Class lecture/lab session: Sarkar_1_19_23 (Week 1-2 Canvas module – Gaddis Chapter 1)

- Welcome and general introductions
  - **Discussion item: online class check-in & introductions (due 1/19/23)**
- CS10A class overview
  - Programming Fundamentals using C++
  - Algorithm Development
  - Proper Program Design, Structure and Documentation
- Course structure, content and resources (CANVAS, Maggini Hall#2806 & open labs)
- Program Development Process
  - (problem domain>pseudocode>source code>object code>executable>problem solution)
- A first look at an Integrated Development Environment
  - CodeBlocks & Replit
- Samples program demonstrations
  - (Gaddis text featured programs & Maggini server)

Class lecture/lab session: Sarkar_2_7_23 & 2_9_23 (Week 3-4 Canvas module – Gaddis Chapter 3)

C++ Development Tools/Integrated Development Environments

Microsoft® Visual Studio®(opens new window)

Visual Studio Code(opens new window)

CodeBLocks (opens new window)

NetBeans™ C++ IDE(opens new window)

Eclipse™ for C++ IDE(opens new window)

Dev C++(opens new window)

CodeLite

Class lecture/lab session: Sarkar_1_19_23 (Week 1-2 Canvas module – Gaddis Chapter 2)

- **Program Development Environment Setup**
  - Local Integrated Development Environment (IDE) Installation
  - Code::Blocks Components & Features
  - Try It Option Online
- **Basic Programming Language Syntax & Semantics**
  - C++ Program Design & Structure
  - Compile & Execute C++ Program
  - Semicolons & Blocks in C++
  - Naming “Things” or elements in C++
  - C++ Identifiers
  - C++ Keywords
  - Proper Program Format and Documentation
  - Comments in C++
- **Algorithms – Physical Flow vs Logical Flow - Samples program demonstrations**
- **Gaddis Chapter#1 Quiz (due 1/24/23) & Gaddis Chapter#2 Quiz (due1/25/23)**
- **Programming practice assignment – practice.cpp, dr_seuss.cpp (due 1/24/23)**

Class lecture/lab session: Sarkar_1_24_23 (Week 1-2 Canvas module – Gaddis Chapter 2)

- **Program Structure and Parts of a C++ Program – a review**
- **Data Types – Alpha & Numeric**
  - Variables & Constant variables
  - Deciding on what datatype to use
  - Mixed type
- **Program Development Process**
  - Algorithm Development using Pseudocode
  - Coding from pseudocode – Program warm-up exercises
- **Practice Assignment(due 1/24/23)**
- **Gaddis Chapter#1 Quiz (due 1/24/23) & Gaddis Chapter#2 Quiz (due1/25/23)**
- **Algorithm Workbench#1 Exercise (extra credit due 1/26/23)**
- **Assignment#1 – review (due 1/27/23)**

Class lecture/lab session: Sarkar_1_26_23 (Week 1-2 Canvas module – Gaddis Chapter 2)

- **Introduction to C++ Review**
  - Program development process review
  - Algorithm Development using Pseudocode
  - Gaddis content review
  - Review Questions & Exercises
- **Assignment#1 – review**
  - Programming Segments & Documentation
- **Numeric Expressions Review (Gaddis Chapter#3) – next module**
  - Arithmetic Operators & Coding Expressions
  - Precedence Rules
  - Types Casting and Type Coercion
- **Algorithm Workbench#2 Exercise (extra credit due 2/2/23) – next module**

Class lecture/lab session: Sarkar_1_31_23 & 2_2_23 (Week 3-4 Canvas module – Gaddis Chapter 3)

- **Input Processing**
  - cin object & >> extraction operator
  - Other input processing related built-in functions
  - Various types of data type inputs & validation issues
- **Type Conversion**
  - Implicit Type Conversion
  - Explicit Type Conversion
  - Type Promotion & Demotion
- **Numeric Expressions Review**
  - Arithmetic Operators & Coding Expressions
  - Precedence Rules
  - Multiple and Combined Assignments
  - Sample Programming Challenges working with Numeric Expressions
- **Gaddis Chapter#3 Quiz (due 2/1/23)**
- **Focused Discussion Topic#1 - Ethical Computer usage (due 2/8/23)**

Class lecture/lab session: Sarkar_2_7_23 & 2_9_23 (Week 3-4 Canvas module – Gaddis Chapter 3)

- **Output Formatting**
  - #include<iomanip> //needed to access various output manipulators
  - Understanding use of output manipulators such as setw(5) or setprescision(2) or cout<<fixed<<showpoint;
  - Significant digits, fixed point notation and decimal place output
- **Generating and working with random numbers**
  - #include<cstdlib> and #include<ctime>
  - Helpful code setup syntax needed to generate and store random numbers within a specified range into variables for future use in programming segments that require random numbers
  - Limiting the Range for a random number (number=(rand() % (maxValue-minValue+1))+minValue… see Gaddis section 3.10 pgs.135-136)
- **More on character and string related processing**
  - Defining character and strings
  - Processing for multiple inputs of characters, numbers and strings correctly
  - #include<string> and access to other string processing related functions
- **Assignment#2 Review time – due February 10, 2023**
- **Next week – Decision Making with Selection Control Structures (Gaddis text Chapter#4)**
  - An algorithm workbench exercise (extra credit) – Writing relational and logical expressions due 2/21/23
  - Assignment#3 – due February 24, 2023