**FLORIDA VOCATIONAL INSTITUTE**

**PROGRAM SYLLABUS**

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**PROGRAM TITLE: Review Date:**

**IT Security and Cloud Professional Engineer**  **TBD**

**Program Objective/Description:**

As a IT Security and Cloud Professional, you are able to validate your ability to handle day-to-day management of the server operating system, file structure, and directory services. You will also learn to handle software distribution and updates; monitor servers; provide troubleshooting support; build and configure servers; implement auditing policy; perform scheduled vulnerability-assessment scans; and monitor logs for firewalls and intrusion-detection systems. At the completion of this program you are qualified to manage, support, and troubleshoot information systems in a wide range of computing environments with Microsoft Windows Server 2012 and Linux. Additionally, the course will provide the concepts, commands, and practice required to configure Cisco switches and routers in multi-protocol Internet works. Finally, students also get an introduction to the 21st century could-based systems administration on Azure and AWS. This course is based on lectures, discussions, demonstrations, exercises, and laboratory projects. Students perform all basic configuration procedures to build LAN and WAN interfaces for the most commonly used routing and routed protocols.

**Certification Preparation**: Students will be equipped to sit for the following certification exams: Network+, Security+ and Window Server Administration Fundamentals (MTA-365). In addition, the curriculum will also cover a portion of Cisco CCNA and CompTia Cloud+.

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**TRAINING OBJECTIVE**:

To obtain the CompTIA Security +, Network+, Linux+, and Microsoft MTA-365 Certifications.

## Program Breakdown by Course

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| --- | --- | --- | --- | --- | --- |
| **Course Code** | **COURSE TITLE** | **Semester Credit Hours** | **Theory**  **Hours** | **Lab Hours** | **Total**  **Hours** |
| CDA0100 | A+ | 2.0 | 15 | 45 | 60 |
| CDA1000 | Introduction to Networking | 2.0 | 15 | 45 | 60 |
| CDA1010 | Network + | 2.0 | 15 | 45 | 60 |
| CDA1100 | Security+ | 2.0 | 15 | 45 | 60 |
| CDA2000 | Cisco Routing and Switching I | 2.0 | 15 | 45 | 60 |
| CEN1000 | Introduction to Windows Server | 2.0 | 15 | 45 | 60 |
| CEN1200 | Linux I | 2.0 | 15 | 45 | 60 |
| CEN1210 | Linux II | 2.0 | 15 | 45 | 60 |
| CEN1010 | Administering Windows Servers | 2.0 | 15 | 45 | 60 |
| CEN2000 | Cloud Technology | 2.0 | 15 | 45 | 60 |
| CEN2100 | Project Management Essentials | 2.0 | 15 | 45 | 60 |
| CDA2100 | Cisco Routing and Switching II | 2.0 | 15 | 45 | 60 |
|  | **Total** | **24.0** | **180** | **540** | **720** |

**CDA0100 A+**

**(15 Theory/Clock Hours/45 Lab Hours/0 Externship Hours/2 Credit Hours)**

Students will learn the fundamental components and functions of computer technology, networking, and security. They will also gain the skills required to identify hardware, peripheral, networking, and security components. In addition, they will learn to install, configure, upgrade, and maintain PC workstations, the Windows OS and SOHO networks. Students will utilize troubleshooting techniques and tools to effectively and efficiently resolve PC, OS, and network connectivity issues and implement security practices.

**CDA1000 Intro to Networking**

**(15 Theory/Clock Hours/45 Lab Hours/0 Externship Hours/2 Credit Hours)**

Students will learn to identify the basic components of network theory, major network communications methods, and network data delivery methods. They will be able to list and describe all network media and hardware components, including becoming knowledgeable on the specific differences between TCP/IP, LAN, and WAN network implementations. Students will learn the services deployed on each major type of network implementation as well as identify the primary network operating systems. Students will study important network protocols, technologies in network security, and data storage technologies. They will also gain the skills to identify major issues, models, tools, and techniques in network troubleshooting and disaster recovery.

**CDA1010 Network+  
(15 Theory/Clock Hours/45 Lab Hours/0 Externship Hours/2 Credit Hours)**

In this unit, students will employ the knowledge and skills acquired during the previous unit in solving real world scenarios of networking problems as well as training and preparing for the certification examination.

