

Oklahoma State University Institute of Technology
Online Common Syllabus
Spring 2018

ITD3153 LAN/WAN Routing & Switching

An advanced course on the design, configuration, and maintenance of switches, routers, virtual and local-area networks (VLANs and LANs), and wide-area networks (WANs). Topics include: VLAN and LAN operation and troubleshooting, WAN operation and troubleshooting, and advanced routing protocols, and switching.

Course Purpose:

This course focuses on the requirements and knowledge needed to successfully complete the Cisco CCNA Routing and Switching (ICND2) certification exam.

Type of course: Theory/Lab

Credit Hours: 3; Total hours of theory per semester: 30;

Total hours of lab for the semester: 45; Total hours of clinical per semester: 0.

Class length - Full Semester

Class format – Fully Online

Required synchronous meetings: None

Prerequisites: ITD2133 Network Support Management

Instructor Name: Dr. Fil Guinn

Instructor Phone: (918) 293-5428

Office: EET/IT, Room 15C

Instructor email: fil.guinn@okstate.edu

Contact: My preferred method of contact is **email**. Please allow 24-48 hours to return your correspondence during the normal work week.

Instructor's Office Hours: Tuesday and Wednesday 6:30 – 8:30 PM (Online, Phone and Email), Tuesday & Thursday 1:00 – 3:30 PM (On Campus) PLUS should be available in my office during the Study Hall, Monday-Thursday, 3-4PM, Central Time

School: Information Technologies

School's Main Phone: 918-293-5440

Required Text, References, and Materials

Texts: Cisco CCNA Routing and Switching ICND2 200-105 Official Cert Guide and Simulator Library, Wendell Odom, ciscopress.com, ISBN 9781587206740

References: Assorted Subject Videos

Materials: Access to a computer with broadband Internet Access (2Mbps upload preferred)

Uniform/Tools: None

Estimated Cost for Materials: \$ 150.00

Estimated Cost for Uniform/Tools: \$ None

Optional Resources: N/A

Upon completion of the course, students should:

| Course Objectives | Assessment of Objectives | |
|---|---------------------------------|-----|
| Design, implement, manage, or maintain scalable networks using enterprise level, physical and virtual, network classifications, topologies, or communication models | *Course Project | C.2 |
| communicate in a professional manner in both IT technical and non-technical presentations in live and/or recorded formats | *Course Project | F.2 |
| demonstrate knowledge of IT trends and issues | *Course Project | G.1 |
| conduct network administration, maintenance, diagnostics, or testing | Simulated network labs | J.1 |
| troubleshoot PC or network hardware issues or software errors based on scenarios to the resolution of the issue | Simulated network labs | M.1 |

Aspects of the course objective assessments may be used in the university's assessment of student learning. If applicable, an asterisk (*) above indicates this assignment is used in the university assessment program.

COURSE ACTIVITIES

In this course students will:

- Participate in online discussions and activities
- Use the simulation software to complete labs
- Reply to chapter questions and definitions
- View course specific video presentation
- Complete a research project
- Participate in an individual presentation
- Compile a portfolio of work produced

EVALUATION - GRADES WILL BE BASED ON THE QUALITY AND COMPLETION OF THESE TASKS:

| | |
|------------------------|-------------|
| Discussions | 10% |
| Faculty Contact..... | 5% |
| Simulation Labs | 30% |
| Chapter Questions..... | 30% |
| *Project Phase 1 | 10% |
| *Project Phase 2..... | 10% |
| Portfolio | 5% |
| Total | 100% |

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| OSUIT Grading Scale A = 90%-100% B = 80%-89% C = 70%-79% D = 60%-69% F = 59% & below |
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*The student's grade for this assignment will be used in the university's assessment of student learning. A 70% competency or higher receives a Pass rating. This Pass/Fail rating is independent of the student's course grade.

Daily and/or weekly quizzes, small weekly assignments and similar type projects: Normal return time to student by next class meeting or no later than one (1) week.
Extensive assignments, large lab projects, extensive quizzes, exams and similar type projects: Normal return time to students in one (1) to two (2) weeks.

RECOMMENDED STUDENT COMPETENCIES/SKILLS

Recommended student skills needed for success are the following:

- Ability to read and follow step by step instructions within the course site
- Ability you complete all required assignments within the allotted time
- Ability to research related topics and use MLA formatted in-text citations
- Ability to build a MLA formatted Work Cited page for all research cited

AUTHORIZED TOOLS

Students may use any/all course materials, including books and notes, while participating in online classroom activities. All quizzes, labs, and written assignments are to be completed independently and any instance of collaboration will be considered academic dishonesty. Collaboration with classmates while studying concepts and network configurations is permitted and encouraged.

