions may suffice **but page numbers will be off.**
- ***Optional*** CodeLab Tutorial See Welcome module on Canvas for how to register and for access key. This is **free**!

TCAB-31552-GQLE-60

Assistance:

- **Integrated Development Environments (IDEs) - alias compilers**
  - *Dev C++ or Visual Studio are the easiest to get started with for PC user*
  - Mac users generally use Xcode. This optional video might be helpful for getting started with Xcode: https://www.youtube.com/watch?v=-H_EyIqBNDA

  You may use the IDE of your choice. Tutors can help you with installing this starting the week of September 30
  This will not work for too long, but can be helpful to get started: https://www.onlinegdb.com/online_c++_compiler
- Course materials are available on https://deanza.instructure.com/login .
- Videos are available online on how to install your compiler and the steps necessary to write your programs.
- E-mail messages and questions to CaseDoug@fhda.edu (usually quicker than through Canvas). For security purposes, unsolicited attachments will not be downloaded. Emails received Monday through Friday will be answered within 24 hours. Phone conferences may also be offered as needed but student needs to provide phone number and accept blocked caller ID.
- CIS has its own teaching assistants program as well as one-on-one tutoring: Go to the following URL
  https://www.deanza.edu/cis/tutoringOnline.html

Grading, and approximate weighting:

Programming Lab Assignments	35%
Online Tutorial Work (ZyBooks Assignments)	10%
Quizzes / class online hands-on participation if any	15%
Midterms (2)	20% (10% each)
Final	20%

Course letter grades will be assigned:

A+	A	A-	B+	B	B-	C+	C	D	F
99+%	92-98%	90-91%	88-89%	82-87%	80-81%	78-79%	70-78%	60-69%	<60%

Updated: September 11, 2024

Where percentages are rounded to the nearest whole number.

Programming Lab assignments will be graded on the following criteria:

1) correctness
2) structure
3) style, clarity, and documentation
4) theme issues

Late Lab 0 – 6 assignments will be accepted for one week after the due date with a 5-point penalty. After the one-week limit the assignment will receive no credit. Lab 7 and the "Hands On" Online Activities will not be accepted late. The midterms and final must be taken on calendared dates. Quizzes and zyBooks assignments must be done on time or will receive a zero.

All assignments/tests submitted through Canvas LMS only. Assignments submitted on time will receive feedback within one week. Assignments submitted +48 or more hours early sometimes receive feedback in less time, usually within 24 hours, and there sometimes will be an opportunity for you correct the code if there are errors or omissions.

Extra credit opportunities:
Some labs will have bonus points added when solution is creative, documentation is extra informative, lab is submitted early, and/or code is exceptionally easy to read.
Labs that are submitted 48 or more hours early will get an extra 2 points of extra credit.

Academic Honesty
All programming assignments are expected to be your ***own original*** code. **Never give a soft copy or a hard copy of any lab assignment to another classmate or post it on the internet where it is accessible to other students. Any duplicate assignments submitted will receive zero points without regard to who originated and who copied or where the code was copied from (such as the internet).**

Disability Accommodations:
De Anza College views disability as an important aspect of diversity, and is committed to providing equitable access to learning opportunities for all students.

Disability Support Services (DSS) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations If you have, or think you have, a disability in any area such as, mental health, attention, learning, chronic health, sensory, or physical, please contact DSS to arrange a confidential discussion regarding equitable access and reasonable accommodations.

If you are registered with DSS and have accommodations set by a DSS counselor, please be sure that your instructor has received your accommodation letter from Clockwork early in the quarter to review how the accommodations will be applied in the course. Students who need accommodated test proctoring must meet appointment booking deadlines at the Testing Center. a) Midterm exam be booked at least five (5) business days in advance of the instructor approved exam date/time. b) Final exams must be scheduled seven (7) business days/weekdays in advance of the instructor approved exam date/time. Failure to meet appointment booking deadlines will result in the forfeit of testing accommodations and you will be required to take your exam with the class.

You may reach DSS remotely:

- Email: dss@deanza.edu

- Phone: 408.864.8753

Motto:
"You learn to play tennis by playing tennis. You learn to program by writing programs."

