

**Common Course Outline**  
**CSIT 210**  
**Introduction to Programming**  
**4 Semester Hours**

**The Community College of Baltimore County**

**Description**

**CSIT 210 – 4 credits - Introduction to Programming** teaches problem solving skills using accepted programming practices; discusses algorithms, data structures, fundamental syntax of an object-oriented language, such as Java, including data types, control structures, file I/O, classes, objects, methods, and arrays.

**4 credits: 4 lecture hours per week**

**Co-requisite: CSIT 111 or consent of Program Director.**

**Overall Course Objectives**

Upon successfully completing the course students will be able to:

1. use an object-oriented programming language for problem solving;
2. design algorithms and translate them into working solutions;
3. demonstrate the importance of testing and validating the solution;
4. identify the data types and variable naming conventions;
5. demonstrate how to do calculations;
6. demonstrate inputting and outputting of data;
7. identify techniques for formatting data;
8. construct programs using the 3 control structures: sequence, selection, and repetition;
9. write programs using arrays;
10. identify, explain, and discuss data organization; and
11. develop basic GUI (Graphical User Interfaces) using various programming components.

**Major Topics**

- I. Role of different programming languages
  - a. Procedural
  - b. Event-driven
  - c. Object-oriented
- II. Introduction to a Structured Language
  - a. Logic diagrams
  - b. Use of Integrated Development Environment
- III. Program Development Cycle
  - a. Design the solution
  - b. Code
  - c. Test
  - d. Document
- IV. Data Types
- V. Arithmetic Expressions

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## VI. Input and output

- a. Accepting data from the keyboard
- b. Formatting output

## VII. Selection

- a. Simple If
- b. Nested If
- c. Switch

## VIII. Repetition

- a. while loop
- b. do loop
- c. for loop

## IX. Methods and Classes

### X. Data files

- a. Data vocabulary
- b. Sequential files
- c. text files

### XI. Arrays

### XII. Debugging Techniques

- a. Use of loop invariants
- b. Use of method preconditions and postconditions
- c. Use of stubs and drivers
- d. Program tracing, testing, documentation and verification

### XIII. Graphical User Interfaces

- a. Components used in developing a GUI window
- b. Complex GUI using layouts
- c. ActionListeners

## **Course Requirements**

Grading: Grading procedures will be determined by the faculty member, will be provided the first week of class, and will include:

1. Minimum of 5 programming projects\*
2. Minimum of 2 tests
3. Comprehensive final exam or programming project

\*These projects will include collaborative work, written portions and oral presentations as assigned by the faculty member.

## **Other Course Information**

This course is required for the Computer Science and Information Technology programs at CCBC, and prepares students for CSIT 211. Students must receive a B in this course in order to enroll in CSIT 211.

CSIT 210 is required for the CGVC – SDE (Simulation and Digital Entertainment) option.