

Course Objectives/Course Outline
Spokane Community College

Course Title: Computer Math

Prefix and Course Number: CIS 108

Course Learning Outcomes:

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

- Understand and apply basic computer math principles for networking and software development.

Course Outline:

- I. Algebra Fundamentals
 - A. Roots, Powers and Exponents
 - B. Fractions and Literal Numbers
 - C. Equations and Formulas
 - D. Zero and Order of Operations
 - E. Scientific Notation Linear Equations
 - F. Factoring Algebraic Expressions
 - G. Fractional Equations
 - H. Transposition
 - I. Understand, convert and solve story problems
- II. Boolean Logic
 - A. Premise and necessity of Logic
 - B. Arguments
 - C. Understand and apply the Boolean operator AND
 - D. Understand and apply the Boolean operator OR
- III. Numbering Systems
 - A. Understanding Base 10, Base 2, Base 8 and Base 16 numbering system
 - B. Convert hexadecimal and binary to decimal
 - C. Convert decimal to hexadecimal and binary
 - D. Convert hexadecimal to binary using nibbles
 - E. Bit shifting
 - F. Understand a bit, a nibble, and a byte
 - G. Decimal and binary prefixes and powers of 10
- IV. Data
 - A. Data Types
 1. Bit, bite, word, double word, integer, string
 - B. How to show data through graphing 6-3
 - C. Coordinate systems and graphing
 - D. Substitution of Data into Formulas
- V. Troubleshooting/Problem Solving
 - A. Use formal methods to troubleshoot/problem solve
 - B. Break down complex problems into several easier problems
 - C. Verify the solution to a problem

D. Diagrams

1. Use graphic, charts, graphs, flowcharts, etc. in problem solving
2. Create a useful diagram
3. Follow a diagram for troubleshooting

E. Apply Mathematical logic in troubleshooting/problem solving