Important Dates

Friday October 4, 2024?: Last day to add? Confirm this date on De Anza Academic Calendar web site or Registrar.
Saturday, October 5, 2024?: Check on your myPortal for the last day to drop with a refund? Confirm this date on De Anza Academic Calendar web site or Registrar.
Friday, November 15, 2024: Last day to drop with a 'W'.

Holidays

November 11 – Veteran's Day - no classes, offices closed

Tentative Dates below subject to change and will be reflected in Canvas. Canvas is the source of truth.

CIS22A **SPRING 2024**

September

Topic – Numbers in () refer to sections in Gaddis textbook	**Mon**	**Tues**	**Wed**	**Thurs**	**Fri**	**Sat**	**Sun**
Parts of a Computer; Programming Languages; *First Program (1.1 -> 1.7, 2.1->2.2, 3.1)	**23**	**24**	**25**	**26**	**27 Student Survey**	**28**	**29 Zy Module1**
*Binary Number System; *Design Tools; Fundamentals of 'C++' (2.3 -> 2.16)	**30**	**1**	**2 Lab 0**	**3**	**4**	**5 Lab 1A**	**6 Zy Module2**

October

Topic	**Mon**	**Tues**	**Wed**	**Thurs**	**Fri**	**Sat**	**Sun**
Expressions & their evaluation (3.2 -> 3.6); More about I/O (3.7-3.8) Math "Built-In" Functions (3.9)	**7**	**8**	**9**	**10 Lab 1B**	**11 Quiz 1**	**12**	**13 Zy Module3**
Functions with no parameters (6.1->6.3) Selection (4.1 -> 4.9)	**14**	**15**	**16**	**17 Lab 2**	**18 Quiz 2**	**19**	**20 Zy Module4**
Selection (4.10 -> 4.14) Functions with parameters (6.4)	**21**	**22**	**23 Mid-term 1 (Ch 1-3)**	**24 Lab 3**	**25**	**26**	**27 Zy Module5**
Introduction to loops (while loops) (5.1 -> 5.4) Looping (5.7, 5.8)	**28**	**29**	**30**	**31**	**1 Quiz 3**	**2 Lab 4**	**3**

November

do while & *for loops* (5.5 -> 5.6, 5.9) Nested loops (5.10) Loops with Files (5.11)	**4**	**5 Lab 4A**	**6**	**7**	**8 Lab 4B**	9	10 **Zy Module6**
Inter-Function Communication (6.5-> 6.13)	11	**12**	**13 Quiz 4**	**14 Quiz 4B**	**15 Quiz 4C**	**16 Lab 5**	**17**
Overloading Functions (6.14) One-dimensional arrays (7.1 -> 7.2 in ed 8, 8.1 – 8.2 in edition 9)	**18**	**19**	**20 Midterm 2 (Ch 4-6)**	**21**	**22**	**23 Lab 5B**	**24 Zy Module7**
One-dimensional arrays (7.3 -> 7.7 in edition 8, chapter 8.3-8.7 in edition 9)	**25**	**26**	**27**	**28**	**29**	**30 Lab 6**	**1 Zy Module8**

December

Linear Search (8.1 in ed 8, 9.1 in edition 9) Selection Sort (8.3 in ed 8, 9.3 in edition 9)	**2**	**3**	4	**5 Zy Module9**	**6 Quiz 5**	**7 Lab 7**	**8**
Week of Finals	**9 Final (1:45 pm-3:45 pm)**	**10**	**11**	**12**	**13**		

All assignments must be turned in by 4:00 pm. on Thursday, June 27th– *No Exceptions*

