

## TEIT 1170 - Computer Networks I (2 Credits)

### Course Description

Computer Networks I explores common computer networking models, network device installation and configuration, switching and routing technologies, IP address configuration, basic wireless network configuration, and network troubleshooting tools and methodology. This course aligns with objectives from popular networking certification.

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### Course Objectives

- Differentiate the purpose of each layer in the Open Systems Interconnection (OSI) model.
  - Install and configure common networking devices, components, and services.
  - Identify characteristics of switching and routing technologies and features.
  - Plan and configure IPv4 and IPv6 network addresses and services.
  - Configure a small office/home office (SOHO) wireless network.
  - Use the appropriate methodology, tools, and protocols to troubleshoot and resolve networking issues.
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### Course Outline

- Network Models and Protocols
  - Cabling and Network Hardware
  - Addresses and Services
  - Switching and Routing
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### Textbook & Reading Materials

TestOut Network Pro, Test Out, ISBN: 9781935080435

## Assignments and Assessments

Course Introduction and Standards	6.5.12 - Lab: Create Standard DNS Zones
Meet Your Instruction Team	6.5.13 - Lab: Create Host Records
Rules of the Lab	6.5.14 - Lab: Create CNAME Records
CS Code of Conduct Policy	6.5.15 - Lab: Troubleshoot DNS Records
Submitting Assignments in Canvas	6.5.17 - Lesson Review
Taking a Screenshot	6.6.6 - Lab: Use nslookup
Orientation	6.6.7 - Lesson Review
Orientation Acknowledgement	6.7 - Module Quiz
Syllabus Agreement	6.8 - Checkpoint Review
5.1 - Routing Technologies	7.1.4 - Lab: Configure NTP on Linux
5.1.9 - Lab: Install an Enterprise Router	7.1.5 - Lesson Review
5.1.10 - Lab: Cisco Troubleshooting Tools	Student Acknowledgement Statement Module 2
5.1.11 - Lesson Review	Checkpoint Meeting Module 2
5.2.7 - Lesson Review	7.2 - Web, File, Print, and Database Services
5.3.4 - Lab: Configure NAT	7.2.8 - Lab: Scan for Web Services with Nmap
5.3.5 - Lesson Review	7.2.9 - Lesson Review
5.4.3 - Lesson Review	7.3.6 - Lab: Connect VoIP 1
5.5.3 - Compare Three-Tier Hierarchical Model	7.3.7 - Lab: Connect VoIP 2
5.5.4 - Lab: Create a Three-Tier Network	Skills Check: VOIP Installation
5.5.5 - Lesson Review	7.3.8 - Lesson Review
5.6.8 - Lab: Configure Switch IP and VLAN - GUI	7.4.8 - Lab: Configure NIC Teaming
5.6.9 - Lab: Create VLANs - GUI	7.4.9 - Lesson Review
5.6.10 - Lab: Configure Trunking	7.5 - Module Quiz
5.6.11 - Lab: Configure Switch IP Settings - CLI	8.1.11 - Lab: Update Firmware
5.6.12 - Lab: Configure Management VLAN Settings - CLI	8.1.12 - Lesson Review
5.6.13 - Lesson Review	8.2.8 - Lab: Scan Using Zenmap
5.7.4 - Lesson Review	8.2.9 - Lesson Review
5.8 - Module Quiz	8.3.6 - Lesson Review
6.1.7 - Lab: Explore Three-Way Handshake in Wireshark	8.4.6 - Lab: Configure Logging in pfSense
6.1.8 - Lab: View Open Ports with netstat	8.4.7 - Lab: Evaluate Event Logs in pfSense
6.1.9 - Lesson Review	8.4.8 - Lab: Auditing Device Logs on a Cisco Switch
Skills Check: Fiber Splicing	8.4.9 - Lab: Configure Logging on Linux
Student Acknowledgement Statement Module 1	8.4.10 - Lab: View Event Logs
Checkpoint Meeting Module 1	8.4.11 - Lesson Review
6.2 - Dynamic Host Configuration Protocol	8.5.5 - Lab: Troubleshoot with Wireshark
6.2.5 - Lab: Configure a DHCP Server	8.5.6 - Lab: Configure Port Mirroring
6.2.6 - Lab: Configure DHCP Server Options	8.5.7 - Lesson Review
6.2.7 - Lab: Create DHCP Exclusions	8.6.7 - Lab: Configure QoS
6.2.8 - Lab: Create DHCP Client Reservations	8.6.9 - Lesson Review
6.2.10 - Lab: Configure Client Addressing for DHCP	8.7 - Module Quiz
6.2.11 - Lesson Review	Student Acknowledgement Statement Module 3
6.3.4 - Lab: Explore APIPA Addressing	Checkpoint Meeting Module 3
6.3.5 - Lab: Explore APIPA Addressing in Network Modeler	9.1 - Security Concepts
6.3.7 - Lesson Review	9.1.7 - Lab: Create a Honeypot
6.4.4 - Lab: Configure a DHCP Relay Agent	9.1.8 - Lesson Review
6.4.5 - Lab: Add a DHCP Server on Another Subnet	9.2.5 - Lab: Analyze a DoS Attack
6.4.6 - Lab: Troubleshoot Address Pool Exhaustion	9.2.6 - Lab: Analyze a DDoS Attack
6.4.7 - Lab: Explore DHCP Troubleshooting	9.2.7 - Lesson Review
6.4.8 - Lab: Troubleshoot IP Configuration 1	9.3.7 - Lab: Poison ARP and Analyze with Wireshark
6.4.9 - Lab: Troubleshoot IP Configuration 2	9.3.8 - Lab: Spoof MAC Addresses with SMAC
6.4.10 - Lab: Troubleshoot IP Configuration 3	9.3.9 - Lab: Perform a DHCP Spoofing On-Path Attack
6.4.11 - Lesson Review	9.3.10 - Lesson Review
6.5.11 - Lab: Configure DNS Addresses	9.4.6 - Lab: Discover a Rogue DHCP Server

