**COLLIN COLLEGE**

**COURSE SYLLABUS**

Course Information

**Course Number**: ITCC 1340

**Course Title:** CCNA 2: Routing and Switching Essentials

**Course Description:** Describes the architecture, components, and basic operation of routers and explains the basic principles of routing and routing protocols. It also provides an in-depth understanding of how switches operate and are implemented in the LAN environment for small and large networks. Additionally, students analyze, configure, verify, and troubleshoot the primary routing protocols and OSPF. Recognize and correct common routing issues and problems. Model and analyze routing processes. This course describes the architecture, components, and operation of switches, and explains the principles of switching, VLANs and Inter-VLAN routing. The essentials of security, address translation and DHCP are also described. Use discovery protocols to map a network topology. Configure Syslog in a small to medium-sized business network. Maintain router and switch configuration and IOS files. Lab required.

**Course Credit Hours:** 3

Lecture Hours: 2

Lab Hours: 3

**Prerequisite:**  ITCC 1314

**Student Learning Outcomes:**

* **State-mandated Outcomes:** Upon successful completion of this course, students will:

1. Configure and maintain routers and switches.
2. Resolve common issues with routing protocols, virtual LANS, and inter-VLAN routing in both IPv4 and IPv6 networks.

* **Additional Collin Outcomes:** Upon successful completion of this course, students will:

1. Describe the purpose, nature, and operations of a router.
2. Describe the purpose and nature of routing tables.
3. Describe the purpose and procedure of configuring static routes.
4. Describe the basis features and concepts of switching and VLANs.
5. Configure and verify basic security including ACLs (access lists).
6. Design and implement a classless IP addressing scheme for a given network.
7. Describe the basis features and concepts of link-state routing protocols.
8. Configure and verify basic single area OSPF, basic NAT and DHCP operations in a small routed network.

**Withdrawal Policy:** See the current *Collin Registration Guide* for last day to withdraw.

**Collin College Academic Policies:** See the current *Collin Student Handbook.*

**Americans with Disabilities Act Statement:** Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student’s responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

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