FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: COP 2800C

COURSE TITLE: Java 1

PREREQUISITE(S): COP 1000C with a ‘C’ or better

COREQUISITE(S): None

CONDITIONS: None

CREDIT HOURS: 3

CONTACT HOURS/WEEK: 4

CONTACT HOUR BREAKDOWN:

Lecture/Discussion: 3

Laboratory: 1

Other:

FACULTY WORKLOAD POINTS: 3.7

STANDARDIZED CLASS SIZE ALLOCATION: 24

CATALOG COURSE DESCRIPTION:

This course provides a rigorous and comprehensive introduction to the Java programming language which prepares students for the Oracle Certified Associate (OCA), Java SE 8 Programmer 1 certification exam. Topics include in-depth coverage of Java operators, decision structures, repetition structures, classes, methods, inheritance, polymorphism, exception handling, select Java APIs, lambda expressions, and garbage collection. The concepts are utilized in hands-on programming projects and certification exam practice exercises.

SUGGESTED TEXT(S): Mughal, Khalid, *A Programmer's Guide to Java SE 8 Oracle Certified Associate (OCA).* ISBN 978-0132930215. Latest Edition

Boyarsky, Jeanne. *OCA: Oracle Certified Associate Java SE 8 Programmer / Study Guide: Exam 1Z0-808.* ISBN 978-1118957400. Latest Edition.

IMPLEMENTATION DATE: Fall Term 2019 (2198) – Proposal 2019-15

REVIEW OR MODIFICATION DATE:

