Course Objectives/Course Outline
Spokane Community College

Course Title:	**Computer Math**
Prefix and Course Number:	**CIS 106**

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

– Understand and apply basic computer math principles used in network design and administration.

I. Basic Networking Addressing Concepts
   A. Express a MAC address in hexadecimal
   B. Understand an octet
   C. Identify an IPv4 address (dotted decimal octet)
   D. Identify the network, subnet and host portion of an IP address
   E. Define a Subnet mask
   F. Convert an IPv4 address from binary to decimal and back
   G. Using ANDing identify the network a host belongs to given the IPv4 address and the subnet mask
   H. Express an IPv6 address in hexadecimal
   I. Convert an IPv6 address to binary
   J. Know the rules for abbreviation of an IPv6 address
   K. Recognize an IPv6 address and the type of address it is (ie: prefix:subnet ID:Interface ID, global unicast, multicast, anycast)
   L. Determine if an IPv6 address was derived through static or auto configuration
   M. Know the rules for abbreviation of an IPv6 address
   N. Apply the OSI model in network troubleshooting/problem solving

II. Computer programing concepts
   A. CMD [Syntax](#)
   B. Scripting / PowerShell