

IT4400 - Cisco Enterprise Networking, Security, and Automation (CRN 40882)

Fall 2023 Syllabus

This class instructs students in the installation, configuration and troubleshooting of Cisco routers and switches. Upon completion of this course, you will be prepared to take the CCNAv7 Certification Exam.

Prerequisites: IT3400 and IT3150 with a C grade or better, or instructor's permission

Course fee: \$20, used to assist in maintaining CIT infrastructure.

One section:

IT4400-01 TR 10:30am-11:45am Smith Computer Ctr 107

Final exam: Thurs Dec 14 @ 9am in SCC 107

Instructor:

- [Jay Sneddon](#)
- Office: Burns 235
- Office hours: MW 12:00pm-12:50pm, TTh 1:30pm-2:20pm or by appointment. Zoom appointments may be arranged.

Objectives

At the end of the course, students will be able to:	Outcome is Measured through
Implement OSPF protocols in both point-to-point and broadcast multiaccess networks. (IT PLO 1,2,3)	Assignments, Quizzes, and Exams
Explain how vulnerabilities, threats, and exploits can be mitigated to enhance network security. (IT PLO 1,2,3,4)	Assignments, Quizzes, and Exams
Implement ACLs as part of a network security policy. (IT PLO 1,2,3,4)	Assignments, Quizzes, and Exams
Configure NAT services on the edge router to provide IPv4 address scalability. (IT PLO 1,2,3)	Assignments, Quizzes, and Exams
Implement protocols to manage the network. (IT PLO 1,2,3)	Assignments, Quizzes, and Exams
Explain the characteristics of scalable network architectures. (IT PLO 1,2,3,4)	Assignments, Quizzes, and Exams
Troubleshoot enterprise networks. (IT PLO 1,2,3)	Assignments, Quizzes, and Exams

Resources

The textbook is all online through Cisco's Networking Academy (<https://www.netacad.com/>). Students are required to have an active account there.

Cisco PacketTracer is required for many of the homework assignments. The latest version is available for download on the netacad website.

It is expected that the student provide their own computer for use with this course. The system must be able to run Cisco PacketTracer reliably.

Course Information

You are responsible for being informed regarding announcements, the schedule, and other resources posted on this website. Grading and assignments are managed on [Canvas](#).

Assignments and Exams

Assignments

Assignments will be graded based on completeness and a grading rubric. Assignments will either be done using Cisco Packet Tracer or NetLabs.

(See the Late Work policy for more information)

All assignments are due Saturday night at 11:59pm, unless otherwise noted on Canvas. The primary reason for this is the Smith Computing Center is not open on Sundays.

Exams

This course will feature weekly quizzes and four exams, culminating in a final.

Grading

Assignments, quizzes and exams each contribute to your point total. PacketTracer (30%), Module Exams and Quizzes (20%), Netlabs (20%), Skills Exam (15%), and Final Exam (15%).

Here is the grading scale: $\geq 94 = A$ $\geq 90 = A-$ $\geq 87 = B+$ $\geq 84 = B$ $\geq 80 = B-$ $\geq 77 = C+$ $\geq 74 = C$ $\geq 70 = C-$ $\geq 67 = D+$ $\geq 64 = D$ $< 64 = F$

Tentative Topic Schedule

Week of	Modules	Quiz/Exam
Aug 20	01 - Single-Area OSPFv2 Concepts	
Aug 27	02 - Single-Area OSPFv2 Configuration	Quiz (Module 1)
Sep 03	03 - Network Security Concepts	Quiz (Module 2), Exam1 (Modules 1-2)
Sep 10	04 - ACL Concepts	Quiz (Module 3)
Sep 17	05 - ACLs for IPv4 Configuration	Quiz (Module 4)
Sep 24	06 - NAT for IPv4	Quiz (Module 5), Exam2 (Modules 3-5)
Oct 01	07 - WAN Concepts	Quiz (Module 6)
Oct 08	08 - VPN and IPsec Concepts	Quiz (Module 7), Fall Break
Oct 15	09 - QoS Concepts	Quiz (Module 8)
Oct 22	10 - Network Management	Quiz (Module 9), Exam3 (Modules 6-8)
Oct 29	11 - Network Design	Quiz (Module 10)
Nov 05	12 - Network Troubleshooting	Quiz (Module 11)
Nov 12	13 - Network Virtualization	Quiz (Module 12), Exam4 (Modules 9-12)
Nov 19	14 - Network Automation	Quiz (Module 13), Thanksgiving
Nov 26	Exam5 (Modules 13-14)	Quiz (Module 14)
Dec 03	Review, Skills Exam	
	Final Exam	

Final exam: Thurs Dec 14 @ 9am in SCC 107

This schedule is subject to change.

