



CyBOK Showcase Event | February 28, 2023

# Educational Resources in Support of the CyBOK 1.1 Curriculum

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# Welcome



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Completed Work on 2 Prior  
Projects



# CyBOK 1.1 Case Studies

100% of CyBOK 1.1 KA Coverage

14 KAs with 3 or more case studies (each)

Cat.	Knowledge Area	Case Study Mapping	CyBOK version
Human, Organizational and Regulatory Aspects	Risk Management & Governance	ACME Water	1.0
		Archetypal Users – Personae non Gratae	1.0
		FAA ERAM Outage	1.0
		GPS Spoofing of UAV	1.0
		National Cybersecurity Governance	1.1
		National Grid SAP Adoption	1.0
		Organization Risk Management: The Widget Company	1.0
		Penetration Test	1.1
		Ransomware	1.1
		Secure LAN	1.1
	Law & Regulation	National Cybersecurity Governance	1.0
		Ransomware	1.1
	Human Factors	ACME Water	1.0
		FAA ERAM Outage	1.0
	Privacy & Online Rights	ACME Water	1.0
		Driver Assistance System Safety & Security	1.0
		Penetration Test	1.1
		Role Based Access Control	1.1
Attacks and Defences	Malware & Attack Technologies	Deciphering	1.0
		Mt. Gox Bitcoin Theft	1.0
		Penetration Test	1.1
		Ransomware	1.1
		Using Malware Analysis to Improve Security Reqs	1.1
		Wireshark	1.1
	Adversarial Behaviours	Heartland Payment System Breach	1.0
		Mt. Gox Bitcoin Theft	1.0
		Penetration Test	1.1
		Ransomware	1.1
	Security Operations & Incident Management	Heartland Payment System Breach	1.0
		Mt. Gox Bitcoin Theft	1.0
		National Cybersecurity Governance	1.1
		Penetration Test	1.1
		Ransomware	1.1
	Forensics	Mt. Gox Bitcoin Theft	1.0
		Wireshark	1.1

Cat.	Knowledge Area	Case Study Mapping	CyBOK version
Systems Security	Cryptography	Deciphering	1.1
		Mt. Gox Bitcoin Theft	1.0
		Penetration Test	1.1
	Operating Systems & Virtualisation Security	Deciphering	1.0
		Heartland Payment System Breach	1.0
		Penetration Test	1.1
		Secure LAN	1.1
	Distributed System Security	Driver Assistance System Safety & Security	1.0
		Secure LAN	1.1
		Wireshark	1.1
	Formal Methods for Security	Deciphering	1.1
		Tokeneer ID Station Project	1.0
Software Platform Security	Authentication, Authorisation & Accountability	ACME Water	1.0
		Heartland Payment System Breach	1.0
		Mt. Gox Bitcoin Theft	1.0
		Penetration Test	1.1
	Software Security	Driver Assistance System Safety & Security	1.0
		FAA ERAM Outage	1.0
		Penetration Test	1.1
	Web & Mobile Security	Driver Assistance System Safety & Security	1.0
		Role Based Access Control	1.1
		Secure LAN	1.1
	Secure Software Lifecycle	ACME Water	1.0
		Aircraft Service Application	1.0
		Drone Swarm	1.0
		National Grid SAP Adoption	1.0
		Secure Acquisition	1.0
		SQUARE	1.0
		Tokeneer ID Station Project	1.0
Infrastructure Security	Applied Cryptography	Using Malware Analysis to Improve Security Reqs	1.1
		Deciphering	1.1
	Network Security	Penetration Test	1.1
		Role Based Access Control	1.1
		Secure LAN	1.1
	Hardware Security	Wireshark	1.1
		Driver Assistance System Safety & Security	1.0
	Cyber-Physical Sys Security	Driver Assistance System Safety & Security	1.0
		Physical Layer & Telecommunications	1.1
		Penetration Test	1.1
		Secure LAN	1.1
		Wireshark	1.1



# Data on Classroom Use

Experiences and Educator Feedback of **six Case Studies**

**Penetration Test Case Study** became key driver in student enrollment, leading to direct job placements.

Quantitative Data on Classroom Application of  
**Driver Assistance System Case Study**

T-Test shows significant ( $p < 0.05$ ) difference between the 2021 and 2020 shows increase in students' learning outcome.

	2021	2020	2019
Mean	91.88%	74.38%	42.15%
Variance	20.38%	28.50%	20.86%
Sample Size	16	16	31
dF	27		
F	0.5113 (unequal variances)		
Student's T	0.0318		
Cohen's d	0.706 (medium-large effect size)		

Current Project...



# CSC333: Cryptography/Privacy/Security (Development)

## Current Project:

- A ready-to-deploy course shell on the digital learning environment Brightspace. The course shell would contain modules for a 6-week asynchronous online course, with assignments, course readings, and course infrastructure such as discussion forums and peer review instructions. Supplement these materials with videos such as those produced by Cliff Schreuders for CyBOK.

