Hagerstown Community College Master Syllabus
IST-156, Networking II

Course Information
IST-156-B01, Networking II
4 Credits
19/Spring

Instructor Information

Course Description
This course describes the architecture, components, and operation of routers, switches, and explains the principles of switching, routing and routing protocols. Students analyze, configure, verify, and troubleshoot the primary routing protocols RIPv1, RIPv2, EIGRP, and OSPF. By the end of this course, students will be able to recognize and correct common routing issues and problems. Offered in conjunction with the Cisco Networking Academy. Students must have a personal computer and Internet access to complete online assignments and exams. Class also meets at least one Saturday per session per the instructor's discretion. Laboratory fee required. Prerequisite: IST 155.

Textbook and Course Materials
No Textbook

Student Learning Outcomes
- Using IOS commands and the correct cabling configure a router to forward packets with the proper interfaces, routing protocols, and transport protocols enabled.
- Troubleshoot router connectivity issues at all layers of the TCP/IP model and maintain a router and switch through IOS and configuration management.
- Provide LAN connectivity through proper switch configuration and LAN services including DHCP and NAT.
- Provide security for a network segment by drafting access control lists and configuring ACL's on the proper in/out bound interfaces.

Course Content Objectives
- Configure and verify static routing and default routing.
- Configure and troubleshoot basic operations of a small switched network.
- Configure and troubleshoot basic operations of routers in a small routed network.
- Configure and troubleshoot VLANs and inter-VLAN routing.
- Configure, monitor, and troubleshoot ACLs for IPv4.
- Configure and verify DHCPv4 and DHCPv6.
- Configure and verify NAT for IPv4.
- Configure and monitor networks using device discovery, management, and maintenance tools.

Definition of Credit Hour: Classroom Courses

To earn one academic credit at HCC, students are required to complete a minimum of 37.5 clock hours (45 fifty-minute academic hours) of coursework per semester. Those hours of coursework may be completed through a combination of hours in the classroom and hours outside the classroom. Certain courses may require more than the 37.5 minimum hours of coursework per credit. For most classes, students should expect to complete at least 2 hours of coursework outside of class for each hour of in-class coursework.

Classwork type	Direct Faculty Instruction In-class **37.5 hours required**	Student Work Out of Classroom **75 hours required**
In-class "lecture"	36 h	
Reading chapters		48 h
Practice quizzes		11 h
Test/activity for each chapter		26 h prep and completion
Mid-term Exam		5 h
Chapter assignments and webinars		14 h
Final exam prep (cumulative and skills)		10 h
Total	**36 hours**	**114 hours**

Services for students with disabilities: Students may receive reasonable accommodations if they have a diagnosed disability and present appropriate documentation. Students seeking accommodations are required to contact the Disability Support Services (DSS) office as early as possible. Students may contact a DSS staff member for an appointment at dss@hagerstowncc.edu or at 240-500-2530.