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|  |  | tritechsc.org  tritech.ksd.org/cyber  YEAR 2 |

**TRI-TECH SKILLS CENTER CYBER SECURITY COURSE OUTLINE**

**SEMESTER 1 - YEAR 2**

* **COMPUTER SCIENCE / CYBER SECURITY AT TRI-TECH INTRODUCTION**

Cyber Security year two is and extension of year 1 where students can further practice and refine Computer Science, Networking and Electronics.

It is an introduction of how computers, networks and the Internet of Things (IOT) work.

* **SAFETY**

Computer lab safety – Year 2 students lead group activities.

* **AUTHENTICATION**

Google.com, Github.com, Microsoft.com( Imagine) and Amazon.com (<https://www.awseducate.com/Registration>) Year 1 and Year 2

<https://imagine.microsoft.com/library/main/documents/microsoft%20imagine%20how%20to%20enroll%20guide%20for%20purchasing%20customers.pdf>

<https://signup.azure.com/studentverification?offerType=3>.

* **CAREER PLANNING - UPDATE YEARS 1 PLAN**

Long term planning for a career as a Computer Scientist and Cyber Security specialist.

* **ADVANCED SECURITY ETHICS, SECURITY LEVELS, SECURITY THREATS AND DEFENSIVE SECURITY**
* Introduction to ethics, security levels and defense. Year 2 students manage servers and accounts.
* **LINUX INSTALLATION**

Debian Linux installation, configuration, directory structure and Bash. Linux users and permissions

Year 2 people install Centos non a remote server.

* **ADVANCED LINUX COMMAND LINE**

Linux command line and introduction to BASH scripting. (BASH).

Introduction to tty.

* **ADVANCED LINUX SERVER SERVICE INSTALLATION**

Linux server and configuration introductory level. (Apache2, VSFTPD, Samba, and SSH

**SEMESTER 2 - YEAR 2**

* **CAREER PLANNING – UPDATE YEAR 1**

Long term planning for a career as a Computer Scientist and Cyber Security specialist.

* **ADVANCED GIT AND GITHUB.COM**

GIT projects.

Update username.github.io web page.

* **ADVANCED PHP AND SQL WITH SESSION**
* PHP server sessions.

Advanced SQL (Structured Query Language) programming language.

* **ADVANCED C / C++ and JAVA PROGRAMMING**
* **NETWORKING HARDWARE AND PROTOCOL**

Open Systems Interconnect (OSI Model) (Ethernet, wireless)

Wired network fundamentals (IPV4, Subnetting, Routing, DHCP and Switching)

* **ADVANCED NETWORK MONITORING TOOLS INTRODUCTION**
* (Wireshark monitoring and Linux monitoring tools)
* **ADVANCED CISCO NETWORKING**

Advanced Packertracer and CLI (Command Line Interface)

VLANS (Virtual Local Area Networks)

* **LINUX CLUSTERS**

Linux Docker and Kubernetes installation and configuration.

* **MICROSOFT SERVER**

Windows SERVER installation and networking. (Virtual Machine and on hard drive)

* **ADVANCE MICROCONTROLLERS TECHNIQUES**

Arduino radio and Ethernet control

* **CULMINATING SMALL GROUP OR INDIVUDAL PROJECT**