

Afghanistan Technical Vocational Institute



د افغانستان د تخنیکي مسلکي زده کړو انستیتوت
AFGHANISTAN TECHNICAL VOCATIONAL INSTITUTE
انستیتوت تعلیمات تخنیکي مسلکي افغانستان

**Information and Communication Technology
Department**

(ICT)

Short-Term Training Courses Unit

2016

Course Name: CCNP (Cisco Certified Network Professional)

Course Fees and Duration Information		
Track	Regular Track	Weekends
Duration	90 workings days	90 working days
Hours	180 Hours	180 Hours
Training Fees		

Course Description:

Cisco Certified Network Professional (**R&S**) is the professional level certifications for candidates aspiring to be come in Routing and Switching technologies competent. After the completion of **CCNP** Training, candidates will be able to plan, implement, verify and troubleshoot local and wide-area enterprise Cisco Networks. **The CCNP (R&S) certification Training** package consists of training on three varied modules i.e. **Route, Switch and TShoot** described below:

- **ROUTE:** This training module covers in depth study and practical training about IP Routing. You will get with concepts like planning, building and testing safe LAN and WAN solutions suing various types of routing protocols like EIGRP, OSPF, RIP and BGP.
- **SWITCH:** This training module include deep theoretical and practical knowledge on planning, building and executing enterprise switching solutions with the help of switching technologies such as VLAN, STP, VTP, RSTP, MSTP, Ether-Channel, GLBP,HSRP,VRRP etc.
- **TSHOOT:** In this module candidates learn how to troubleshoot and maintain IP networks. This includes usage of technological yet applicable approaches to troubleshoot various networks and internetworks.

Course Outline: CCNP SWITCH (300-115)

- **Part I: Designing Campus Networks**
 - **Chapter 1: Enterprise Campus Network Design**
 - Hierarchical Network Design
 - Modular Network Design
 - **Chapter 2: Switch Operations**
 - Layer 2 Switch Operations
 - Multilayer Switch Operations
 - Tables Used in Switches
 - Managing Switch Tables
 - **Chapter 3: Switch-Port Configuration**
 - Ethernet concepts
 - Connecting Switches and Devices
 - Switch-Port Configuration
 - Discovering Connected Devices
 - Using Power Over Ethernet (PoE)

- **Part II: Building Campus Network**
 - **Chapter 4: VLANs and Trunks**

- Virtual LANs
 - VLAN Trunks
 - VLAN Trunk Configuration
 - Troubleshooting VLANs and Trunks
 - Voice VLANs
 - Wireless VLANs
 - **Chapter 5: VLAN Trunking Protocol**
 - VLAN Trunking Protocol
 - VTP Configuration
 - VTP Pruning
 - Troubleshooting VTP
- **Part III: Working With Redundant Links**
 - **Chapter 6: Traditional Spanning-Tree Protocol**
 - IEEE 802.1D Overview
 - Types of STP
 - **Chapter 7: Spanning-Tree Configuration**
 - STP Root Bridge
 - Tuning Spanning-Tree Convergence
 - Redundant Link Convergence
 - Monitoring STP
 - **Chapter 8: Protecting Spanning-Tree Topology**
 - Protecting Against Unexpected BPDUs
 - Protecting Against Sudden Loss of BPDUs
 - Using BPDU Filtering to Disable STP on a Port
 - Troubleshooting STP Protection
 - **Chapter 9: Advanced Spanning-Tree Protocol**
 - Rapid Spanning-Tree Protocol
 - Multiple Spanning-Tree Protocols
 - **Chapter 10: Aggregating Switch Links**
 - Switch-Port Aggregation with Ether-Channel
 - Ether-Channel Negotiation Protocols
 - Ether-Channel Configuration
 - Troubleshooting Ether-Channel
- **Part IV: Multilayer Switching**
 - **Chapter 11: Multilayer Switching**
 - Inter-VLAN Routing
 - Verifying Multilayer Switching
 - **Chapter 12: Configuring DHCP**
 - Using DHCP with a Multilayer Switch
 - Configuring DHCP to support IPv6
- **Part V: Monitoring Campus Networks:**
 - **Chapter 13: Logging Switch Activity**

- Syslog messages
- Adding Time Stamps to Syslog Messages
- **Chapter 14: Managing Switch with SNMP**
 - SNMP Overview
 - SNMP Configuration
- **Chapter 15: Monitoring Performance with IP SLA**
 - IP SLA Overview
 - Configuring IP SLA
 - Using IP SLA
- **Chapter 16: Using Port Mirroring to Monitor Traffic**
 - Using Local SPAN
 - Remote SPAN
 - Managing SPAN sessions
- **Part VI: Implementing High Availability**
 - **Chapter 17: Understanding High Availability**
 - Leveraging logical Switches
 - Supervisor and Route Processor Redundancy
 - **Chapter 18: Layer 3 High Availability**
 - Packet forwarding review
 - Hot Standby Router Protocol
 - Virtual Router Redundancy Protocol
 - Gateway Load Balancing Protocol
 - Verifying Gateway Redundancy
- **Part VII: Securing Switched Networks**
 - **Chapter 19: Securing Switch Access**
 - Port Security
 - Port-Based Authentication
 - Using Storm Control
 - Best Practices for Securing Switches
 - **Chapter 20: Securing VLANs**
 - VLAN Access Lists
 - Private VLANs
 - Securing VLAN trunks
 - **Chapter 21: Preventing Spoofing Attacks**
 - DHCP Snooping
 - IP Source Guard
 - Dynamic ARP inspection
 - **Chapter 22: Managing Switch users**
 - Configuring Authentication
 - Configuring Authorization
 - Configuring Accounting