MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE
COURSE OUTLINE

DEPT. CSCI **COURSE NUMBER: 2255**

NUMBER OF CREDITS: 4 **Lecture: 4 Lab: 0 OJT 0**

Course Title:
Java Programming II

Catalog Description:
Java Programming II is an intermediate to advanced study of Java as an object oriented programming language. Concepts include abstract data type with a Class, constructors, overloaded constructors, instance variable, final, superclasses, subclasses, inheritance, String class, constructors and methods, StringBuffer class, constructors and methods, Graphic Objects, Swing Components, Event Handling, Layout Managers, Exception Handling, Multithreading, Files and Streams.

Prerequisites or Necessary Entry Skills/Knowledge:
CSCI 2250

FULFILLS MN TRANSFER CURRICULUM AREA(S) ***(Leave blank if not applicable)***

☐Goal 1: Communication: By meeting the following competencies:
☐Goal 2: Critical Thinking: By meeting the following competencies:
☐Goal 3: Natural Sciences: By meeting the following competencies:
☐Goal 4: Mathematics/Logical Reasoning: By meeting the following competencies:
☐Goal 5: History and the Social and Behavioral Sciences: By meeting the following competencies:
☐Goal 6: The Humanities and Fine Arts: By meeting the following competencies:
☐Goal 7: Human Diversity: By meeting the following competencies:
☐Goal 8: Global Perspective: By meeting the following competencies:
☐Goal 9: Ethical and Civic Responsibility: By meeting the following competencies:
☐Goal 10: People and the Environment: By meeting the following competencies:

Topics to be Covered
Classes and Objects
Object-Oriented Programming: Inheritance
Object-Oriented Programming: Polymorphism
Exception Handling
String, Characters and Regular Expressions
Recursion
Searching, Sorting and Big O

Customer Generic Data Structures; ArrayList, Singley Linked Lists, Class ListNode, ListTest, Stacks, Queues, Trees

Student Learning Outcome
Create Enum data types and employ pointers and structures in program designs.
Implement and use successfully in coding superclasses and subclasses with inheritance hierarchy. Protected variables and private instance variables.
Demonstrate polymorphism coding, abstract classes and methods, final methods and classes.
Describe and successfully use in coding Exception handling.
Describe and use successfully in coding strings, characters and regular expressions.
Use successfully in coding generic lists and collection methods.
Explain through successful coding recursion concepts and compare examples of Fibonacci Series and Towers of Hanoi.
Include successfully in coding projects algorithms of linear search, Big O notation, binary.
Include successfully in coding projects sorting algorithms of selection, insertion and merge sort.
Manipulate generic data structures successfully in coding linked lists, stacks queues and trees.

Is this course part of a transfer pathway: Yes ☐ No ☒
***If yes, please list the competencies below**

Revised Date: 1/18/2022