

Ridge View High School  
Columbia, South Carolina

# Networking 1 Syllabus

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**COURSE TITLE:** Networking 1

## **Course Description:**

This course is designed to prepare the student for the Cisco CCENT (Cisco Certified Entry – Level Network Technician) certification. Course content will include topologies, cable construction and troubleshooting, and networking equipment and use.

## **PREREQUISITE:**

- None

**CREDIT:** 1 Carnegie unit

## **COURSE COMPETENCIES:**

### Chapter 1 – Personal Computers and Applications

#### Objectives

1. Identify the purpose and uses of personal computers and describe local and network applications.
2. Compare and contrast different types of computing devices.
3. Explain the binary representation of data.
4. Determine appropriate components and peripheral devices to meet requirements.
5. Install, verify, and upgrade computer components and peripherals.

### Chapter 2 – Operating Systems

#### Objectives

1. Describe the purpose of an OS and identify common operating systems available.
2. Perform an actual or simulated installation of an operating system and prepare the computer to participate on the network.
3. Maintain the operating system.

### Chapter 3 – Connecting to the Network

#### Objectives

1. Explain the concept of networking and the benefits of networks.
2. Explain the concept of communication protocols.
3. Explain how communication occurs across a local Ethernet network.

4. Describe Access layer devices and communication methods on a local Ethernet network.
5. Describe Distribution layer devices and communication methods across networks .
6. Plan, implement, and verify a local network.

## Chapter 4 – Connecting to the Internet through an ISP

### Objectives

1. Explain “what is the Internet?” and how we connect to the Internet using an Internet Service Provider (ISP).
2. Explain how information is sent across the Internet through an ISP.
3. Describe and identify the components of an ISP Network Operations Center.
4. Identify the different types of cables and connectors for connecting the devices in a Network Operations Center.
5. Construct and terminate twisted pair cables and determine type of cable needed.

## Chapter 5 – Network Addressing

### Objectives

1. Describe the purpose of an IP address and Subnet Mask and how they are used on the Internet.
2. Describe the types of IP Addresses available.
3. Describe the methods of obtaining an IP Address.
4. Describe the use of NAT on a home or small business network using an Integrated Router.

## Chapter 6 – Network Services

### Objectives

1. Compare and contrast clients and servers and their interaction over the network.
2. Describe the type of interactions of Internet applications.
3. Describe the purpose of a layered model.
4. Illustrate the interaction of various protocols.

## Chapter 7 – Wireless Technologies

### Objectives

1. Describe wireless technologies.
2. Describe the various components and structure of a WLAN.
3. Describe wireless LAN security issues and mitigation strategies.
4. Configure an integrated wireless access point and a wireless client.

## Chapter 8 – Basic Security

### Objectives

1. Identify and describe the various networking threats.
2. Identify different methods of attack.
3. Describe security procedures and applications.

4. Describe the features of a firewall and how it can be used to protect against an attack.

## Chapter 9 – Troubleshooting Your Network

### Objectives

1. Describe the troubleshooting process.
2. Describe the utilities used to verify TCP/IP connectivity.
3. Identify and describe common hardware and connection issues in wired and wireless networks.
4. Utilize the troubleshooting process to document problems and interact with a help desk.

**The instructor reserves the right to alter or modify this document as needed.**

### **INSTRUCTIONAL MATERIALS, SUPPLIES, AND EQUIPMENT:**

All books and equipment are provided by the instructor. Students are required to provide paper, pencil, pen, 4GB flash-drive, and 3-Ring Binder.

### **OPTIONAL TEXTBOOKS / INSTRUCTIONAL MATERIAL:**

C-Tech. Introduction to Telecommunications, 1.2.1  
C-Tech Associate, Sparta New Jersey 2001

C-Tech. Introduction to Network Cabling: Copper-Based Systems, Version 3.3  
C-Tech Associate, Sparta New Jersey 2001

**EVALUATION SYSTEM:** Students will be given five (5) minutes to calculate and record his/her class average and attendance each Friday and will be graded using the following criteria each grading period:

**“Students will be held to the Academic Integrity policy of Richland District II.”**

**Daily Grade = 25%** to include:

- a. Attendance
- b. Participation
  1. Includes bringing required supplies to class each day.
- c. Safety
- d. Leadership
- e. Self-control
- f. Homework (includes Students' Notebook and Review Questions.)

**Quizzes = 10%**

**Tests = 25%**

**Hands-On Projects = 40%.** Each hands-on activity is graded on the following criteria:

- a. Safety
- b. Preparation

- c. Logical Sequence
- d. Workmanship

**Semester Examination = 20% of Semester Grade**

**ALL WRITTEN TESTS MUST BE PASSED WITH 70% ACCURACY.**

Students who score below 70% must re-test after a 24 hour waiting period. All re-tests will be taken on the student's time unless other arrangements made.

**GRADING CRITERIA:**

**A = 100 – 93**

**B = 92 – 85**

**C = 84 – 77**

**D = 76 – 70**

**F = 69 or below**

**CLASSROOM RULES:**

1. Enter the classroom quietly before the tardy bell rings.
2. Begin working on class assignments.
3. Do not sit on top of tables, desks, or AC Unit.
4. Bring all required class materials (i.e., paper, pencil) to class everyday.
5. Only one student may leave the classroom at any time during class.
6. **No Food or Drinks are allowed.**
7. No horse-playing is allowed.
8. Do not energize any equipment without permission.
9. You are responsible for cleaning up after yourself.
10. Listen to the teacher and follow his instructions.

**PENALTIES FOR VIOLATING CLASS RULES :**

**Rule 1**

- a) Discipline based on Ridge View High School tardy policy.

**Rules 2, 3, 4, & 9**

- a) First Offense: Oral Warning
- b) Second Offense: Conference with Parents
- c) Third Offense: Discipline Referral

### Rule 5

Students may only leave the classroom in case of an emergency. If the student leaves the classroom without permission or goes anywhere except to the destination where permission was granted, the student will be referred to an Administrator.

### Rules 6, 7, & 8

- a) First Offense: Conference with Parents and Administration Notified
- b) Second Offense: Discipline Referral
- c) Third Offense: Discipline Referral

### Rule 10 - Covers all rules not previously listed.

- a) First Offense: Conference with student
- b) Second Offense: Conference with Parents and Administration
- c) Third Offense: Discipline Referral