COURSE TOPICS CONTACT HOURS

PER TOPIC

I. Introduction to Java Programming 3

A. Overview of the Java language, key features, and benefits

B. Overview of the Oracle OCA Java SE 8 Programmer 1 certification

C. Creating an executable Java application

D. Using Java in a command line environment

II. Java Language Fundamentals 6

1. Basic language elements
2. Primitive data types
3. Operators and expressions
4. Reference variables
5. Arrays

III. Classes, Methods, and Enumerated Types 6

A. Java classes

B. Java methods

C. Enumerated types

IV. Access Control 3

A. Packages

B. Scope rules

C. Modifiers

V. Control Flow 9

1. Selection structures
2. Repetition structures
3. Exception handling

VI. Inheritance and Polymorphism 9

A. Relationships and Inheritance

B. Abstract classes and methods

C. Generic types

D. Interfaces

E. Polymorphism

F. Lambda expressions

VII. Fundamental APIs 6

A. Wrapper classes

B. String and StringBuilder

C. Temporal objects and temporal arithmetic

D. Date, Time, and Period

VIII. Java Object Lifecycle 3

A. Object Finalization

B. Garbage Collection

IX. Lab Exercises 15

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Florida State College at Jacksonville** | | | | | | | | | | | | | **Course Learning Outcomes and Assessment** | | | | | | | | | | | |
| **SECTION 1** | | | | | | | | | | | | | | | | | | | | | | | | |
| Course Prefix and Number: | | | | | COP 2800C | | | | | | | | | | | Semester Credit Hours (Credit): | | | | | | | | 3 |
| Contact Hours (Workforce): | | | | | | | |  |
| Course Title: | | | | | Java 1 | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
| **SECTION 2a *(To be completed for General Education courses only.)*** | | | | | | | | | | | | | | | | | | | | | | | | |
| ***TYPE OF COURSE (Place an “X” in the box next to those that are applicable.)*** | | | | | | | | | | | | | | | | | | | | | | | | |
|  | General Education Core (If selected, core discipline area will be identified in Section 4.) | | | | | | | | | | | | | | | | | | | | | | | |
|  | General Education (If selected, you must also complete Section 4, Section 5, and Section 8) | | | | | | | | | | | | | | | | | | | | | | | |
| **SECTION 2b** | | | | | | | | | | | | | | | | | | | | | | | | |
| ***TYPE OF COURSE (Place an “X” in the box next to those that are applicable.)*** | | | | | | | | | | | | | | | | | | | | | | | | |
| X | A.A. Elective | | | | | | |  | | A.S. Required Course | | | | | | | | | | X | A.S. Professional Elective | | | |
|  | A.A.S. Required Course | | | | | | |  | | A.A.S. Professional Elective | | | | | | | | | | X | Technical Certificate | | | |
|  | PSAV/Clock Hour/Workforce | | | | | | |  | | Development Education | | | | | | | | | |  | Apprenticeship | | | |
|  | Upper Division/Bachelors | | | | | | |  | | Other: | | If selected, use this space to title “other” option. | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
| **SECTION 3** | | | | | | | | | | | | | | | | | | | | | | | | |
| ***INTELLECTUAL COMPETENCIES (Place an “X” in the box next to those that are applicable.)*** | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | Reading |  | Speaking | | |  | | Critical Analysis | | | | | |  | | | Qualitative Skills | | | |  | Scientific Method of Inquiry | |
|  | | Writing |  | Listening | | |  | | Information Literacy | | | | | |  | | | Ethical Judgement | | | |  | Working Collaboratively | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
| **SECTION 4 *(To be completed for General Education courses only.)*** | | | | | | | | | | | | | | | | | | | | | | | | |
| ***GENERAL EDUCATION DISCIPLINE AREA (Place an “X” in the box next to those that are applicable.)*** | | | | | | | | | | | | | | | | | | | | | | | | |
|  | Communications | | | | |  | | | | Humanities | | | |  | | | Mathematics | | | | | | | |
|  | Social and Behavioral Sciences | | | | | | | | | | | | |  | | | Natural Sciences | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
| **SECTION 5 *(To be completed for General Education courses only.)*** | | | | | | | | | | | | | | | | | | | | | | | | |
| ***GENERAL EDUCATION LEARNING OUTCOME AREA (Place an “X” in the box next to those that are applicable.)*** | | | | | | | | | | | | | | | | | | | | | | | | |
|  | Communication | | | | |  | | | | Critical Thinking | | | |  | | | Information Literacy | | | | | | | |
|  | Scientific and Quantitative Reasoning | | | | | | | | | | | | |  | | | Global Sociocultural Responsibility | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
| **SECTION 6** | | | | | | | | | | | | | | | | | | | | | | | | |
| ***LEARNING OUTCOMES*** | | | | | | | | | | | ***TYPE OF OUTCOME***  ***(General Education, Course or Program)*** | | | | | | | | ***METHOD OF ASSESSMENT*** | | | | | |
| Demonstrate knowledge of Java data types and the command line environment as presented in the OCA certification exam | | | | | | | | | | | Course | | | | | | | | Quizzes, exams | | | | | |
| Develop simple Java programs | | | | | | | | | | | Course | | | | | | | | Projects, quizzes, exams | | | | | |
| Demonstrate knowledge of classes, methods and enumerated types as presented in the OCA certification exam | | | | | | | | | | | Course | | | | | | | | Quizzes, exams | | | | | |
| Develop Java programs using custom classes, methods, and enumerated types | | | | | | | | | | | Course | | | | | | | | Projects, quizzes, exams | | | | | |
| Demonstrate knowledge of packages, scope rules, and modifiers as presented in the OCA certification exam | | | | | | | | | | | Course | | | | | | | | Quizzes, exams | | | | | |

|  |  |  |
| --- | --- | --- |
| **SECTION 6 (Continued)** | | |
| ***LEARNING OUTCOMES*** | ***TYPE OF OUTCOME***  ***(General Education, Course or Program)*** | ***METHOD OF ASSESSMENT*** |
| Demonstrate knowledge of selection structures, repetition structures, and exception handling as presented in the OCA certification exam | Course | Quizzes, exams |
| Develop Java programs using packages, selection structures, repetition structures, and exception handling | Course | Projects, quizzes, exams |
| Demonstrate knowledge of inheritance, abstract methods, generic types, polymorphism, interfaces, and lambda expressions as presented in the OCA certification exam | Course | Quizzes, exams |
| Develop Java programs using inheritance, abstract methods, interfaces, polymorphism, and lambda expressions | Course | Projects, quizzes, exams |
| Demonstrate knowledge of wrapper classes and the String, StringBuilder, Date, Time, and Period classes and APIs as presented in the OCA certification exam | Course | Quizzes, exams |
| Develop Java programs using wrapper classes and the String, StringBuilder, Date, Time, and Period classes | Course | Projects, quizzes, exams |
| Demonstrate knowledge of object finalization and garbage collection as presented in the OCA certification exam | Course | Quizzes, exams |

|  |  |  |  |
| --- | --- | --- | --- |
| **SECTION 7** | | | |
| Faculty name(s): | David Singletary | Date: | 2/11/2019 |

CS20150615