Course Policies

Absences

Students are responsible for material covered and announcements made in class. School-related absences may be made up only if prior arrangements are made. The class schedule on [Canvas](#) presented is approximate. The instructor reserves the right to modify the schedule according to class needs. Changes will be announced in class and posted to the website. Exams and quizzes cannot be made up unless arrangements are made *prior* to the scheduled time.

Time

Courses should require about 2 hours of outside work per lecture hour of class. This class will require about 6 hours of work per week on the part of the student to achieve a passing or higher grade. Be sure to evaluate your schedule before committing to this course.

Late work

Assignments are due on the date specified in the schedule. Late assignments and make up quizzes will be accepted but penalized 10% per day for five days after the due date, with the maximum penalty being 50% for late work. No work will be accepted after the final exam.

- I reserve the option to reject any late work regardless of the submission date.

Disability/Accessibility Resources

Utah Tech welcomes all students and strives to make the learning experience accessible. If you are a student with a medical, psychological, or learning disability that may require accommodations for this course, you are encouraged to contact the Disability Resource Center (DRC) as soon as possible. You may request reasonable accommodations at any time during the semester; however, they are not retroactive. The DRC is located next door to the Testing Center in the North Plaza Building (435 652-7516, drc@utahtech.edu, drcenter.utahtech.edu).

Cheating and Collaboration

Limited collaboration with other students in the course is permitted and encouraged. Students may seek help learning concepts and developing programming skills from whatever sources they have available, and are encouraged to do so. Collaboration on assignments, however, must be confined to course instructors, lab assistants, and other students in the course. See the section on cheating.

Cheating will not be tolerated, and will result in a failing grade for the students involved as well as possible disciplinary action from the college. Cheating includes, but is not limited to, turning in homework assignments that are not the student's own work. It is okay to seek help from others and from reference materials, but only if you learn the material. As a general rule, if you cannot delete your assignment, start over, and re-create it successfully without further help, then your homework is not considered your own work.

You are encouraged to work in groups while studying for tests, discussing class lectures, and helping each other identify errors in your homework solutions. If you are unsure if collaboration is appropriate, contact the instructor. Also, note exactly what you did. If your actions are determined to be inappropriate, the response will be much more favorable if you are honest and complete in your disclosure.

Where collaboration is permitted, each student must still create and type in his/her own solution. Any kind of copying and pasting is *not* okay. If you need help understanding concepts, get it from the instructor or fellow classmates, but never copy another's written work, either electronically or visually. It is a good idea to wait at least 30 minutes after any discussion to start your independent write-up. This will help you commit what you have learned to long-term memory as well as help to avoid crossing the line to cheating.

Policy for Absences Related to College Functions

Students may periodically miss classes for various college-related functions or military functions; these include athletics, club events, or to fulfill the requirements of a course or a program. Military functions may include: Reserve and Guard activation, activation, special assignments or other approved events or activities. These absences may often conflict with the instruction, assignments, and tests in this course.

Please provide an advanced written notification from your activity supervisor that explains the nature of the activity, and the anticipated time missed.

Disruptive Behavior Policy/Classroom Expectations

The classroom needs an atmosphere of learning and sharing. Class members need to feel safe and able to concentrate. Disruptive behavior that seriously detracts from this environment or inhibits the instructor's ability to conduct proper instruction will not be allowed. Disruptive behavior includes:

- Physical violence, verbal abuse, or harassment
- Intoxication or illegal drug use
- Use of profanity
- Failing to respect others when expressing their own viewpoints
- Talking while the instructor or another student is talking
- Constant questions or interruptions that interfere with classroom presentation

Disruptive class members will be warned. Continued misbehavior may lead to dismissal from class or the course. If necessary, Campus Police may be called.