I. ZyBooks Assignments

Ref	Chapter: (names are mine in some cases)	Points	Due Date
Zy Module1	1.1 Concept of Programming 1.2 First Program 1.3 Comments and Presentation of Code on Page 1.4 Debug: Fixing Syntax & Logic Errors 1.5 Computer's View of a Program 1.6 Computer Tour 1.7 Optional	15	Sept 29 (midnight, means 11:59 PM)
Zy Module2	1.8 Problem Solving 1.9 Optional 1.10 Why Whitespace Matters 1.11 C++ Example: Salary Calculation 1.12 Working with Strings 2.1 '=' Means 'Assign'! 2.2 Declaration 2.3 Identifiers & Keywords 2.4 Expressions with operators '*', '/', '=', '-'	15	Oct 6 (midnight)
Zy Module3	2.5 Expressions with compound Assignment Operators 2.6 C++ Example: Health Data 2.7 Floating Point 2.8 Scientific/Exponential Notation 2.9 *const* 2.10 Built-in functions 2.11 Integer Arithmetic & Modulus % 2.12 Type conversions 2.13 Binary 2.14 Characters 2.15 Strings 2.16 Integer overflow 2.17 Numeric data types 2.18 Unsigned 2.19 C++ example: Salary calculation with variables 2.20 C++ example: Married-couple names with variables	15	Oct 13 (midnight)
Zy Module4	5.1 User-defined function basics 5.2 Simple print function 5.3 Reasons for defining functions 5.8 How Functions work 5.9 Scope of Variable & Function Prototype a.k.a. Function Definitions 3.1 If-else branches 3.2 If-else 3.3 More if-else	15	Oct 20 (midnight)
Zy Module5	3.4 Equality and relational operators	15	Oct 27

	3.5 Detecting ranges (general) 3.6 Detecting ranges with gaps 3.7 Detecting multiple conditions with gaps 3.9 Example: Toll calculation 3.10 Order of evaluation 3.11 Switch statements 5.10 Functions: Common Errors 5.11 Pass by reference		(midnight)
Zy Module6	4.1 Loops (general) 4.2 While loops 4.3 More while examples 4.4 For loops 4.5 More for loop examples 4.6 Nested loops 4.7 Do-while loops	15	Nov 10 (midnight)
Zy Module7	9.1 Output and input streams 9.2 File input 9.3 C++ example: Parsing and validating input files 9.4 File output	15	Nov 24 (midnight)
Zy Module8	6.1 Array/vector concept (general) 6.2 Arrays 6.3 Array/vector iteration drill 6.4 Swapping two variables (General) 6.5 Iterating through arrays 6.6 Multiple arrays 6.7 Loop-modifying or copying/comparing arrays 6.8 Functions with array parameters 6.9 Engineering examples 6.10 Functions with array parameters: Common errors 6.11 Engineering examples using functions	15	Dec 1 (midnight)
Zy Module9	5.13 Function name overloading	11	Dec 5 (midnight)

II. CodeLab Instructions

How/Where to register:

1. Go to www.tcgo1.com **OR** www.tcgo2.com
2. https://codelab.turingscraft.com/courses
3.
4. #2 is better
5. Click **"Register for CodeLab"**

Later, during enrollment, use Section Access Code: TCAB-31552-GQLE-60

III. Suggested Assignments from Gaddis text - optional
These assignments will be "collected" through quizzes, midterms, and final.

#1	Quiz 1 Midterm 1 Final	Chapter 1: p. 24: 1, 3, 7, 9-29, 31, 33-35 Binary Worksheet Chapter 2: p. 77: 4, 8, 9-21, 27 (page 75 for 8th ed.)
#2	Quiz 2 Midterm 1 Final	Chapter 3: p. 138: 4, 5, 26, 34, 36 (page 136 for 8th ed.)
#3	Quiz 3 Midterm 2 Final	Chapter 4: p. 217: 31-41 (page 215 for 8th ed.)
#4	Quiz 4 Midterm 2 Final	Chapter 5: p. 293: 36, 37, 39, 40, 41, 42, 43, 44 (page 289 for 8th ed.)
	Midterm 2 Final	Chapter 6: p. 369: 2, 33, 34, 37 (page 363 for 8th ed.)
#6	Final	Chapter 7: p. 449: 2, 4, 41,42, 43 (page 443 for 8th ed) Chapter 8: p. 498: 2, 3 (page 490 for 8th ed) (ch 9 in 9th edition)

N. B. The final is comprehensive

IV Tentative Programming Lab Problems

Lab 0	The BASICS (Student Information)
Lab 1A	Class Information
Lab 1B	Cupertino Restaurant Bill
Lab 2	Functions With No Parameters
Lab 3	Functions With Parameters
Lab 4	If else processing
Lab 4A	Watch videos about scope and respond
Lab 4B	setw, setprecision
Lab 5	Ethiopian Calendar
Lab 5B	Reference Parameters
Lab 6	Array of Student Grades
Lab 7	Array and search