



**LAMAR INSTITUTE  
OF TECHNOLOGY**

## CCNA 2: ROUTING AND SWITCHING ESSENTIALS (ITCC 1344 9T1)

### **INSTRUCTOR CONTACT INFORMATION**

Instructor: Steven Joiner  
Email: [scjoiner@lit.edu](mailto:scjoiner@lit.edu)  
Office Phone: 409 247 4995  
Office Location: T4 – 105 (Back Office)  
Office Hours: Tuesday/Thursday: 10:30am – 3:00pm

### **CREDIT**

3 Semester Credit Hours (2 hours lecture, 4 hours lab)

### **MODE OF INSTRUCTION**

Face to Face

### **PREREQUISITE/CO-REQUISITE:**

None

### **COURSE DESCRIPTION**

Describes the architecture, components, and operations of routers and switches in small networks and introduces wireless local area networks (WLAN) and security concepts; provides an in-depth understanding of how routers and switches operate and are implemented in the LAN environment.

### **COURSE OBJECTIVES**

Upon completion of this course, the student will be able to

- Configure, secure, and maintain routers and switches
- Resolve common issues with routing protocols, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks.
- Configure WLANs.

### **REQUIRED TEXTBOOK AND MATERIALS**

- [\*Switching, Routing, and Wireless Essentials Companion Guide \(CCNAv7\)\*](#), by Cisco Networking Academy, Cisco Press, August 2020.
  - a. ISBN for print book is 978-0-13-672935-8
  - b. ISBN for e-book is 978-0-13-672948-8.

### Recommended Textbook and Materials

- [CCNA 200-301 Portable Command Guide, 5th Edition](#), by Cisco Networking Academy, Cisco Press, 2020. *This is the 5<sup>th</sup> Edition, which aligns with the CCNAv7 certification and curriculum.*
  - a. ISBN for print book is 978-0-13-593782-2.
  - b. ISBN for e-book is 978-0-13-593770-9.

### ATTENDANCE POLICY

Please refer to the Beaumont Independent School District attendance policy in the student handbook for details.

### DROP POLICY

If you wish to drop a course, you are responsible for initiating and completing the drop process by the specified drop date as listed on the [Academic Calendar](#). If you stop coming to class and fail to drop the course, you will earn an “F” in the course.

### STUDENT EXPECTED TIME REQUIREMENT

For every hour in class (or unit of credit), students should expect to spend at least two to three hours per week studying and completing assignments. For a 3-credit-hour class, students should prepare to allocate approximately six to nine hours per week outside of class in a 16-week session OR approximately twelve to eighteen hours in an 8-week session. Online/Hybrid students should expect to spend at least as much time in this course as in the traditional, face-to-face class.

### COURSE CALENDAR

DATE	TOPIC	READINGS (Due on this Date)	ASSIGNMENTS (Due on this Date)
Week 1	Basic Device Configuration	Chapter 1 See Blackboard Calendar	Packet Tracer 1.3.6
Week 1	Configure Router Interfaces	Chapter 1 See Blackboard Calendar	Packet Tracer 1.4.7
Week 1	Verify Directly Connected Networks	Chapter 1 See Blackboard Calendar	Packet Tracer 1.5.10
Week 1	Implement a Small Network	Chapter 1 See Blackboard Calendar	Packet Tracer 1.6.1
Week 2	Switching Concepts	Chapter 2 See Blackboard Calendar	In Class Work
Week 3	VLANs	Chapter 3 See Blackboard Calendar	Packet Tracer 3.1.4
Week 3	Investigate a VLAN Implementation	Chapter 3 See Blackboard Calendar	Packet Tracer 3.2.8

Week 3	VLAN Configuration	Chapter 3 See Blackboard Calendar	Packet Tracer 3.3.12
Week 3	Configure Trunks	Chapter 3 See Blackboard Calendar	Packet Tracer 3.4.5
Week 3	Configure DTP	Chapter 3 See Blackboard Calendar	Packet Tracer 3.5.5
Week 3	Implement VLANs and Trunking	Chapter 3 See Blackboard Calendar	Packet Tracer 3.6.1
Week 4	Inter-VLAN Routing	Chapter 4 See Blackboard Calendar	Packet Tracer 4.2.7
Week 4	Configure Layer 3 Switching and Inter-VLAN Routing	Chapter 4 See Blackboard Calendar	Packet Tracer 4.3.8
Week 4	Troubleshoot Inter-VLAN Routing	Chapter 4 See Blackboard Calendar	Packet Tracer 4.4.8
Week 4	Modules 1 - 4: Switching Concepts, VLANs, and InterVLAN Routing Exam	Study Guide 1 - 4 See Blackboard Calendar	Exam 1 – 4
Week 5	STP Concepts	Chapter 5 See Blackboard Calendar	Packet Tracer 5.1.9
Week 6	EtherChannel	Chapter 6 See Blackboard Calendar	Packet Tracer 6.2.4
Week 6	Troubleshooting EtherChannel	Chapter 6 See Blackboard Calendar	Packet Tracer 6.3.4
Week 6	Implement EtherChannel	Chapter 6 See Blackboard Calendar	Packet Tracer 6.4.1
Week 6	Modules 5 - 6: Redundant Networks Exam	Study Guide 5 - 6 See Blackboard Calendar	Exam 5 - 6
Week 7	DHCPv4	Chapter 7 See Blackboard Calendar	Packet Tracer 7.2.10
Week 7	Implement DHCPv4	Chapter 7 See Blackboard Calendar	Packet Tracer 7.4.1
Week 8	SLAAC and DHCPv6	Chapter 8 See Blackboard Calendar	In Class Work
Week 8	FHRP Concepts	Chapter 9 See Blackboard Calendar	Packet Tracer 9.3.3
Week 8	Modules 7 - 9: Available and Reliable Networks Exam	Study Guide 7 - 9 See Blackboard Calendar	Exam 7 - 9
Week 9	LAN Security Concepts	Chapter 10 See Blackboard Calendar	In Class Work