University Policies

OTHER UNIVERSITY SUPPORT SERVICES

NAME	SERVICE
Utah Tech Resources Overview	Visit this site to see many student resources in one place.
Academic Advisement	Helps students make decisions about their courses and degree path.
Academic Performance and Tutoring Center	Offers one-on-one tutoring, study hall, and online tutoring to help students in many subjects ranging from Math to Foreign Language.
Booth Wellness Center	Provides acute health care, referral services, health education, and brief mental health services.
Campus Life	The Utah Tech University Student Association offers a variety of ways to get involved socially at the university.
Career Services	Assists students with career exploration, choosing a major, writing a resume, and getting a job.
Center for Inclusion & Belonging	Increases diversity through scholarship opportunities, community outreach, academic advisement, and diversity club participation.
Dean of Students Office	Serves as a primary advocate and support network for students. Assists students who are facing personal challenges, including financial, food, and housing concerns.
Disability Resource Center	Serves students with disabilities by providing equal access to academic programs, non-academic activities, and campus facilities
DRC Accessibility	A list of DRC services including exam accommodations, ASL interpreting, materials in alternative format, and more.
Help Desk	Provides assistance for Canvas, Student Email, Student Services, Trailblazers wireless configuration, laptop assistance, and any other technical troubleshooting you may need help with.
Library	Provides the resources necessary to facilitate research and enhance university curriculum and programs.
Math Tutoring Center	Students can drop in to work on homework, take tests, and receive individualized or group tutoring. Online tutoring is also available.
Student Support Services	Provides a variety of free services to help first-generation, low-income, or students with disabilities to complete an associate degree and move on to a bachelor degree.
Testing Center	Provides all proctored exams on campus and can make accommodations for remotely proctored exams.
Utah Health Scholars	Provides tutors for upper-division, health-related courses. Students must register into the UHP program to qualify for this free tutoring.
Veterans Services	Offers tutoring for some classes and arranges tutoring in other centers for other classes. Must have VA benefits to qualify.
Writing Center	Offers students personalized attention from tutors for writing.

UTAH TECH POLICIES & STATEMENTS

PRIVACY

It is your responsibility to protect your data and privacy online. Be careful and use discretion when using any of the course technologies to complete required learning activities. If you are unsure about how to protect your data and privacy online, please use the resources provided to understand your responsibility.

[101 Data Protection Tips: How To Keep Your Passwords, Financial, and Personal Information Safe](#)

Harper, E. (2018). [9 Simple Ways To Protect Your Privacy](#)

[Canvas Privacy Policy](#)

[Google Privacy Policy](#)

[YouTube Policies](#)

[Vimeo Privacy Policy](#)

Utah Tech Policy Links

[Code of Student Rights and Responsibilities \(Academic dishonesty / academic integrity policy, student academic conduct policy\)](#)

[Financial Aid](#)

[Registration](#)

[Student Association](#)

[Student absence related to college function](#)

[Sexual Harassment](#)

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TITLE IX STATEMENT

Utah Tech University affirms its commitment to the promotion of fairness and equity in all aspects of the educational institution. Harassment and discrimination—including sex/gender discrimination, gender identity, gender expression, sexual harassment, sexual misconduct, gender-based violence, dating violence, domestic violence, stalking, pregnancy or parental, family or marital status and or retaliation—not only disrupts our commitment to maintaining an environment in which every member of the University community is treated with respect and dignity, but may also violate University policy and federal, state, and/or local law.

Should you or someone you know experience behavior that is coercive, discriminatory, harassing, and or sexually violent in nature, or if you or someone you know has questions about their rights and options regarding such behavior, you are encouraged to contact:

[Title IX Coordinator](#) 435.652.7747 (ext. 7747)

Incidents may also be reported directly to law enforcement, either separately or in conjunction with any report made to the University's Title IX Coordinator, and the University will aid in making contact if requested.

Utah Tech University Police 435.275.4300 or by calling 9-1-1

Maintaining a safe and inclusive University community is a shared responsibility. For more information on how Title IX protections can benefit you and help us keep a productive campus environment, visit titleix.utahtech.edu to learn more.

STUDENT EMAIL

You are required to frequently check your university email account. Important class and university information will be sent to your university account, including Utah Tech bills, financial aid/scholarship notices, notices of cancelled classes, reminders of important dates and deadlines, and other information critical to your success at Utah Tech and in your courses. To access your university-sponsored account, visit helpdesk.utahtech.edu/about-dmail. Your username is your digital ID (e.g. D00111111).

NON-STUDENT

Non-student in the classroom and other designated study areas: It is expected that only bona fide students as defined and classified by the Utah Tech University catalog, will attend classes, unless specific prior permission for guests has been obtained from the instructor.

ACADEMIC GUIDELINES REGARDING COVID-19

For Utah Tech's [up-to-date COVID-19 Emergency Response Plan](#), please visit the university website.