

JEFFERSON COLLEGE

COURSE SYLLABUS

CIS129

PROGRAMMING LOGIC

3 Credit Hours

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CIS129 Programming Logic

I. CATALOGUE DESCRIPTION

- A. Pre-requisite: Reading Proficiency
Pre- or Co-requisite: CIS125 Computer Concepts and Applications
- B. 3 Credit Hours
- C. Programming Logic prepares students with basic programming skills as a foundation for subsequent programming and web development classes in the degree plan. Students demonstrate the ability to apply basic program design and planning, pseudocode, logic, and syntax, in an integrated development environment. (F,S)

II. EXPECTED LEARNING OUTCOMES/CORRESPONDING ASSESSMENT MEASURES

Apply skills in program development and an integrated development environment	Exams Comprehensive Project
Understand data types and usage	Exams Quizzes
Create programs using C++ and use various planning and design methods	Quizzes Exams Hands-On Exercises
Demonstrate effective use of objects, variables, functions, classes, and interfaces in design and programming	Hands-On Exercises Exams
Explore and understand basic console and web applications	Hands-On Exercises Quizzes Exams
Understand program control functions	Hands-On Exercises Exams Comprehensive Project
Understand and demonstrate logic document creation, functions and procedures	Hands-On Exercises Exams Comprehensive Project
Create and modify existing code to solve problems	Hands-On Exercises Student Presentation Exams
Understand the use of arrays to solve basic programming problems	Hands-On Exercises Quizzes Exams
Recognize the interaction with clients to understand and solve business problems	Student Presentation Comprehensive Project

III. OUTLINE OF TOPICS

- A. Introduction to Programming
 - 1. Systems development Life Cycle
 - 2. Bloodshed Dev-C++
 - 3. Modularization and C++

- B. Program Planning & Design
 - 1. Program design
 - 2. Pseudocode
 - 3. Test data

- C. Data & Operators
 - 1. Data types in C++
 - 2. Constants and variables
 - 3. Data manipulation
 - 4. Assignment operators
 - 5. Data type conversions

- D. Integrated Development Environment
 - 1. Environments
 - 2. Standard input and output
 - 3. Compiler directives

- E. Program Control Functions
 - 1. Pseudocode examples for functions
 - 2. Hierarchy or structure chart
 - 3. Program control functions
 - 4. Pointer data type
 - 5. Indirection operator

- F. Introduction to Structured Programming
 - 1. Pseudocode Examples
 - 2. Design structure
 - 3. Integration of structures
 - 4. Choosing the best option

- G. Loops
 - 1. General syntax and programming examples
 - 2. While, do and for loops
 - 3. Validation

- H. If Statements
 - 1. If then else
 - 2. Relational operators
 - 3. Case structure
 - 4. Branching control structures
 - 5. Flags

- I. Advanced Selection Methods
 - 1. Nested if then else
 - 2. Case control structure

IV. METHOD(S) OF INSTRUCTION

- A. Lecture
- B. Hands-on Exercises
- C. Online Tutorials
- D. Student Presentations

V. REQUIRED TEXTBOOK(S)

Leroy Busbee. *Programming Fundamentals: A Modular Structured Approach*, Current Edition, OpenStax.

VI. REQUIRED MATERIALS

USB Flash Drive (at least 16 GB)

VII. SUPPLEMENTAL REFERENCES

Online tutorial sites and documentation

VIII. METHOD OF EVALUATION

- A. Quizzes
- B. Exams
- C. Hands-On Exercises
- D. Student Presentation
- E. Comprehensive Project

IX. ADA AA STATEMENT

Any student requiring special accommodations should inform the instructor and the Coordinator of Disability Support Services (Technology Center 101; phone 636-481-3169).

X. ACADEMIC HONESTY STATEMENT

All students are responsible for complying with campus policies as stated in the Student Handbook (see College Website <http://www.jeffco.edu>).

XI. ATTENDANCE STATEMENT

Regular and punctual attendance is expected of all students. Any one of these four options may result in the student being removed from the class and an administrative withdrawal being processed: (1) Student fails to begin class; (2) Student ceases participation for at least two consecutive weeks; (3) Student misses 15 percent or more of the coursework; and/or (4) Student misses 15 percent or more of the course as defined by the instructor. Students earn their financial aid by regularly attending and actively participating in their coursework. If a student does not actively participate, he/she may have to return financial aid funds. Consult the College Catalog or a Student Financial Services representative for more details.

XII. OUTSIDE OF CLASS ACADEMICALLY RELATED ACTIVITIES

The U.S. Department of Education mandates that students be made aware of expectations regarding coursework to be completed outside the classroom. Students are expected to spend substantial time outside of class meetings engaging in academically related activities such as reading, studying, and completing assignments. Specifically, time spent on academically related activities outside of class combined with time spent in class meetings is expected to be a minimum of 37.5 hours over the duration of the term for each credit hour.