Week 10	Switch Security Configuration	Chapter 11 See Blackboard Calendar	Packet Tracer 11.1.10
Week 10	Switch Security Configuration	Chapter 11 See Blackboard Calendar	Packet Tracer 11.6.1
Week 11	WLAN Concepts	Chapter 12 See Blackboard Calendar	In Class Work
Week 12	WLAN Configuration	Chapter 13 See Blackboard Calendar	Packet Tracer 13.1.10
Week 12	Configure a Basic WLAN on the WLC	Chapter 13 See Blackboard Calendar	Packet Tracer 13.2.7
Week 12	Configure a WPA2 Enterprise WLAN on the WLC	Chapter 13 See Blackboard Calendar	Packet Tracer 13.3.12
Week 12	Troubleshoot WLAN Issues	Chapter 13 See Blackboard Calendar	Packet Tracer 13.4.5
Week 12	WLAN Configuration	Chapter 13 See Blackboard Calendar	Packet Tracer 13.5.1
Week 12	Modules 10 - 13: L2 Security and WLANs Exam	Study Guide 10 - 13 See Blackboard Calendar	Exam 10 - 13
Week 13	Routing Concepts	Chapter 14 See Blackboard Calendar	Packet Tracer 14.3.5
Week 14	IP Static Routing	Chapter 15 See Blackboard Calendar	Packet Tracer 15.6.1
Week 15	Troubleshoot Static and Default Routes	Chapter 16 See Blackboard Calendar	Packet Tracer 16.3.1
Week 15	Modules 14 - 16: Routing Concepts and Configuration Exam	Study Guide 14 – 16 See Blackboard Calendar	Exam 14 - 16
Week 16	Final Exam	Final Exam See Blackboard Calendar	Final Exam

### **COURSE EVALUATION**

Final grades will be calculated according to the following criteria:

- Labs 30%
- Study Guides 10%
- Module Tests 30%
- Final Exam 30%

## **GRADING SCALE**

90 – 100	A
80 – 89	B
75 – 79	C
70 – 74	D
0 – 69	F

LIT does not use +/- grading scales

## **ACADEMIC DISHONESTY**

Students found to be committing academic dishonesty (cheating, plagiarism, or collusion) may receive disciplinary action. Students need to familiarize themselves with the institution's Academic Dishonesty Policy available in the Student Catalog & Handbook at <http://catalog.lit.edu/content.php?catoid=3&navoid=80#academic-dishonesty>.

## **TECHNICAL REQUIREMENTS**

The latest technical requirements, including hardware, compatible browsers, operating systems, etc. can be online at <https://lit.edu/online-learning/online-learning-minimum-computer-requirements>. A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of online technology and resources.

## **DISABILITIES STATEMENT**

The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles' Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409)-951-5708 or email [specialpopulations@lit.edu](mailto:specialpopulations@lit.edu). You may also visit the online resource at [Special Populations - Lamar Institute of Technology \(lit.edu\)](#).

## **STUDENT CODE OF CONDUCT STATEMENT**

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at [www.lit.edu](http://www.lit.edu). Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

## **STARFISH**

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

## **ADDITIONAL COURSE POLICIES/INFORMATION**

### **Course Policies**

1. No food, drinks, use of tobacco products, or vaping products in class.
2. Electronic devices not being used for the class, such as phones and headphones, must be turned off while in class. Any device usage during class may result in a deduction of points on an assignment or test.
3. Do not bring children to class.
4. Certification: If a student passes the certification test that is associated with this class, you will receive an "A" on the final exam and credit for 25% of your labs.
5. A grade of 'C' or better must be earned in this course for credit toward degree requirement.
6. All assignment due dates are indicated in the Blackboard course for this class. Any work submitted after the assigned due date will receive a 10 point deduction.
7. Tests are assigned a due date and must be completed by that date. Tests will not be reactivated after the due date.
8. All assignments must be submitted via Blackboard unless specified by your instructor. Assignments submitted through any other method will receive a "0".
9. Grades for assignments may be accessed through My Grades in Blackboard. Each assignment shows your grade and any grading comments made on your assignment.
10. Chapter Exam grades may be accessed through the Cisco website until they are transferred to the Gradebook in Blackboard.
11. It is the student's responsibility to verify transferred exam grades and ask for corrections if needed.
12. All work is due before the final exam date. Nothing will be graded after the final exam.

## **Certification Requirement**

CNTT and Cyber Security majors are required to earn certification in one of the following areas prior to graduation.

- A+ Certification
- Network+ Certification
- Security+ Certification
- Linux+ Certification
- Cisco Certified Network Associate (CCNA)

This course covers part of the material to prepare for the Cisco Certified Network Associate v1.0 (CCNA 200-301) certification exam. All three Cisco courses must be completed to cover the material for the CCNA exam. Students are responsible for scheduling and paying for the certification through the LIT Testing Center. More information about the certification can be found online at <http://www.cisco.com/c/en/us/training-events/training-certifications/certifications.html>.