COURSE TITLE & NUMBER: Advanced Routing and Switching: CNT 1030
CREDITS: 3 (Lec 2/Lab1)
PREREQUISITES: CNT 1020: Router Theory and Router Technologies

CATALOG DESCRIPTION:
Advanced Routing and Switching covers the architecture, components, and operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks.

OUTLINE OF MAJOR CONTENT AREAS:
1. LAN Design
2. Scaling VLANs
3. STP
4. EtherChannel and HSRP
5. Dynamic Routing
6. EIGRP
7. EIGRP Tuning & Troubleshooting
8. Single-Area OSPF
9. Multi-area OSPF
10. OSPF Tuning & Troubleshooting

COURSE GOALS/OBJECTIVES/OUTCOMES:
1. Students will understand, configure and troubleshoot enhanced switching technologies such as VLANs and Rapid Spanning Tree Protocol (RSTP).
2. Students will understand, configure and troubleshoot EtherChannel.
3. Students will understand, configure, and troubleshoot first hop redundancy protocols (HSRP) in a switched network.
4. Students will understand, configure, and troubleshoot wireless routers and wireless clients.
5. Students will configure and troubleshoot routers in a complex routed IPv4 or IPv6 network using single-area OSPF, multi-area OSPF, and Enhanced Interior Gateway Routing Protocol (EIGRP).
6. Students will manage Cisco IOS software licensing and configuration files.

HCC COMPETENCIES MET:
Working Productively and Cooperatively
Communicating Clearly and Effectively

STUDENT CONTRIBUTIONS:
The student is expected to attend class regularly, participate in class discussion, complete assignments, and laboratory or design projects. The student must spend sufficient time to complete assignments.

Curriculum Committee Approval Date: April 3, 2018

AASC APPROVAL DATE: April 18, 2018
REVIEW DATE: April 2023