

Course Outline

COURSE: CSIS 24 **DIVISION:** 50 **ALSO LISTED AS:**

TERM EFFECTIVE: Spring 2016 **CURRICULUM APPROVAL DATE:** 04/27/2015

SHORT TITLE: JAVA PROGRAMMING I

LONG TITLE: Java Programming I

<u>Units</u>	<u>Number of Weeks</u>	<u>Type</u>	<u>Contact Hours/Week</u>	<u>Total Contact Hours</u>
3	18	Lecture:	3	54
		Lab:	0	0
		Other:	0	0
		Total:	3	54

COURSE DESCRIPTION:

Introduction to Java programming. Includes programming fundamentals, program design, and core computer concepts. Covers the basics of object-oriented programming in the Java environment. (C-ID: COMP 122) ADVISORY: CSIS 10 or CSIS 42.

PREREQUISITES:

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES

- L - Standard Letter Grade
- P - Pass/No Pass

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

- 02 - Lecture and/or discussion
- 05 - Hybrid
- 72 - Dist. Ed Internet Delayed

STUDENT LEARNING OUTCOMES:

1. Analyze and explain the behavior of simple programs involving the fundamental Java programming constructs.

Measure: exams, discussion, programming problems

PLO: 1,2,3,4

ILO: 7,2,3,1

GE-LO: A1, A2, B3, B8

Year assessed or anticipated year of assessment: 2015

2. Modify and expand short programs that use standard conditional and iterative control structures and functions.

Measure: exams, homework, programming problems

PLO: 1,2,3

ILO: 7,2,3

GE-LO: B3

Year assessed or anticipated year of assessment: 2015

3. Design, implement, test, and debug a program that uses each of the following fundamental programming constructs: basic computation, simple I/O, standard conditional and iterative structures, and the definition of functions and objects.

Measure: exams, homework, programming problems

PLO: 1,2,3,4

ILO: 7,2,3

GE-LO: B3

Year assessed or anticipated year of assessment: 2015

PROGRAM LEARNING OUTCOMES:

- 1) Student will code, debug, document, test, and run programs.
- 2) Student will write programs in at least three different programming languages, and compare and contrast the philosophies and comparative advantages of each these languages.
- 3) Students will demonstrate professional conduct by meeting project deadlines, and participating in self-managed teams.
- 4) Student will create algorithms to solve programming problems, and implement those algorithms.

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS

Curriculum Approval Date: 04/27/2015

(6 hours) An Overview of Computers and Programming Languages

History

Programming paradigms

Procedural Languages

Object-oriented languages

Features of Java

Student Performance Outcomes

Compare and contrast programming paradigms

Summarize the history of programming languages and describe the issues each programming language sought to address.

Homework: Read chapter and do assigned exercises and programming problems.

(7 hours) Basic Elements of Java

Variables, types, expressions and assignment

Simple I/O

Introduction to objects

(9 hours) Introducing data types and operators

Declarations and types

Why data types are important
Java's primitive types
Type-checking
Binding, visibility, scope, lifetime
Arithmetic operators
Relational operators
Assignment operator
Type conversion in assignment
Casting incompatible types
Student Performance Outcomes
Describe programming declaration models
Define properties of a variable such as address, value, scope, persistence, size
Explain type incompatibility and the importance of type-checking
Write simple programs using arithmetic, relational, and assignment operators
Homework: Read chapter and do assigned exercises and programming problems.
(6 hours) Introduction to algorithms
Problem solving
Introduction to debugging
Student Performance Outcomes
Create and implement algorithms for simple problems
Describe how to implement algorithms
Discuss the importance of good algorithms
Describe debugging strategies
Homework: Read chapter and do assigned exercises and programming problems.
(6 hours) Selection Control Structures
The if statement
Nested ifs
If then else
Switch statement
Student Performance Outcomes
Write simple programs using if statements, if then else statements, switch statements.
Choose an appropriate selection control structure for a programming task
Homework: Read chapter and do assigned exercises and programming problems.
(6 hours) Repetition Control Structures
For statements
Do while statements
Switch multiple-selection statement
Break and continue statements
Logical operators
Student Performance Outcomes
Write simple programs using repetition control statements.
Choose an appropriate repetition control structure for a programming task
Homework: Read chapter and do assigned exercises and programming problems.
(12 hours) Functions and Parameter passing
Structured Decomposition
User Defined Functions
User-Defined Classes and ADT
Parameter passing

Introduction to Classes, Objects Methods and Strings

Student Performance Outcomes

Apply the techniques of structured decomposition to break a program into smaller pieces.

Describe the mechanics of parameter passing.

Compare the object-oriented approach and the procedural approach to structured decomposition.

Homework: Read chapter and do assigned exercises and programming problems.

(2 hours) Final Exam

METHODS OF INSTRUCTION:

Lecture, discussion, guided practice

METHODS OF EVALUATION:

The types of writing assignments required:

Written homework

Reading reports

Lab reports

The problem-solving assignments required:

Homework problems

Exams

The types of skill demonstrations required:

Class performance

Performance exams

The types of objective examinations used in the course:

Multiple choice

True/false

Matching items

Completion

Other category:

None

The basis for assigning students grades in the course:

Writing assignments: 1% - 20%

Problem-solving demonstrations: 30% - 70%

Skill demonstrations: 10% - 50%

Objective examinations: 5% - 20%

Other methods of evaluation: 0% - 0%

REPRESENTATIVE TEXTBOOKS:

Required:

Deitel. Java How to Program. Prentice Hall, 2014. Or other appropriate college level text.

Reading level of text, Grade: 12+ Verified by: E. Venable

Other textbooks or materials to be purchased by the student: USB flash drive

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:

CSU GE:

IGETC:

CSU TRANSFER:

Transferable CSU, effective 200630

UC TRANSFER:

Transferable UC, effective 200630

SUPPLEMENTAL DATA:

Basic Skills: N

Classification: Y

Noncredit Category: Y

Cooperative Education:

Program Status: 1 Program Applicable

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department: CSIS

CSU Crosswalk Course Number: 24

Prior to College Level: Y

Non Credit Enhanced Funding: N

Funding Agency Code: Y

In-Service: N

Occupational Course: C

Maximum Hours:

Minimum Hours:

Course Control Number: CCC000283019

Sports/Physical Education Course: N

Taxonomy of Program: 070710