Cybersecurity

ICTC's WIL Digital Cybersecurity course is comprised of experiential learning activities via virtual machine, and an introduction to the National Initiative for Cybersecurity Education (NICE) framework. Students will also practice forensic digital analysis through a completion of a case study.

Modules		Lessons	Learning Objectives	
Module 1	**Active Foundations of Cybersecurity**	• Windows hardening (virtual lab) • Suspicious and hidden files (virtual lab) • Introduction to the NICE Cybersecurity Workforce Framework	• To assess and configure basic Windows Security Settings on a Windows 10 pro machine according to best practices. • Detect basic security risks and threats and apply the appropriate hardening strategies to mitigate the risks • Introduce learners to the NICE framework	Padlet discussion Quiz
Module 2	**The Language of Cybersecurity**	• Steganography (virtual lab) • Encoding-decoding (virtual lab) • Oversee and Govern	• Detect files with hidden data using Notepad, Strings, 7-Zip and Steghide • Hide data in files with 7-zip and Steghide • Recognize common types of encoding: base64, hexadecimal, URL and rot 13 • Review the category "Oversee and Govern"	Padlet discussion Quiz
Module 3	**Investigative Algorithms of Cybersecurity**	• Hashes (virtual lab) • Analyze and Investigate	• Creating and understanding the purpose of a hash, and its common use cases • Provide different types of cybersecurity analysis recognized within the NICE Framework	Padlet discussion Quiz
Module 4	**Critical Defense in Cybersecurity**	• Basic Network Analysis (virtual lab) • Collect, Operate and Maintain	• Discover fundamental characteristics of network data using Wireshark • Analyze network data to identify certain protocols • Gain a basic understanding of systems management philosophies	Padlet discussion Quiz
Module 5	**Attack methods of Cybersecurity**	• Firewalls (virtual lab) • Protect and Defend	• Create firewall rules based off of intended use of a server • Explore career opportunities and employment requirements related to protection and defence in cybersecurity	Padlet discussion Quiz
Module 6	**Strategic methods of Cybersecurity**	• Active defense (virtual lab) • Securely Provision	• Understand the importance of building and operating secure IT systems and associated networks • Understand the challenges facing IT professionals	Padlet discussion Quiz

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