CIS 22A   **Winter, 2015**
BEGINNING PROGRAMMING METHODOLOGIES IN C++

INSTRUCTOR: Mary Pape
OFFICE: F51i
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OFFICE HOURS: Monday 4:40 p.m.-5:30 p.m. (F51i)
                     Tuesday 1:40 p.m.-2:30 p.m. (ATC 203 – CIS Lab)
                     Wednesday 3:00 p.m. – 3:50 p.m.(F51i)
                     Thursday 10:10 a.m. – 11:00 a.m. (F51i)

CLASS HOURS: TTh 11:30 a.m. – 1:20 p.m. (AT 205)
                     Online Thursday 1:20 p.m. – 2:35 p.m.
==**What is this online time about?** Whether during this exact time or a time of your choice, students are expected to be online reviewing materials, completing tutorial assignments, completing online participation activities, and preparing for the next topic of the course prior to the weekly lecture and lab meetings.==

FINAL: Exam on Tuesday, March 24, at 11:30 a.m.-1:30 p.m. (AT 205)

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 (1): *Design solutions for introductory level problems using appropriate design methodology incorporating elementary programming constructs.*
   Student Learning Outcome (2): *Create algorithms, code, document, debug, and test introductory level C++ programs.*
   Student Learning Outcome (3): *Read, analyze and explain introductory level C++ programs.*

Course Outline: Please refer to course calendar.

Attendance:
You are expected to attend all class sessions. Lectures will be the main source of information for both labs and exams.

You will **not** be automatically dropped if you do not come to class. Thus, be sure to withdraw officially to avoid 'F' grade on your transcript.

Required Text:
Solutions for Starting Out with C++: From Control Structures through Objects, 8th Edition by *Gaddis* ISBN-10: 0-13-376939-9 • ISBN-13: 978-0-13-376939-5

Assistance:
CodeBlocks Compiler may be downloaded for free from
http://sourceforge.net/projects/codeblocks/files/Binaries/10.05/Windows/codeblocks-10.05mingw-setup.exe/download .

Course materials are available https://catalyst.deanza.edu.

CIS has its own tutorial program. Sign up in ATC 203 – CIS Lab.

Grading:

Class/Online Participation	55 points
Online Tutorial Work (CodeLab Assignments)	45 points
Quizzes on homework	100 points
Programming Lab Assignments (8)	300 points
Midterms (2)	200 points
Final	200 points

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%

Where percentages are rounded to the nearest whole number.

Lab assignments will be graded on the following criteria:
1) correctness   3) style, clarity, and documentation
2) structure   4) theme issues

Late 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. Late assignments must be submitted in hard copy. (Exception is Lab 7)

E-mail messages and questions to PapeMary@fhda.edu. For security purposes unsolicited attachments will not be downloaded.

Extra credit opportunities:
- Extra credit includes five (5) points for being at the instructor's computer.
- Several 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.

Academic Honesty
With the exception of Lab 1A & B, 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. Any duplicate assignments submitted will receive zero points without regard to who originated and who copied.**

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

January

Parts of a Compute; Programming Languages; *First Program (1.1 -> 1.7, 2.1->2.2, 3.1)	**5**	**6**	**7**	**8**	**9**
*Binary Number System; *Design Tools; Fundamentals of 'C++' (2.3 -> 2.16)	**12**	**13 Lab 0**	**14**	**15 Lab 1(A & B)**	**16**
Expressions & their evaluation (3.2 -> 3.6); More about I/O (3.7-3.8) Math "Built-In" Functions (3.9)	**19** *CodeLab*	**20 Quiz 1**	**21**	**22**	**23**
Functions with no parameters (6.1->6.3) Selection (4.1 -> 4.9)	**26**	**27 Lab 2**	**28**	**29 Quiz 2**	**30**

February

Selection (4.10 -> 4.14) Functions with parameters (6.4)	**2** *CodeLab*	**3 Lab 3**	**4**	**5 Midterm 1 (Ch 1-3)**	**6**
Introduction to loops (while loops) (5.1 -> 5.4) Looping(5.7, 5.8)	**9** *CodeLab*	**10**	**11**	**12**	**13**
do while & for loops (5.5 -> 5.6, 5.9) Nested loops (5.10) Loops with Files (5.11)	**16** *CodeLab*	**17 Lab 4**	**18**	**19 Quiz 3**	**20**
Inter-Function Communication (6.5-> 6.13)	**23**	**24**	**25**	**26**	**27**

