Course Objectives/Course Outline
Spokane Community College

Course Title: **Introduction to Programming**
Prefix and Course Number: **CIS 146**

Course Learning Outcomes:
By the end of this course, a student should be able to:

- Understand the difference between weakly and strongly typed programming languages.
- Identify the five operations common to all programming languages
- Demonstrate the ability to save information using variable
- Evaluate expressions using arithmetic and Boolean logic
- Implement selection and looping structures

Course Outline:

I. Introduction
    A. What is computing?
    B. The Information Processing Cycle
    C. IPO
    D. Pseudocode
II. Categories of Programming languages
    A. Compiled vs Interpreted
    B. Strongly Typed vs Weakly Typed
    C. Open vs Close Source / Architecture
    D. Generations of Programming Languages
III. Object Oriented Programming
    A. Terminology
    B. Understanding Component / Modular Design
    C. N-tier Design
    D. Namespace
    E. DNA Reference Model
IV. Introduction to Course Programming Languages and Tools
    A. JavaScript
    B. Java
    C. Swift
    D. PHP
V. Writing our First Program
    A. JavaScript
    B. Java
    C. Swift
    D. PHP
VI. Introduction to Source Control
VII. Variables
    A. Numeric
    B. String

           C.   Boolean
           D.   Casting
           E.   Scope

VIII.   Algorithms / Formulas
           A.   Assignment statements vs Algebraic Equations
           B.   Order of Calculation – Native
           C.   Order of Calculation – Parenthesis Controlled
           D.   Math Tools

IX.   Designing / Planning Your Program
           A.   Tools/Techniques
           B.   Pseudocode
           C.   Ethical Considerations

X.   Understanding Boolean Logic
           A.   If/Then
           B.   Nested If/ Then
           C.   Else If
           D.   Switch

XI.   Looping Structures
           A.   While/Do/Repeat
           B.   Pre-Test vs Post Test
           C.   For Loops

XII.   Debugging Techniques

XIII.   Arrays and Collections
           A.   For Each Loops