

## Syllabus

### COURSE GENERAL INFORMATION

Course Title: Network Essentials  
Code: CCNA 1020  
Contact Hours: 43  
Term: May 11, 2022 to June 14, 2022  
Teacher: Joel Vargas  
Email: [jvargas@passwordpr.com](mailto:jvargas@passwordpr.com)

### Course Description

Networking Essentials covers basic networking concepts within the context of the networks you encounter every day. This course teaches the fundamentals of networking. It covers how devices communicate on a network, network addressing and network services, how to build a home network and configure basic security, the basics of configuring Cisco devices, and testing and troubleshooting network problems, how devices are configured, how communication takes place on a network, and the basics of implementing network security best practices

### Objectives

- Explain how end-user devices and local networks interact with the global Internet.
- Explain the requirements for network connectivity.
- Build a small network using an integrated network router.
- Explain the importance of IP addressing.
- Explain how the protocols of the TCP/IP suite enable network communication.
- Configure an integrated wireless router and wireless clients to connect securely to the Internet.
- Configure basic network security.
- Build a simple computer network using Cisco devices.
- Troubleshoot common network issues found in home and small business networks

## Themes Content

1. Communicating on a Local Network
2. Network Optimization
3. Command Line Tools
4. Network Addressing
5. Providing Network Services
7. Network Security
8. Network Management
9. Network Policies
9. Testing and Troubleshooting
  - Define the OSI Model and describe its function for each layer.
  - Describe in a table including a Hub, Switch, and Bridge, their qualities, their advantages, and disadvantages.
  - Define and illustrate the physical and logic topologies: Star, Mesh, Bus, Hybrid, and ring.
  - Create a small-scale model physical star Topology and identify each of the components (nodes, links, switches, routers, backbones).
  - Configure a 1 feet 568A, 568B, and crossover UTP cable Cat5e or Cat6 cable.

## Forums:

- Forum 1- Quien invento el internet
- Forum 2- El tiempo que se tarda descubrir vulnerabilidades en contraseñas
- Forum 3- Is the Cloud Secure
- Forum 4- Sistema para detectar IOT Ocultos
- Forum 5- Método para lograr acceso a redes corporativas.

## EVALUATION CRITERIA

| <b>CRITERIA</b> | <b>Grade total</b> |
|-----------------|--------------------|
| 1 Mid-Term Exam | 100                |
| 1 Final Exam    | 100                |
| Quizzes         | 100                |
| Forums 1-5      | 100                |
| Assistance      | 100                |
|                 |                    |
| <b>Total</b>    | <b>500</b>         |

\*4 Points less for each absence.

\*Assignments are always due in class on the day designated. You are responsible for any work lost due to technical problems, etc. Late papers will lose a letter grade for each day that they are late. Any exceptions must be properly documented and discussed in advance for an extension to be arranged.

### Lab Policy

1. For the student's and equipment's safety **no eating and/or drinking** is allowed in the classroom or laboratory.
2. Students must always apply preventing ESD (Electrostatic Discharge) procedures before using electronic devices.
3. Students must have unplugged electronic devices from electric outlets before any lab procedure.

## EDUCATIONAL RESOURCES

- Pengelly, J. (2022). The Official Network + Student Guide (Exam N10-008).  
Ebook CompTIA. Downers Grove, Illinois
- Neo LMS (2022). Network Essentials (CCNA 1020). *passwordtech.edu20*.  
<https://passwordtech.edu20.org/>

## NOTES

- **Reasonable Accommodation:** Any student who requires reasonable accommodation must request them at the beginning of the course or as soon acquire the required knowledge that through the Professor in charge and be notifying the Academic Director.
- **Honesty, fraud, plagiarism:** Dishonesty, fraud, plagiarism and any other inappropriate behavior about the student's academic performance, constitute violations of the catalog of the institution, its Rules of Conduct and Duties of Student. Major infractions, as provided in the catalog may result in the suspension of the institution for a defined time or permanent expulsion as stipulated in the Rules of Conduct and Duties of Student.