SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

ACADEMIC AFFAIRS

Course Number: PROG-360 Department: INFT

Course Title: Adv. Operating Systems w/Linux Semester: Fall Year: 2003

Course Objective	Competencies
1. To understand the advanced tasks that operating systems perform. 2. To under how to set up and manage a LINUX environment that provide core support services like email, DNS and DHCP. 3. To obtain an advanced knowledge of Linux. 4. To use many of Linux' tools from both a command line and GUI perspective. 5. To be able to administer a Linux server and to start looking at computer management from an administrators perspective.	• Configure a network device to connect to a local network • Configure a network device to connect to a wide-area network • Communicate between subnets within a single network • Configure authentication protocols (PAP) • Configure authentication protocols (CHAP) • Configure TCP/IP logging • Advanced network configuration and troubleshooting • Configure a network device to implement authentication • Configuring a virtual private network • Resolving networking and communication problems • Configuring mailing lists • Using sendmail • Managing sendmail • Email aliases • Mail quotas • Virtual mail domains • Configuring internal mail relays • Monitoring SMTP severs

Course Objective	Competencies
	• Managing mail traffic • Implementing client mail management software to filter mail • Implementing client mail management software to monitor incoming user mail • Basic BIND 8 configuration • Configure BIND to function as a caching only DNS server • Convert a BIND 4.9 named.boot file to the BIND 8.x name.conf • Format and reload the DNS by using kill or ndc • Configuring DNS logging • Configuring BIND options • Configuring directory location for zone files • Create and maintain DNS zones • Create a zone file for a forward zone • Create a zone file for a reverse zone • Create a zone file for a root level server • Setting appropriate values for the SOA resource record • Setting appropriate values for the NX records • Setting appropriate values for the MX records • Adding hosts with a A resource records • Adding hosts with a A resource records and CNAME records • Adding the zone to the /etc/named.conf file using the zone statement • Adding hosts to reverse zones the PTR records

Course Objective	Competencies
	• Delegate a zone to another DNS server • Dig • Nslookup • Host Securing a DNS server • Implementing a web server • Install and configure an Apache web server • Monitoring Apache load and performance • Restricting client user access • Configuring Apache server options • Maximum request • Httpd.conf • Maintaining a web server • Configure Apache to use virtual hosts • Creating an SSL certification of Apache using Open SSL • Defining SSL definitions in configuration files using OpenSSL • Customizing file access by implanting redirect statements in Apache's configuration files • Implementing a proxy server • Install a proxy server using Squid • Configure a proxy server using Squid • Implementing access policies • Setting up authentication • DHCP configuration • What is DHCP • Static hosts

Course Objective	Competencies
	• Dynamic hosts • Dhcpd.conf. • Dhcpd.leases • PAM authentication • Configuring PAM • Pam.conf and /etc/pam.d • IP chains • Packet filtering rules • Network address translation (NAT) • IP tables • Securing FTP servers • Setting up FTP • Configuring FTP access restriction • Anonymous FTP • Anonymous uploads • Chroot • Secure shell (Open SSH) • How SSH works • Sshd • Generating keys • Port forwarding • TCP wrappers • Security need for TCP wrappers • Port scanning with nmap • Troubleshooting network issues

Course Objective	Competencies
	• Ifconfig • Route • netstat • traceroute • Nslookup and dig • dmesg