

RARITAN VALLEY COMMUNITY COLLEGE ACADEMIC COURSE OUTLINE

CISY 249 Java

I. Basic Course Information

A. Course Number and Title: CISY 249 Java

B. New or Modified Course: Modified Course

C. Date of Proposal: Semester: Fall Year: 2017

D. Effective Term: Fall 2018

E. Sponsoring Department: Computer Science

F. Semester Credit Hours: 3

G. Weekly Contact Hours: Lecture: 2
 Laboratory: 2
 Out of class student work per week: 5

H. Prerequisites: A grade of C or better in CISY 103 Computer
 Concepts & Programming OR a grade of C or
 better in CISY 105 Foundations of Computer
 Science OR a grade of C or better in CISY 238 C
 Programming OR a grade of C or better in CISY
 242 Object Oriented Programming

I. Laboratory Fees: Yes

J. Name and Telephone Number or E-Mail Address of Department Chair and Divisional Dean at time of approval: Steven Schwarz – steven.schwarz@raritanval.edu (Chair), Sarah Imbriglio – Sarah.Imbriglio@raritanval.edu (Divisional Dean)

II. Catalog Description

Prerequisites: A grade of C or better in CISY 103 Computer Concepts & Programming OR a grade of C or better in CISY 105 Foundations of Computer Science OR a grade of C or better in CISY 238 C Programming OR a grade of C or better in CISY 242 Object Oriented Programming. Java is a platform-neutral, object-oriented, and secure programming language that is quickly becoming the standard programming language for creating interactive content on the World Wide Web (WWW).

This course covers Java "applets" into their Hyper Text Markup Language (HTML) pages as well as write their own. Students also learn to write Java applets and standalone applications, native libraries, and content/protocol handlers for extending WWW browsers.

III. Statement of Course Need

- A. This course teaches students to design and implement computer-based solutions to problems using the Java Programming Language. The course will introduce higher-level programming concepts, particularly object-oriented programming (OOP). Students learning to program in an object-oriented paradigm will develop higher-level thinking skills necessary to architect encapsulated programs that are scalable to high levels of complexity.
- B. The need for the lab is to give students extra hands-on programming practice with guided supervision.
- C. Although the course is not designed for transfer, for some schools it transfers as a computer elective. Please check NJTransfer.org for the transferability of this course to a specific school.

IV. Place of Course in College Curriculum

- A. Free Elective
- B. This course is an option in:
 - a. Information Systems & Information Technology AS
 - b. Information Systems & Information Technology AASThis course is a programming option in:
 - a. Interactive Digital Media AAS
- C. CIS Elective on the Computer Science CICY Electives List
- D. Programming Elective on the Computer Science CICY Electives List
- E. To see course transferability: a) for New Jersey schools, go to the NJ Transfer website, www.njtransfer.org; b) for all other colleges and universities, go to the individual websites.

V. Outline of Course Content

- A. An overview of Java
 - 1. Java Developer's Kit (JDK)
- B. Running Java applications
- C. Java Language Basics
 - 1. Object-oriented Programming
 - 2. Encapsulation
 - 3. Classes
 - 4. Inheritance
 - 5. Polymorphism

- D. Constants, Variables
 - 1. Simple Input, Output
- E. Math Operations
 - 1. Expressions, Comparisons
- F. If and Switch Statements Loops:
 - 1. While, Do While, For
- F. Functions and Arrays
- G. Classes and Methods
- H. Writing GUI applications
 - 1. Drawing graphics, graphical text, labels, and button controls
 - 2. Check box, text field controls, choice menu, Text area, and scrolling list controls
 - 3. Dialog boxes, windows and menu bars, mouse and keyboard events
- J. Writing Java applications, using Java compiler and interpreter
- K. Using Java FX to create GUI applications
- L. Java Class Libraries
- M. Other Advanced Topics
 - 1. Exceptions, Threads

VI. General Education and Course Learning Outcomes

- A. General Education Learning Outcomes** – At the conclusion of the course, students will be able to:
 - 1. Demonstrate proficiency in using Java language in developing solutions that reflect critical thought (GE-NJ 4)
- B. Course Learning Outcomes** – At the conclusion of the course, students will be able to:
 - 1. Recognize Java programming language syntax while reading and analyzing Java language code
 - 2. Design, develop and test Java console and GUI applications using appropriate Java syntax
- C. Assessment Instruments**
 - 1. Labs
 - 2. Projects
 - 3. Exam

VII. Grade Determinants

- A.** Labs
- B.** Projects
- C.** Exams
- D.** Final Exam and/or Final Project

Modes of Teaching and Learning:

- A.** Lecture/Discussion – Lecture with demonstration of writing problem solving using Java.
- B.** Laboratory – Lab time to write Labs and Projects.

VIII. Texts and Materials

Java, How to program by Dietel (11th Edition).

(Please Note: The course outline is intended only as a guide to course content and resources. Do not purchase textbooks based on this outline. The RVCC Bookstore is the sole resource for the most up-to-date information about textbooks.)

IX. Resources

- a. Computer lab for classroom instructions and exercises.
- b. Java development kit
- c. Ide such as NetBeans, TextPad, NotePad++

X. Honors Option:

N/A