AUSTIN COMMUNITY COLLEGE
CONTINUING EDUCATION

Java Programming: Part I: – Java Track

(24 hours)

ITSE 1070

COURSE SYLLABUS

Course Description: Introduces the idea of Object Oriented Programming, objects, classes, state and behavior, statements and expressions, instance and class methods, casting, arrays, logic and loops, creating classes, creating Java applications, command-line arguments, constructor methods, overriding methods, overriding constructors, beginning Collections usage, and finalizer methods. **Prerequisites**: ITSE 1003 Introduction to Programming Languages (with Java).

Required book: The Java Tutorial: A Short Course on the Basics, Sharon Zakhour, Sowmya Kannan, Raymond Gallardo, 5th edition, ISBN 978-0132761697.

Objectives: Every student will be able to:

- Describe objects and classes
- Model systems of objects and behaviors using CRC cards
- Implement those models as Java classes
- Explain the use of methods and constructors
- Correctly use access modifiers to achieve encapsulation
- Organize code in packages

Evaluation: Students will be evaluated on their competency in performing a variety of hands-on exercises created to insure the student has achieved all course objectives throughout the course, and class participation. In order to grant CEU credit for a course the students must be able to complete assessment exercises for each part of the course given by the instructor. The instructor will validate each participant's achievement of the course objectives by signing and awarding individual certificates of completion.

Course Outline:

I. Introduction
   A. What is Object-Oriented Programming?
   B. What are Objects?
   C. Modeling with CRC cards

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II. Classes in Java
   A. Creating classes
   B. Instance variables
   C. Instance methods

III. Object state
   A. Constructors and Initialization
   B. Getters and Setters
   C. Encapsulation
   D. Access modifiers: public, private

IV. Class methods
   A. Static modifier
   B. Class variables and methods

V. Inheritance
   A. Inheritance
   B. Polymorphism
   C. Access Modifier: protected

VI. Overloading and overriding
   A. Overloading methods
   B. Overriding methods

VII. Packages
   A. The purpose of packages
   B. Declaring packages and organizing code
   C. Import statements
   D. Access Modifier: default access

VIII. Project