Building Scalable Networks – Cisco V, CST 2314,
Course Philosophy and Instructor Requirements

**Philosophy:** This course is designed to establish an advanced level of knowledge concerning Routing technologies used within the computer networking industry.

**Instructor Objectives:** The instructor’s teaching techniques should prepare the students to:
- Understand advanced technology features and its place in our world
- Implement EIGRP into a network using advanced components and operations; verify/troubleshoot its functionality; configure authentication; and implement EIGRP into the Enterprise.
- Implement OSPF into a network and verifying/troubleshooting its functionality; configure authentication; use OSPF in an NBMA network; understand OSPF network types; configure multi-area OSPF; and use virtual links and summarization within an OSPF environment.
- Understand IS-IS fundamentals, along with ISO addressing; IS-IS operations; IS-IS configuration; optimize the process; and verify and troubleshoot as necessary.
- Incorporate route optimization into a network while using multiple routing protocols; configure route redistribution; successfully update traffic; use policy-based routing techniques; and configure DHCP.
- Understand the framework of BGP; work with/configure EBGP and IBGP; verify proper configuration; understand the BGP path selection process; and work with route maps.
- Define IGMP & Layer 2 issues; work with routing protocols that use Multicast addressing procedures; and configure and verify IP Multicasting.
- Have a complete understanding of IPv6 addressing; work with IPv6 addressing in a dynamic setting; understand routing IPv6 packets; configure and verify IPv6 operations with OSPFv3; and configure a mixture of IPv6 and IPv4 within one network.

**Course Teaching Requirements:** The following should be followed by all instructors teaching this course (online and in the traditional setting).
- All chapters within the text should be covered. The course will flow much easier if the instructor will cover the chapters in order. It is not mandatory that all of the chapter exams be given. It is the instructor’s choice as to which exams to issue.
- It is necessary for the instructor to provide detailed guidance of the proper configuration of EIGRP, OSPF, IS-IS, route optimization methods, DHCP, BGP, and IPv6 throughout the course.
- A comprehensive hands-on skills-based assessment must be given at the end of the semester. This component must count for at least 20% of the course grade and must be proctored. Each student must successfully pass this assessment with a grade of “D” or better to successfully pass the course.
- All students must take the comprehensive final exam created by Cisco. This exam is located on the Cisco Networking Academy web site. This component must count for at least 20% of the course grade and must be proctored.

**Assessment Responsibilities:** Instructors teaching this course (online and traditional) will be expected to participate in assessment activities as dictated by the division. You will be given
further information/instructions by the lead instructor during the term assessments are to be completed.

**Computer Systems and Networking Technology Department Contact Information:**

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**Lead Instructor:** Same as above