9.4.7 - Lab: Configure DHCP Snooping

9.4.8 - Lab: Poison DNS

9.4.9 - Lab: Analyze DNS Spoofing

9.4.10 - Lesson Review

9.5.3 - Lab: Respond to Social Engineering Exploits

9.5.4 - Lab: Crack a Password with John the Ripper

9.5.5 - Lesson Review

9.6 - Module Quiz

9.7 - Checkpoint Review

Student Acknowledgement Statement Module 4

Checkpoint Meeting Module 4

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*Subject to change. Please consult your Canvas course for the most current instructions and updates.*

## Classroom Hours

Mo, Tu, W, Th, Fr  
8:00 AM - 11:00 AM  
12:00 PM - 3:00 PM

For a full list of course hours visit: [Course Schedule](#)

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## Instructor Contact Information

Greg Davis — [gdavis@stech.edu](mailto:gdavis@stech.edu)  
Austin Prince — [aprince@stech.edu](mailto:aprince@stech.edu)

Office Hours: By appointment

Email is the preferred method of communication; you will receive a response within 24 hours during regular business hours.

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## Canvas Information

Canvas is the where course content, grades, and communication will reside for this course.

- [stech.instructure.com](https://stech.instructure.com)
- For Canvas passwords or any other computer-related technical support contact Student Services.
- For regular Hours and Weekdays call (435) 586 - 2899.
- For after Hours & Weekends call (435) 865 - 3929 (Leave a message if no response).

# Course Policies

All Students: This course is pass or fail. All assignments in this course require 100% score with unlimited submissions. All quizzes in this course require a minimum score of 80%. Each module of this course will contain at least one quiz. There is a student/teacher checkpoint meeting at the end of each module. You are required to keep your progress at a 67% minimum throughout the program. Progress is determined by the number of completed module hours (15 hours per module) divided by the number of enrolled hours.

Iron County High School Students: In addition to the above information, Iron County students have the following policies. Your progress grade will be submitted every Friday to PowerSchool. You must maintain a progress percentage of 67% or over to stay in the course. You will receive a No-Grade (NG) in the course until all course fees are paid.

Attendance All Students: You are required to keep your attendance at a 67% minimum throughout the program. Attendance is determined by the number of attended hours divided by the number of enrolled hours. You must complete this program within 150% estimated program length. You are permitted one 15 minute break every 90 minutes. If you take more than one break in a 90 minute period or your break lasts longer than 15 minutes, your attendance will be penalized. As per Southwest Tech policy, 10 consecutive absences will lead to being withdrawn from the program. Please notify your instructors about absences as soon as possible. If absence is due to illness, please email your instructors prior to end of day.

