



SOFTWARE & NETWORK SECURITY FUNDAMENTALS

The course introduces the candidates to network and software security concepts and provides them with corresponding hands-on experience.



Objectives

Make the participants understand network and software security concepts by introducing them to analysing protocol headers, reverse engineering concepts, attack lifecycle, attack and defence mechanisms, analysing malicious binaries, and security software such as firewalls, IDS & IPS etc.



Expected Outcomes

Understanding of

- Definitions and concepts related to network security such as types of attacks, firewalls, IDS, and security protocols.
- Definitions and concepts related to software security including reverse engineering, static & dynamic binary analysis, and attack & defence mechanisms.

Hands-on experience with using various security analysis tools:

- Wireshark, NMAP, ELF- and PE-File format analysis tools
- IP tables, Reverse engineering, and binary analysis tools.
- Dynamic analysis using GDB
- Attack techniques such as stack & heap overflows, return-to-libc & ROP.
- Various defence mechanisms at the binary and operating system level.

Duration

5 days

- **3 Days:** training online (VILT)
- **2 Days:** Physical training

Dates

- **5 days:** 3rd to 7th March 2025
- **2 days:** 2nd to 4th April 2025

Participant Prerequisites

- Inclination and passion towards making a career in cyber security.
- Should have studied fundamentals of computer networking, operating system concepts and C/C++ programming concepts.
- Having an understanding of x86 assembly is an added advantage.

Modules/Topics to be Covered

- Introduction to Security Engineering & Network Security
- Security Protocols
- Introduction to Penetration Testing
- Malware Terminology
- Firewalls, IDS and IPS and Antivirus technologies
- Malware Analysis
- Reverse Engineering concepts and file formats
- Defence Mechanisms, Stack Overflow and Stack-based buffer overflow
- Return-to-libc and ROP

Target Participants

Students

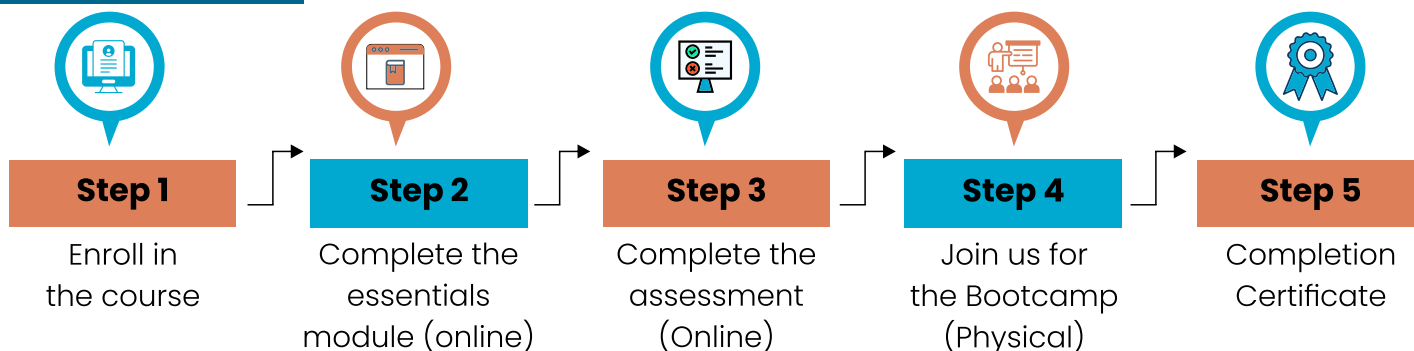
Expected No. of Participants

40

Mode of Delivery

Essentials Module: Online
Bootcamp: Offline

Process Flow



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Register at: ▶▶▶▶▶

<https://bootcamps.isea.app/register>