DEPT.: Computer Science COURSE NO.: CSCI 2250
NUMBER OF CREDITS: 4
COURSE TITLE: Java Programming

CATALOG DESCRIPTION: Provides an overview of the Java programming language and special features of control structures, input/output streams, data structures, and abstraction mechanisms, concepts include creating complete Java classes, derive new classes with effective use of inheritance, and use Java to create applets. Prerequisite: CSCI 2200

AUDIENCE: Typically second year students intending to major in Computer Science as a transfer student, or CIS AA, MIS AA, Computer Specialist AS, Web Development AS, Networking Specialist AS and non-traditional part-time students looking for additional career related credits.

FULLELS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)
Area : by meeting the following competencies:
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PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE: CSCI 2200

LENGTH OF COURSE: 4 credits

THIS COURSE IS USUALLY OFFERED:
spring

Four goals are emphasized in course at Minnesota West Community & Technical College:
1) ACADEMIC CONTENT:
   a) Discuss the relationship among the various hardware and software components of a computer system
   b) Operate a microcomputer in a "Hands On" mode. This includes working with the operating system and using several of the most widely used applications.
   c) Discuss the evolution of computers in both the mainframe and personal computer fields

2) THINKING SKILLS: Gain an understanding of the kinds of problems that Java applets or applications are best suited to solve

3) COMMUNICATIONS SKILLS: Discuss, define and describe using current technical terms, one's working knowledge of learning aids and support tools that help programmers develop robust coded solutions

4) HUMAN DIVERSITY: Discuss, define and describe using current technical terms, one's
Working knowledge of learning aids and support tools that help programmers develop robust coded solutions

TOPICS TO BE COVERED:
Introduction to Computers, the Internet and the Web
Introduction to Java Applications
Introduction to Java Applets
Introduction to Java Swing Components
Control Structures: Part 1
Control Structures: Part 2
Methods
Arrays
Object-Based Programming
Object-Oriented Programming
Strings and Characters
Graphics and Java2D

LIST OF EXPECTED COURSE OUTCOMES:
The student will master the introductory key components of the Java programming language as well as contemporary programming paradigms.

1. The student will be able to manipulate the interactive development environment and/or the JDK to create, edit, compile, debug and save designed application source code and a Java Applet

2. The student will become familiar with fundamental data types, arithmetic operators and their order of precedence

3. The student will develop algorithms with the notion of top-down, stepwise refinement employing control structures effectively to produce programs that are understandable, debuggable and maintainable over time

4. The student will acquire knowledge of the common math methods available from the Java API, create new methods and understand the mechanisms used to pass information between methods

5. The student will be able to structure homogeneous data into arrays both single-subscripted and double-subscripted, and investigate various array manipulations; populating, printing, sorting, and the passing and searching of arrays

LEARNING/TEACHING TECHNIQUES used in the course are:
Collaborative Learning Problem Solving
Student Presentations Interactive Lectures
Creative Projects Individual Coaching
Lecture Films/Videos/Slides
Demonstrations Other (describe below), Lab
ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:
Reading Tests Individual Projects
Oral Presentations Worksheets Collaborative Projects
Textbook Problems Papers Portfolio
Group Problems Term Paper
Other (describe below)

EXPECTED STUDENT LEARNING OUTCOMES:
1. The student will be able to manipulate the interactive development environment and/or the JDK to create, edit, compile, debug and save designed application source code and a Java Applet.
2. The student will become familiar with fundamental data types, arithmetic operators and their order of precedence.
3. The student will develop algorithms with the notion of top-down, stepwise refinement employing control structures effectively to produce programs that are understandable, debuggable and maintainable over time.
4. The student will acquire knowledge of the common math methods available from the Java API, create new methods and understand the mechanisms used to pass information between methods.
5. The student will be able to structure homogeneous data into arrays both single-subscripted and double-subscripted, and investigate various array manipulations; populating, printing, sorting, and the passing and searching of arrays.

The information in this course outline is subject to revision

Veteran Services: Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or Minnesota Relay Service at 800-627-3529 or by using your preferred relay service.

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