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

<table>
<thead>
<tr>
<th>Units</th>
<th>Number of Weeks</th>
<th>Type</th>
<th>Contact Hours/Week</th>
<th>Total Contact Hours</th>
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<td>3</td>
<td>18</td>
<td>Lecture: 3</td>
<td>3</td>
<td>54</td>
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<td></td>
<td></td>
<td>Lab: 0</td>
<td>0</td>
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<td></td>
<td></td>
<td>Total: 3</td>
<td>3</td>
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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

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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

5/11/2015
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

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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:
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

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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