Iron County High School Students: In addition to the above information, Iron County students must maintain an attendance percentage of 67% or over to stay in the course. Cell Phone/Electronics Cell phones cannot be used during class time. In the lab, the PCs are reserved for students in IT courses. All students can use the iMacs, which run OSX, Windows, and Linux operating systems. You may bring your personal computers to class. You must be on topic in the lab while clocked-in. Industry Environment Computer Science typically is very sedentary. This means you may sit at a desk for long hours. Be sure to move and get what exercise you can.

High School Power School Grades: Quarter student grades will be determined by student progress percentage. Faculty will use the higher percentage of either 1) quarter progress, or 2) cumulative progress for the current training plan year. The progress percentage will be used with the grading scale to determine the minimum grade. High School Grade Scale: The following grading scale will be used to determine a letter grade from the progress percentage:

- |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|
| • A : 94 - 100% | • B : 83 - 86%  | • C : 73 - 76%  | • D : 63 - 66%  |
| • A- : 90 - 93% | • B- : 80 - 82% | • C- : 70 - 72% | • D- : 60 - 62% |
| • B+ : 87 - 89% | • C+ : 77 - 79% | • D+ : 67 - 69% | • F : 0 - 59%   |

## Additional Information

InformaCast Statement: Southwest Tech uses InformaCast to ensure the safety and well-being of our students. In times of emergency, such as weather closures and delays, this app allows us to promptly deliver notifications directly to your mobile devices. To stay informed and receive real-time updates, we encourage all students to sign up for notifications. Your safety is our priority, and staying connected ensures a swift response to any unforeseen circumstances. More information and directions for signing up are available at: <https://stech.edu/emergency-notifications/>

Internet Acceptable Use Policy: The student is expected to review and follow the Southwest Technical College Internet Safety Policy at: <https://stech.edu/students/policies/>

Student Code of Conduct Policy: The student is expected to review and follow the Southwest Technical College Student Code of Conduct Policy at: <https://stech.edu/students/policies/>

Accommodations: Students with medical, psychological, learning, or other disabilities desiring accommodations or services under ADA, must contact the Student Services Office. Student Services determines eligibility for and authorizes the provision of these accommodations and services. Students must voluntarily disclose that they have a disability, request an accommodation, and provide documentation of their disability. Students with disabilities may apply for accommodations, based on an eligible disability, through the Student Services office located at 757 W. 800 S., Cedar City, UT 84720, and by phone at (435) 586-2899. No diagnostic services are currently available through Southwest Technical College.

Safety and Building Maintenance: The College has developed and follows a variety of plans to ensure the safe and effective operation of its facilities and programs. The following plans are available online:

1) Facilities Operations and Maintenance Plan; 2) Technical Infrastructure Plan; and 3) Health and Safety Plan.

Withdrawals and Refunds: Please refer to the Southwest Technical College Refund Policy at: <https://stech.edu/students/policies/>

Any high school or adult student, who declares a technical training objective is eligible for admission at Southwest Technical College (Southwest Tech). Program-specific admissions requirements may exist and will be listed on the Southwest Tech website. A high school diploma or equivalent is not required for admission but is mandatory for students seeking Title IV Federal Financial Aid.

Non-Discriminatory Policy: Southwest Technical College affirms its commitment to promote the goals of fairness and equity in all aspects of the educational enterprise, and bases its policies on the idea of global human dignity.

Southwest Tech is committed to a policy of nondiscrimination. No otherwise qualified person may be excluded from participation in or be subjected to discrimination in any course, program or activity because of race, age, color, religion, sex, pregnancy, national origin or disability. Southwest Technical College does not discriminate on the basis of sex in the education programs or activities that it operates, as required by Title IX and 34 CFR part 106. The requirement not to discriminate in education programs or activities extends to admission and employment. Inquiries about Title IX and its regulations to STECH may be referred to the Title IX Coordinator, to the Department of Education, and/or to the Office for Civil rights.

If you believe you have experienced discrimination or harassment on our campus, please contact the Title IX Coordinator, Cory Estes: [cestes@stech.edu](mailto:cestes@stech.edu), (435) 865-3938.

For special accommodations, please contact the ADA Coordinator, Cyndie Tracy: [ctracy@stech.edu](mailto:ctracy@stech.edu), (435) 865-3944.

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