Slim Announcements Widget ▾

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Course Information

29% 5 of 17 Topics Completed



Ice Breaker Activities

0% 0 of 6 Topics Completed



Module One

20% 2 of 10 Topics Completed



Module Two

7% 1 of 15 Topics Completed



Module Three



Module Four

Updates ▾

Calendar ▾

Wednesday, February 22, 2023

Upcoming events

MAY 7:59 PM  
28 Introductions - Due

MAY 7:59 PM  
28 Module One - Due

MAY 7:59 PM  
28 Your First Assignment - Due

MAY 11:59 PM  
28 Quiz #1: Introduction to Security - Due

MAY 11:59 PM  
28 Quiz #2: Malware and Social Engineering Attacks - Due

MAY 11:59 PM

... including deadlines and resources

May				June			
Mon 01				Thu 01	Application and Networking-Based Attacks - Application Attacks - Networking-Based Attacks		22
Tue 02				Fri 02	Host, Application, and Data Security - Securing the Host - Securing the Host - Application Security - Securing Data		23
Wed 03				Sun 03			24
Thu 04				Sun 04	Quiz 3 & 4 due Module 2 Discussions due Assignment #1 due Project Milestone #1 due		25
Fri 05				Mon 05	Basic Cryptography - Defining Cryptography - Cryptographic Algorithms - Using Cryptography	CompTIA Security+ book Chapter 5 & 7	26
Sat 06				Tue 06		Additional Videos and Resources	27
Sun 07				Wed 07	Network Security Fundamentals - Security Through Network Devices - Security Through Technologies - Security Through Network Design Elements		28
Mon 08				Thu 08			29
Tue 09				Fri 09			30
Wed 10				Sat 10			31
Thu 11				Sun 11	Quiz 5 & 6 due Module 3 Discussions due Assignment #1 feedback due Assignment #2 due Project Milestone #2 due		1
Fri 12				Mon 12	Administering a Secure Network - Common Network Protocols - Network Administration Principles - Securing Network Applications and Platforms	CompTIA Security+ book Chapter 8 & 9	2
Sat 13				Tue 13		Additional Videos and Resources	3
Sun 14				Wed 14	Mobile Device Security - Types of Mobile Devices - Mobile Device Risks - Securing Mobile Devices - Mobile Device App Security		4
Mon 15				Thu 15			5
Tue 16				Fri 16			6
Wed 17				Sat 17			7
Thu 18				Sun 18	Quiz 7 & 8 due Module 4 Discussions due Assignment #2 feedback due Assignment #3 due Project Milestone #3 due		8
Fri 19				Mon 19	Access Control Fundamentals - What Is Access Control? - Implementing Access Control - Authentication Services	CompTIA Security+ book Chapter 11 & 12	9
Sat 20				Tue 20		Additional Videos and Resources	10
Sun 21				Wed 21	Authentication and Account Management - Authentication Credentials - Single Sign-On - Account Management		11
Mon 22	Introduction to Security - Challenges of Securing Information - What Is Information Security? - Who Are the Attackers?	All Assignments and Quizzes Available (except Project)	Summer Session 1-2 Instruction Begins	Thu 22			12
Tue 23			CompTIA Security+ book Chapter 1 & 2	Fri 23			13
Wed 24	Malware and Social Engineering Attacks - Attacks Using Malware - Social Engineering Attacks	Ice Breaker Activities due	Additional Videos and Resources	Sat 24			14
Thu 25				Sun 25	Quiz 9 & 10 due Module 5 Discussions due Assignment #3 feedback due Assignment #4 due Project Milestone #4 due		15
Fri 26				Mon 26	Vulnerability Assessment - Assessing Vulnerabilities - Vulnerability Scanning vs. Penetration Testing - Third-Party Integration - Mitigating and Deterring Attacks	CompTIA Security+ book Chapter 15	16
Sat 27				Tue 27		Additional Videos and Resources	17
Sun 28		Quiz 1 & 2 due Module 1 Discussions due		Wed 28			18
Mon 29			Memorial Day - No Classes	Thu 29			19
Tue 30	Application and Networking-Based Attacks - Application Attacks - Networking-Based Attacks	Project Description Available	CompTIA Security+ book Chapter 3 & 4	Fri 30	Project Final deliverables: Penetration Testing Plan / Implementation / Report due	Quiz 11 due Module 6 Discussions due Assignment #4 feedback due Project due	20
Wed 31	Host, Application, and Data Security - Securing the Host - Securing the Host - Application Security - Securing Data		Additional Videos and Resources				

[https://www.cybok.org/resources\\_developed\\_through\\_funded\\_projects/](https://www.cybok.org/resources_developed_through_funded_projects/)

# Current Project:

- Development and analysis of a survey of industry trainers and university instructors to assess existing classroom coverage of CyBOK v1.1 topics. We would also use the survey to learn what additional resources could be brought to bear in order to help the transition of CyBOK v1.1 into broad classroom use.

[https://www.cybok.org/resources\\_developed\\_through\\_funded\\_projects/](https://www.cybok.org/resources_developed_through_funded_projects/)





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