**CDA1100 Security+**

**(15 Theory/Clock Hours/45 Lab Hours/0 Externship Hours/2 Credit Hours)**

Upon successful completion of this course, students will be able to identify fundamental concepts of computer security, major security threats and vulnerabilities, and network security. Students will gain the skills to manage application, data, and host security by accessing control, proper authentication, and thorough account management. They will also learn to manage certificates. In addition, topics such as compliance & operational security, risk management, and disaster recovery planning will also be covered in this course.

**CEN1000 Introduction to Windows Server**

**(15 Theory/Clock Hours/45 Lab Hours/0 Externship Hours/2 Credit Hours)**

This course introduces enterprise server concepts in a platform agnostic way and also moves on to the specific environment of Windows Server 2012. You will learn how to establish and manage a basic Windows Server® 2012 environment, including the designation, control and deployment of group Policy Objects to authorize the use of various local resources.

**CEN1010 Administering Windows Servers**

**(15 Theory/Clock Hours/45 Lab Hours/0 Externship Hours/2 Credit Hours)**

This course focuses on advanced aspects of Active Directory and GPO management as well as introducing the configuration and management of advanced Windows Server Services such as DHCP, DNS, Remote Access, File and Print services, etc.

**CEN1200 Linux I**

**(15 Theory/Clock Hours/45 Lab Hours/0 Externship Hours/2 Credit Hours)**

This course focuses on introducing the student to Linux and equipping them with the tools necessary to manage users, groups, permissions and software packages on a Linux Server. The course also takes students through exercises and drills necessary for them to be equipped to sit for the Linux+ certification exam.

**CEN2000 Survey of Cloud Technology**

**(15 Theory/Clock Hours/45 Lab Hours/0 Externship Hours/2 Credit Hours)**

This course provides a conceptual introduction to the SaaS, IaaS and PaaS models of cloud. It also shows student how to set up several IaaS and PaaS services on AWS, including but not limited to identity management and multifactor authentication on AWS IAS, AWS S3 storage, AWS glacier backups, content delivery networks on Cloud Front, custom functions on AWS lambda, and provisioning virtual machines on the AWS elastic beanstalk. We also provide students with free Azure credits to get them started deploying and configuring several types of pre-set windows and Ubuntu virtual machines on Azure.

**CDA2000 Cisco Routing and Switching I**

**(15 Theory/Clock Hours/45 Lab Hours/0 Externship Hours/2 Credit Hours)**

This course provides an introduction to Cisco Routing and Switching. After completing this course, the student should be able to: analyze campus network designs; implement VLANs; spanning tree and inter-VLAN routing in a network campus; implement high-availability technologies and techniques using multilayer switches in a campus environment; implement security features in a switched network; and integrate WLANs into a campus network and accommodate voice and video in campus networks.

**CDA2100 Cisco Routing and Switching II**

**(15 Theory/Clock Hours/45 Lab Hours/0 Externship Hours/2 Credit Hours)**

Upon successful completion of this course, you will be able to meet the following objectives: plan routing services to meet requirements; implement an EIGRP-based solution; implement a scalable multiarea Network OSPF-based solution; implement an IPv4-based redistribution solution; implement Path Control; and implement and verify a Layer 3 solution using BGP to connect an enterprise network to an internet service provider.

**CEN1210 Linux II**

(**15 Theory/Clock Hours/45 Lab Hours/0 Externship Hours/4 Credit Hours)**

This course will teach you how to design, deploy and maintain a network running under Linux and to administer the network services most commonly found in enterprise environments. In this four day course you’ll learn the skills, tools and knowledge to fully design, implement and operate a network with any major Linux distribution. You will learn how to configure the system network interfaces in a reliable and optimal way while constantly keeping security aspects in mind. You will also gain hands-on experience with the deployment and configuration of several important network services, such as file, web, email and name servers using reference implementations that are commonly found in large enterprise environments.

**CEN2100 Project Management Essentials and Cloud Technology 2**

**(15 Theory/Clock Hours/45 Lab Hours/0 Externship Hours/2 Credit Hours)**

Upon successful completion of this course, students will be able to identify the key processes and requirements of project management including initiating a project, planning time and cost, managing a project, and proper execution. This course also reviews and analyzes the features of Office 365 and identifies recent improvements to the service. Students will be able to identify the challenges in deploying Office 365 as well as the benefits of the FastTrack approach compared to the traditional plan/prepare/migrate deployment process. They will also examine how to plan the pilot, provision tenant accounts and finally, verify that clients can connect to the Office 365 service.  Students will also learn about the Microsoft Azure platform and gain a basic understanding of the services offered.