Late Work

Turning in your properly-executed work early is always acceptable. All exams, assignments, papers and projects must be completed and submitted by the specified due date; late work will not be accepted after the due date unless prior authorization is given.

If the faculty member grades an assignment you have submitted before the due date, you do not have the ability to modify the assignment to increase your grade. Any additional submissions will not be opened, so make sure you are ready to submit your assignments and accept the grade you are given.

Testing

Quizzes may be timed or proctored during this course.

OTHER LAB AND CLASSROOM POLICIES

N/A

ONLINE COURSE INTERACTION

OSUIT requires all online courses to include interaction between students, peers and instructors. Our online courses use a variety of tools to build a community of learners and strengthen engagement between students and their peers, as well as between students and the instructor. Communication tools used in courses may include Discussion, News, and Email. Read the syllabus completely to determine which of these

methods you, your classmates and your instructor will use for interaction. General guidelines for student conduct while interacting within an online course include: (1) Use proper language in all communications; (2) Harassment of any type will not be tolerated; (3) No jokes, insults or threats of an offensive nature.

For more information, go to: <http://osuit.edu/center/netiquette>

SYLLABUS ATTACHMENT

View the Syllabus Attachment, which contains other important information, by visiting http://osuit.edu/center/student_syllabus_information

Course Schedule

| Schedule | Topic | Assignment | Due Date |
|-----------------|--|---|------------------|
| Week 1 | Module 1 Implementing Ethernet Virtual LANs & Spanning Tree Protocol Concepts | Chapter 1 network simulator labs. Chapters 1 & 2 end of chapter questions, Discussion Board responses | 1/7/2018 |
| Week 2 | Module 2 Spanning Tree Protocol Implementation & LAN Troubleshooting | Chapter 3 & 4 network simulator labs. Chapter 3 end of chapter questions, Discussion Board responses | 1/14/2018 |
| Week 3 | Module 3 VLAN Trunking Protocol & Miscellaneous LAN Topics | Chapter 5 network simulator labs. Chapter 5 & 6 end of chapter questions, Faculty contact | 1/21/2018 |
| Week 4 | Module 4 Understanding OSPF Concepts & Implementing OSPF for IPv4 | Chapter 8 network simulator labs. Chapter 7 & 8 end of chapter questions, Discussion Board responses | 1/28/2018 |
| Week 5 | Module 5 Understanding EIGRP Concepts & Implementing EIGRP for IPv4 | Chapter 10 network simulator labs. Chapters 9 & 10 end of chapter questions, Discussion Board responses | 2/4/2018 |
| Week 6 | Module 6 Troubleshooting IPv4 Routing Protocols & Implementing External BGP | Chapter 11 & 12 network simulator labs. Chapter 12 end of chapter questions, Faculty contact | 2/11/2018 |
| Week 7 | Module 7 Implementing Point-to-Point WANs, Private WANs with Ethernet and MPLS, & Private WANs with Internet VPN | Chapters 13 and 15 network simulator labs. Chapters 13, 14, & 15 end of chapter questions, Discussion Board responses | 2/18/2018 |
| Week 8 | Module 8 Basic IPv4 Access Control Lists & Advanced IPv4 Access Control Lists | Chapters 16 & 17 network simulator labs. Chapters 16 & 17 end of chapter questions, Discussion Board responses | 2/25/2018 |
| Week 9 | Module 9 | Chapter 19 network simulator labs. Chapter 18 & 19 end of | 3/4/2018 |

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| | Quality of Service (QoS) & IPv4 Routing in the LAN | chapter questions, Faculty contact | |
| Week 10 | Module 10 Implementing HSRP for First-Hop Routing & Troubleshooting IPv4 Routing | Chapters 20 & 21 network simulator labs. Chapter 20 end of chapter questions and Discussion Board responses. | 3/11/2018 |
| Week 11 | Module 11 IPv6 Routing Operation and Troubleshooting & Implementing OSPF for IPv6 | Chapters 22 & 23 network simulator labs. Chapter 23 end of chapter questions, Discussion Board responses | 3/19/2018 |
| Week 12 | Module 12 Implementing EIGRP for IPv6 & IPv6 Access Control Lists | Chapters 24 & 25 network simulator labs. Chapters 24 & 25 end of chapter questions, Discussion Board responses | 4/1/2018 |
| Week 13 | Module 13 Network Management & Cloud Computing | Chapter 26 network simulator labs. Chapters 26 & 27 end of chapter questions, Discussion Board responses Course Project Phase 1 | 4/8/2018 |
| Week 14 | Module 14 SDN and Network Programmability & Final Review | No network simulator labs. Chapter 28 end of chapter questions | 4/15/2018 |
| Week 15 | Module 15 Course Project Phase 2 & Portfolio | Course Project Phase 2 Portfolio | 4/17/2018 4/19/2018 |

Schedule is subject to change at instructor discretion.