**SOUTHEAST COMMUNITY COLLEGE**
**CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION**
**Computer Information Technology Program**
**Revision Date: August 21, 2023**
Syllabus Statements

## I.   CATALOG DESCRIPTION

| | |
|---|---|
| Course Number: | INFO1414 |
| Course Title: | Java |
| Prerequisite(s): | INFO1151, INFO1171, INFO1214; min. grade "C" |
| | Or CSCI1550; min. grade "C" |
| Corequisite(s): | INFO1411, MATH1020 or higher |
| Catalog Description: | A course covering the fundamentals of the Java programming language using object-oriented principles as well as advanced concepts such as inheritance, exception handling, graphical user interface design, file processing, database connectivity, and threads. |
| Credit Hours: | 4 |
| Class Hours: | 60 |
| Lab Hours: | 0 |
| Total Contact Hours: | 60 |

## II.   COURSE OBJECTIVES: *Course will:*

**A.**   Introduce students to a common IDE used for Java development.
**B.**   Describe essential programming skills.
**C.**   Explain how to handle exceptions and validate data.
**D.**   Introduce object-oriented programming concepts.
**E.**   Define and use classes.
**F.**   Identify the different data structures in Java.
**G.**   Provide an overview of GUI programming.
**H.**   Introduce database programming.

## III.   STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

**A.**   Student Learning Outcomes: *Student will be able to:*
   **1.**   Develop Java programs using an IDE.
   **2.**   Test and debug an application.
   **3.**   Compare and use numeric and String variables.
   **4.**   Construct control statements.
   **5.**   Practice how to code and call methods.
   **6.**   Demonstrate data validation and exception handling.
   **7.**   Use object oriented programming skills to create and use objects.
   **8.**   Design classes to structure an application.
   **9.**   Construct applications using inheritance.
   **10.**   Define and use interfaces.
   **11.**   Practice working with array's and collections.
   **12.**   Design an application using file I/O.
   **13.**   Compare the different GUI programming options.
   **14.**   Create an application using GUI programming.
   **15.**   Use SQL to work with a database.
   **16.**   Construct a database application using JDBC.
**B.**   General Education Learning Outcomes (GELOs)

      1.      GELO #3: Critical Thinking & Problem Solving:
              Outcome 2: Synthesize information to arrive at reasoned solutions to problems.

## IV.    CONTENT/TOPICAL OUTLINE

- **A.** Java Program Development.
  - **1.** Overview of basic elements of the Java language using an IDE.
- **B.** Java Data and Operator.
  - **1.** Strings and primitive data types.
- **C.** Control Structures.
  - **1.** If/else, switch statements and loops.
- **D.** Methods and data validation
  - **1.** Exception handling and data validation with methods.
- **E.** Objects oriented concepts
  - **1.** Classes, objects and inheritance.
  - **2.** Interfaces.
- **F.** Data Structures
  - **1.** Arrays, collections and file I/O.
- **G.** GUI Programming
- **H.** Database
  - **1.** SQL and JDBC to work with a database.

## V.    INSTRUCTIONAL MATERIALS

- **A.** Required Text(s): Murach, Joel, *Java Programming,* (Refer to CID and/or instructor for current edition)
- **B.** Other Resources: Required software available as a free download
- **C.** Computer and Internet access

## VI.    METHODS OF PRESENTATION/INSTRUCTION

- **A.** Methods of presentation typically include a combination of the following:
  - **1.** Technology enhanced lectures
  - **2.** Engaged learning activities

## VII.    METHODS OF EVALUATION

- **A.** Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
  - **1.** Attendance and/or participation activities
  - **2.** Homework assignments
  - **3.** Quizzes and Tests
  - **4.** Project

## VIII.    SPECIFIC COURSE REQUIREMENTS

- **A.** This course will not qualify as a prerequisite if the student receives a final grade below a C (70%).