March

Overloading Functions (6.14) One-dimensional arrays (7.1 -> 7.2)	**2** *CodeLab*	**3**	**4**	**5**	**6**
One-dimensional arrays (7.3 -> 7.7)	**9**	**10**	**11**	**12**	**13**
Linear Search (8.1) Selection Sort (8-5 p. 374)	**16** *CodeLab*	**17**	**18**	**19 Lab 7 Quiz 4**	**20**
	23	**24 Final (11:30 am-1:30 pm)**	**25**	**26**	**27**

Important Dates

Saturday, January 17: Last day to add.
Monday, January 19: Last day to drop with no grade of record
Friday, February 27: Last day to drop with a 'W'.

Holidays –
Monday, Jan. 19 :: Holiday: Observance of Martin Luther King's Birthday
Friday, Feb. 13 :: Holiday: Observance of Abraham Lincoln's Birthday
Monday, Feb. 16 :: Holiday: Observance of George Washington's Birthday

All assignments must be turned in by 11:30 A.M. on Tuesday, March 24– *No Exceptions*

I. Code Lab

    A. Instructions

How/Where to register:
1.   Go to www.turingscraft.com
2.   Click "register" in the upper right hand corner
3.   Choose **STUDENT: I am in a course that uses CodeLab.**
4.   Section Access Code is DEAN-17594-SFFB-23 and click on CONTINUE.
5.   Continue filling out the forms being careful to enter a valid e-mail address and first and last names since these will appear on my roster.

After you log in for the first time, click PREFERENCES to change your password. PREFERENCES will also let you select a nickname to use for your login name instead of needing to use your e-mail address. Also, you can set screen size dimensions for your CodeLab.

NOTE: You will need to pay $15 after doing the first 10 exercises. If this is a financial hardship for anyone please send me an email at PapeMary@DeAnza.edu.

    B. Code Lab Assignments

Ref	Chapter	# of Exercises	Minimum to be completed	Due Date
CL 1	Chapter 2: Intro to C++	126	15	January 19 (midnight=11:59)
CL 2	Chapter 3: Structure of a C++ Program	55	15	February 2 (midnight)
CL 4	Chapter 4: Decisions	77	15	February 9 (midnight)
CL 3	Chapter 6: Functions	61	15	February 16 (midnight)
CL 5	Chapter 5: Loops	66	15	March 2 (midnight)
CL 6	Chapter 7: Arrays	68	15	March 16 (midnight)

Credit will be given for on-time work only.

II. Text problems

Answer the following in preparation for quizzes and exams. They will not be collective but exact or similar problems will appear on quizzes and exams.

#1	Quiz 1 Midterm 1 Final	Chapter 1: p. 24: 1, 2. 4, 7, 11-20, 25-28, 31, 33-35 Binary Worksheet Chapter 2: p. 75: 4, 8, 9-21, 27
#2	Quiz 2 Midterm 1 Final	Chapter 3: p. 137: 4, 5, 35, 36 p. 142: 1, 5
#3	Quiz 3 Midterm 2 Final	Chapter 4: p. 215: 31-41
#4	Quiz 4 Midterm 2 Final	Chapter 5: p. 289: 35, 36, 37, 39, 40, 42, 43
#5	Midterm 2 Final	Chapter 6: p. 363: 2, 32, 33, 34, 37
#6	Final	Chapter 7: p. 443: 2, 4, 9, 41,42, 43 Chapter 8: p. 490: 2, 3

*programs to be written for these problems

N. B. The final is comprehensive

III. Tentative Programming Problems

Lab 0	Student Information
Lab 1	1A-D: Type in code; MPG p. 82; Sphere surface area & volume; converting number of coins to value
Lab 2	P. 144 #14
Lab 3	TV/VCR Problem
Lab 4	De Anza Bookstore
Lab 5	Monthly House Costs
Lab 6	Retirement of Bonded Debt
Lab 7	Grades with one-dim arrays