



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 an 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.
- **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 on 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)
- **HTML YEAR 2**
- **AUTHENTICATION**
Google.com, Github.com, Microsoft.com(Imagine) and Amazon.com (<https://www.awseducate.com/Registration>) Year 1 and Year 2

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 PacketTracer 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)
- **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 OR INDIVIDUAL PROJECT**