Faculty are required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Collegewide Curriculum Committee.

DEPT.: Computer Science     COURSE NO.: 2240
NUMBER OF CREDITS: 4
COURSE TITLE: Fundamentals of Programming I
CATALOG DESCRIPTION: Emphasizes concepts that provide a fundamental background for continued study in the area of computer science. Involves high-level language programming and the use of abstraction in program design.

AUDIENCE:

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

Area : by meeting the following competencies:
Area : by meeting the following competencies:
Area : by meeting the following competencies:

PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE: CSCI 1102

LENGTH OF COURSE: 1 semester

THIS COURSE IS USUALLY OFFERED:
Every other year fall spring summer undetermined

Four goals are emphasized in course at Minnesota West Community & Technical College:

1) ACADEMIC CONTENT:
   Materials such as hands-on exercises, lecture, review questions, programming problems, terminology, chapter summaries and applicable case studies blends practical programs with learned programming concepts to provide a basic background for continuing a study in computer science.

2) THINKING SKILLS:
   Students realize the benefits of learning to program computers by developing thinking abilities to solve problems of all kinds; to break a problem into manageable parts and to think in logical ways. Programming also allows one to be creative.

3) COMMUNICATIONS SKILLS:
   Develops the ability to describe verbally and in writing the processes of program design.

4) HUMAN DIVERSITY:
   Provides an opportunity for students to work in teams to solve challenging programming problems.

TOPICS TO BE COVERED:

Introduction:
   Computer Timeline
   Computer Architecture

Overview of Languages:
   Low/High Level
Programming Processes
C++ Basics:
  Entering, Compiling and Executing a Program
  C++ Syntax and Structure
  Variables and Constants
  Math Operators
Strings and I/O Streams:
  Strings
  Character Arrays
  Console Input and Output
Selection Control Statements:
  Decision Making If Statements
  Variation If..Else, Nested Ifs
Loop Control Statements:
  For Loops
  While Loops
  Variation Do..While Loops, Nested Loops
Functions:
  Data and Functions
  Scope of variables
  Library Functions
Pointers, Enum, Structures:
  Pointers and Character Arrays
  Enum – Create Simple Data Types
  Declaring and Accessing Structures
Data File Concepts:
  Compare Sequential Access and Random Access Data Files
  File syntax Requirements
  Use of Multiple Files at Same Time
One-Dimensional Arrays:
  Initializing and Accessing Elements
  Using Template Functions
  Vector Class – Revisability, Operator Overloading
LIST OF EXPECTED COURSE OUTCOMES:
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:

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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