Module 1

Describe the fundamentals of computing infrastructure components: hardware, application software, operating systems, and data communications systems.

Module 2

Delineate and discuss societal issues related to computing, including the guiding principles of professional and ethical behavior.

Describe the need and ways to maintain security in a computing environment.

Module 3

Demonstrate the ability to create and use documents, spreadsheets, presentations and databases in order to communicate and store information as well as to support problem solving.

Module 4

Explain how networks work; implement a basic home network.

Module 5

Describe basic concepts/structures of computer programming, demonstrate an understanding of programming strategies and design an algorithm using those strategies.

**Module 1**

This Module will help you understand **how computers work** and **how to use them**. We'll talk about **how to set up a computer**, the difference between **hardware** and **software**, and the **types of computers** you can use. We'll also explore **operating systems**, **applications**, the **cloud**, and a whole lot more.

1. What is a Computer?
   1. Computer Functions
      1. Input
      2. Process
      3. Output
      4. Storage
   2. Types of Computers
2. Hardware & Software Basics
   1. External Hardware Components
      1. Case (also known as a tower, chassis, or system unit)
      2. Secondary Storage
      3. Input Devices
      4. Output Devices
   2. Internal Hardware Components
      1. Motherboard
      2. Central Processing Unit
      3. Secondary Storage
      4. RAM
      5. Power Supply
      6. Expansion Slots/Cards
3. Software Basics
   1. System Software
      1. Operating Systems
      2. Utilities and Device Drivers
   2. Application Software
4. Data Communications
   1. The Internet and Networks
   2. The Cloud
   3. Internet of Things (IoT)

**Module 2**

This Module will help you understand **ethics in the digital world** and **societal issues related to computing**. You will learn about **the impact of computers on society and the various computer careers available** in the here and now. You will also explore the need and the implementation of **information security**, and a much more.

1. Computer Ethics
   1. Ten Commandments
   2. Social Responsibility
   3. Subcategories of ethics
      1. Internet
      2. Cyber
      3. E-Commerce
      4. Business
      5. Consumer
2. Computers in Society
   1. Disadvantages
   2. Advantages
   3. Impact on Employment
      1. Careers
      2. Skills
3. Computer Security
   1. Information Security
   2. Cybersecurity

**Module 3**

This Module will teach you **how to use common applications such as email, web browsers, word processing, and presentation software.** You will learn how to **create and format** **documents, spreadsheets, presentations, and databases.** You will also explore the uses of these common applications to **store information**, **support problem solving**, and **prepare professional reports**.

NOTE: There is not much reading in this module as the best way to learn these topics is by doing. Run through the activities as many times as you feel necessary. The more you do, the more you will learn.

1. Common Computer Applications
   1. Email
   2. Web Browsers
   3. Productivity Software
      1. Microsoft Word
      2. Microsoft Excel
      3. Microsoft PowerPoint
      4. Microsoft Access
2. Create, Format, Present (Hands-on Tutorials)

# Module 4

This Module will help you understand **how networks operate**. You will learn about **the hardware and software** needed to operate a network, the varying **types of networks** and **how information is sent** in a network. You will also explore **how to set-up a basic home network**.

1. What is a Network?
   1. Definition
   2. Examples
2. Network Operations
   1. Snail Mail Analogy
   2. TCP/IP model
3. Basic Home Networks
   1. Internet Access
   2. Wired Setup
   3. Wireless Setup
   4. Adding Wireless Devices

# Module 5

This Module will help you understand **how networks operate**. You will learn about **the hardware and software** needed to operate a network, the varying **types of networks** and **how information is sent** in a network. You will also explore **how to set-up a basic home network**.

1. Algorithms to Programs
2. Basic Program Design
3. Basic Operating System Functions