**Introduction to Computer Networking**

2021-2022 Course Syllabus

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Location: Room 257

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**Course Description:**

**Grades 9-12 0.50 Credit/ Quarter**

Every day, more people around the world are working from home and attending school from home. This means that many people are using a variety of networks to connect to the internet. Do you know what it takes to connect multiple devices using a local network? Do you know how to connect a computer network to the internet? This course provides learners with a broad foundational understanding of networking. It is suitable for anyone interested in a career in IT, or a related career pathway. The primary emphasis is on networking knowledge with a small amount of basic skills that are useful for a home or SOHO network.

**Classroom materials:**

Cisco Academy: <https://www.netacad.com>

**Goals and Objectives of this course:**

Students obtain foundational knowledge in the following areas of computing:

● 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.

**Assessments:**

Graded assignments, testing, projects, and hands-on labs are evaluated as follows: Formative or Summative. Formative assessments determine how well you are grasping the concepts presented. This could be a quiz on new terms introduced, or demonstration of the skills you have learned through a hands-on activity. Summative assessments determine how well you have learned the concepts of the chapter(s). Summative assessments would include the Chapter exams, collaborative projects, or demonstration of your overall skill such as building a small LAN network.

**Late Work:**

Formative assessments and other work for non-summative categories accepted through the end date of the Chapter. Ten points off in the first week and twenty points off after that. After two weeks, work will be accepted and will earn a grade of 50 points.

Summative assessments will be accepted late if the student makes arrangements with the teacher. Ten points off in first week and twenty points off after that point. Reassessment, with a plan for re-learning, at the discretion of the teacher.

The details of grading are as follows:

**Formative: 20%**

* Soft skills, professionalism, conduct
* Quizzes
* Labs
* Competency – demonstration of a particular skill

**Summative: 80%**

* Chapter Exams
* Projects
* Labs
* Competency – demonstration of combined set of skills

**Student Expectations: Whether we are in the classroom or online**

* Arrive on time, be prepared, ready to work, and learn.
* Professionalism. Dress for safety. No hats or hoods, please.
* Follow all safety rules at ALL times.
* Complete all assignments and assessments.
* Be respectful of one another.
* Raise your hand when asking or answering questions.
* Equipment, peripherals, devices, components and tools are in the classroom for all students to use. The removing any equipment, peripherals, devices, components or tools without permission, will not be tolerated.
* **Use of personal technology (smart phones, cell phones, iPods, iPads or similar) are at the teacher’s discretion only. Personal technology devices are out of sight and silenced.**

**Course Outline:**

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| Week (Estimation) | Lecture Topics | Assignments |
| 1 | Course Overview, Syllabus  Build Cisco Accounts  Review Course Tools: Packet Tracer  Ever Wonder How it Works? | Chapter 1  Quiz, Labs  Chapter Test |
| 2 | Networks in Our Daily Lives | Chapter 2  Quiz, Labs  Chapter Test |
| 3 | Communicating on a Local Network | Chapter 3  Quiz, Labs  Chapter Test |
| 4 | Network Addressing | Chapter 4  Quiz, Labs  Chapter Test |
| 5 | Providing Network Services | Chapter 5  Quiz, Labs  Chapter Test |
| 6 | Chapters 1-5 | Exam |
| 7 | Building a Home Network | Chapter 6  Quiz, Labs  Chapter Test |
| 8 | Network Security | Chapter 7  Quiz, Labs  Chapter Test |
| 9 | Configuring Cisco Devices | Chapter 8  Quiz, Labs  Chapter Test |
| 10 | Testing and Troubleshooting | Chapter 9  Quiz, Labs  Chapter Test |
| 11 | Final Project |  |
| 12 | Final Written Exam Chapters 6-9 |  |