

SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

**ACADEMIC AFFAIRS**

Course Number: PROG 413 Department: Information Technologies

Course Title: Networks 2 Semester: Fall Year: 1999

**Objectives/Competencies**

<b>Course Objective</b>	<b>Competencies</b>
1. To demonstrate proficiency in the use and theory of communication protocols.	<ol style="list-style-type: none"><li>1. Be able to explain the seven layers of the OSI model.</li><li>2. Describe the layers of the OSI model that TCP/IP use for communication.</li><li>3. Explain the different classes of IP addresses</li><li>4. Mathematically Breakdown each class as to how many clients each class can utilize.</li><li>5. Mathematically Breakdown the number of subnets each class can utilize.</li><li>6. Describe what subnetting is and the appropriate uses for subnetting.</li><li>7. List how each class of IP addresses can be subnetted.</li><li>8. Mathematically show how base 10 numbers can be converted to base 2 numbers.</li><li>9. Mathematically show how base 2 numbers can be converted to base 10 numbers.</li><li>10. Perform various real life scenario problems when a company has a certain IP license and need to segment the network, the student must be able to solve this scenario by</li></ol>

Course Objective	Competencies
<p>2. Have students perform hands-on NOS installations to obtain the following competencies.</p>	<p>subnetting the IP addresses.</p> <ol style="list-style-type: none"> <li>11. Demonstrate how to troubleshoot IP problems in many real life scenarios.</li> <li>12. Demonstrate using many of the application tools used to troubleshoot IP problems.</li> <li>13. Demonstrate how IP addresses are used when messages of sent via LAN'S and WAN's.</li> <li>14. Demonstrate using routing tables and how IP addresses are used to route messages.</li> </ol> <ol style="list-style-type: none"> <li>1. Install a Network Operating Systems</li> <li>2. Upgrade/patch a server.</li> <li>3. Implement a TCP/IP addressing scheme on a small network.</li> <li>4. Set up a DHCP server to properly assign IP addresses.</li> <li>5. Demonstrate how to set up other Network related services like WINS, DNS and RAS. These services should be installed from media and configured to work on an existing network.</li> <li>6. Demonstrate an advanced level of file management skills and applications installation skills.</li> <li>7. Demonstrate successful administration of an NOS by adding monitoring network activity and starting/stopping a network server with minimal disruption.</li> <li>8. Demonstrate successful use of the internet to obtain software necessary to perform above mentioned tasks.</li> </ol>
<p>3. Demonstrate advanced networking design skills.</p>	<ol style="list-style-type: none"> <li>1. Solve a particular networking problem.</li> </ol>

<b>Course Objective</b>	<b>Competencies</b>
	<ol style="list-style-type: none"><li>2. Research and price up the networking components, including both the hardware and software solutions.</li><li>3. Analyze designs to ensure it solves the networking concerns specified in the initial problem.</li></ol>