TRI-TECH SKILLS CENTER CYBER SECURITY COURSE OUTLINE

SEMESTER 1 - YEAR 1

- **COMPUTER SCIENCE / CYBER SECURITY AT TRI-TECH INTRODUCTION**
  Cyber Security at Tri-Tech is an introduction to Computer Science, Networking and Electronics.
  It is an introduction of how computers, networks and the Internet of Things (IOT) work.
- **SAFETY**
  Computer lab safety
- **COMPUTER BASICS AND NETWORKING INTRODUCTION**
  Power supply, motherboard, RAM, CPU, video, audio, inputs, USB, and Ethernet
- **COMPUTER SCIENCE MATHEMATICS (THIS UNIT EXTENDS THOUGH THE ENTIRE YEAR)**
  Base conversions, logic, networking mathematics and computer science mathematics.
- **SECURITY ETHICS, SECURITY LEVELS, SECURITY THREATS AND DEFENSIVE SECURITY**
- Introduction to ethics, security levels and defense.
- **LINUX INSTALLATION**
  Debian Linux installation, configuration, directory structure and Bash. Linux users and permissions
- **LINUX COMMAND LINE**
  Linux command line and introduction to BASH scripting. (BASH).
  Introduction to tty.
- **LINUX SERVER SERVICE INSTALLATION**
  Linux server and configuration introductory level. (Apache2, VSFTPD, Samba, and SSH)
- **PYTHON PROGRAMMING**
  Introduction to computer programming in Python
  Using Python on a Raspberry Pi Computer.
  Incorporating to Python "import os" module
- **AUTHENTICATION**
  Google.com, Github.com, Microsoft.com(Imagine) and Amazon.com (https://www.awseducate.com/Registration) Year 1 and Year 2

SEMESTER 2 - YEAR 1

- **CAREER PLANNING**
  Long term planning for a career as a Computer Scientist and Cyber Security specialist.
- **GIT AND GITHUB.COM**
  Github.com basics using the web interface and git command line.
  Each person in class creates a username.github.io web page.
- **PHP AND SQL INTRODUCTION**
  Introduction to Hypertext processing using the PHP programming language.
  Introduction to SQL (Structured Query Language) programming language.
- **C / C++ PROGRAMMING**
- **NETWORKING HARDWARE AND PROTOCOL**
  Open Systems Interconnect (OSI Model) (Ethernet, wireless)
  Wired network fundamentals (IPV4, Subnetting, Routing, DHCP and Switching)
- **NETWORK MONITORING TOOLS INTRODUCTION**
- (Wireshark, Microsoft and Linux tools)
- **CISCO NETWORKING**
  Packertracer and introductory CLI (Command Line Interface)
- **LINUX VIRTUALIZATION**
  KVM (Kernel Virtual Machine) and Virtual Machine Manager)
- **MICROSOFT**
  Windows client installation and networking. (Virtual Machine and on hard drive)
- **MICRO-CONTROLLERS**
  Introduction to electronic and micro-controllers (Arduino)
- **AMAZON WEB SERVICES**
  Introduction to AWS EC2 (Amazon Web Services Elastic Cloud)
- **MICROSOFT AZURE**
  Introduction to AWS EC2 (Amazon Web Services Elastic Cloud)
- **CULMINATING SMALL GROUP PROJECT**