

Atlantic Cape Community College  
Black Horse Pike  
Mays Landing, NJ 08330

## CIM154 Computer Programming – Java

**Prerequisites:** CISM 125 Introduction to Computers

### ***Course Description***

Introduces students to programming concepts and methodologies using the Java programming language. Emphasizes structured programming techniques in procedural programs, and object-oriented programming techniques. Covers control structures, arrays, strings, and external data. No prior programming experience is required. Credits: 4

### **TEXT:**

**Starting Out With Java Early Objects, 6<sup>th</sup> edition,**

Author: Gaddis, Publisher: Pearson ISBN: 9780134462011

**Materials:** USB Flash Drive

### **Learning Outcomes:**

- The student will be able to design, implement, test, debug, and document Java programs, using appropriate development tools.
- The student will be able to implement simple graphical user interface (GUI) applications using Java Swing classes.
- The student will be able to select appropriate Java collection classes for particular applications.
- The student will be able to increase robustness of Java applications using exception handling.

## ASSESSMENT STRATEGIES

Student Learning Outcome	Assessment Strategies
The student will be able to design, implement, test, debug, and document Java programs, using appropriate development tools.	Programming Assignment
The student will be able to implement simple graphical user interface (GUI) applications using Java Swing classes.	Programming Assignment
The student will be able to select appropriate Java collection classes for particular applications.	Programming Assignment
The student will be able to increase robustness of Java applications using exception handling.	Programming Assignment

## LEARNING GOALS AND OBJECTIVES

The following list of course objectives will be addressed in the course:

### Chapter 1 Introduction to Computers and Java

The student will:

- Explain Why Program?
- Describe Computer Systems: Hardware and Software
- Describe Programming Languages
- Explain What Is a Program Made Of?
- Describe The Programming Process
- Explain Object-Oriented Programming

### Chapter 2 Java Fundamentals

The student will:

- Identify The Parts of a Java Program
- Use The print and println Methods, and the Java API
- Code Variables and Literals
- Code Primitive Data Types
- Code Arithmetic Operators
- Use Combined Assignment Operators
- Create named constants with final
- Code The String class
- Use proper Scope
- Understand the different types and uses of Comments
- Use proper Programming style
- Read keyboard input
- Identify Dialog boxes
- Use the printf method

### Chapter 3 A First Look at Classes and Objects

The student will:

- Create Classes
- Explain Passing Arguments
- Create Instance Fields and Methods
- Create Constructors
- Create A BankAccount Class
- Classes, Variables, and Scope
- Focus on Object Oriented Design

#### **Chapter 4 Decision Structures**

The student will:

- Code an if Statement
- Code an if-else Statement
- Create The PayRoll class
- Code Nested if Statements
- Code an if-else-if Statement
- Utilize Logical Operators
- Compare String Objects
- Explain Variable Declaration and Scope
- Utilize The Conditional Operator
- Code a switch Statement
- Utilize The DecimalFormat Class
- Utilize The SalesCommission Class
- Utilize The Random Class

#### **Chapter 5 Loops and Files**

The student will:

- Utilize The Increment and Decrement Operators
- Utilize The while Loop
- Use the while Loop for Input Validation
- Utilize The do-while Loop
- Utilize The for Loop
- Run Totals and Sentinel Values
- Code Nested Loops
- Code The break and continue Statements
- Decide and Code Which Loop to Use
- Explain File Input and Output

#### **Chapter 6 A Second Look at Classes and Objects**

The student will:

- Code Static Class Members
- Code Overloaded Methods
- Code Overloaded Constructors
- Pass Objects as Arguments to Methods
- Return Objects from Methods
- Utilize The toString method
- Write an equals method
- Create Methods that copy objects
- Explain Aggregation
- Use The this Reference Variable

- Explain Inner Classes
- Describe Enumerated types

## **Chapter 7 Arrays and the ArrayList Class**

The student will:

- Describe Arrays
- Process Array Contents
- Pass Arrays as Arguments to Methods
- Use Array Algorithms and Operations
- Return Arrays from Methods
- Use String Arrays
- Use Arrays of Objects
- Use The Sequential Search Algorithm
- Explain Two-Dimensional Arrays
- Explain Arrays with Three or More Dimensions
- Use The Selection Sort and the Binary Search
- Use Command-Line Arguments
- Use The ArrayList Class

### **ADA Accommodations**

As per the Americans with Disabilities Act (ADA), reasonable accommodations can be provided to students who present current documentation (within five years) of a disability to Atlantic Cape Community College's Center for Accessibility, located on the first floor of "J" Building in the Counseling and Support Services department (Mays Landing campus). Reasonable accommodations cannot be provided for a course until the student registers with the Center for Accessibility. For more information, please contact the Center for Accessibility via email at [cfa@atlantic.edu](mailto:cfa@atlantic.edu) or call 609-343-5680.

## COURSE EVALUATION

Programming Assignments	25%
Labs	20%
Lab Tests	10%
Quizzes	20%
Tests	25%

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TOTAL 100 %

### Grading scale:

Grade	Percentage Range	Grade Point Value
A	93-100%	4.0
A-	90-92%	3.7
B+	87-89%	3.3
B	83-86%	3.0
B-	80-82%	2.7
C+	77-79%	2.3
C	70-76%	2.0
D	60-69%	1.0
F	0-59%	0.0

