COURSE OUTLINE

COMPUTER SCIENCE/INFORMATION SYSTEMS 112
Introduction to Programming Using Java

I. Catalog Statement

Computer Science/Information Systems 112 is a course in programming computers using the Java programming language, which includes defining the problem; flowcharting; writing, executing, and debugging application programs; and program documentation. Students process programs using the equipment of the on-campus computer.

Units – 3.0
Lecture Hours – 3.0
Lab Hours – 2:0
(Faculty Laboratory Hours – 0 + Student Laboratory Hours – 2.0 = 2.0 Total Laboratory Hours)

Recommended Preparation: CS/IS 101 or equivalent

II. Course Entry Expectations

Skills Level Ranges: Reading 5; Writing 5; Listening/Speaking 5; Math 3.

III. Course Exit Standards

Upon successful completion of the required coursework, the student will be able to:

1. analyze problems and provide logical solutions to them;
2. outline solutions in a systematic fashion (i.e., flowcharting or pseudocode);
3. code and debug Java programs;
4. demonstrate an understanding of the operation of a computer for programming.

IV. Course Content — Total Contact Hours = 48

A. Orientation to the computer — 3 hours
   1. History and theory
   2. Hardware
   3. Operation

B. Programming Sequence — 10 hours
   1. Problem definition
   2. Flowcharts and decision tables
   3. Program coding
   4. Program debugging and testing
   5. Program documentation and maintenance

C. Fundamental Concepts 15 hours
   1. Constants
   2. Numeric variables
   3. Data types
   4. Expressions
   5. Program control structures
   6. Built in classes
   7. Program structure
   8. Text manipulation
   9. Logical comparisons
   10. Simple algorithms

D. Basic concepts of Object oriented programming 10 hours

E. Introduction to applications and applets 10 hours

V. Methods of Presentation

1. Lecture
2. Internet presentations
3. Hands on exercises

VI. Assignments and Methods of Evaluation

1. Programming assignments
2. Quizzes
3. Midterm
4. Final Examination

VII. Textbook

Gaddis, Starting Out w/JAVA, Current Edition.
Upper Saddle River, New Jersey: Prentice Hall; 2013.
11th grade Textbook Reading Level. ISBN: 0-13-285583-6

VIII. Student Learning Objectives

Upon successful completion, the student will be able to:

1. analyze problems and provide logical solutions to them;
2. outline solutions in a systematic fashion (i.e. flowcharting or psesudocode);
3. code, test, and debug Java programs;
4. demonstrate an understanding of the operation of a computer for programming.