

CIST 2611 - Network Defense and Countermeasures (version 201512L)

Course Title Course Development Learning Support

Network Defense and Countermeasures Standard No

Course Description

Students will learn how to plan, design, install and configure firewalls that will allow key services while maintaining security. This will include protecting the Internal IP services, configuring a firewall for remote access, managing a firewall, and detecting and preventing network intrusions.

Pre-requisites

(CIST 1401 or CIST 2451 or CIST 2441)

Pre-requisites (CIST 1401 or CIST 2451 or CIST 2441)

CIST 1601 - Information Security Fundamentals (201003L)

Regstr. Co-requisites

Regstr. Co-requisites: None

True Co-requisites

True Co-requisites: None

Course Length

	Lecture Contact Time	Regular Lab Type	Reg. Lab Contact Time	Other Lab Type	Oth. Lab Contact Time	Total Contact Hrs
Contact Hours Per Week	2 hrs	Lab	4 hrs	N/A	0 hrs	6 hrs
Contact Min/Hrs Per Semester	1500 min		3000 min		0 min	90 hrs
	Lecture Credit Hours	Lab Credit Hours	Total Credit hours	WLU		
Semester Credit Hours	2	2	4	142.5		

Competencies & Outcomes

Order Description

1 Plan and Design of a Firewall

Order	Description	Learning Domain	Level of Learning
1	Define and describe a firewall.	Cognitive	Knowledge
2	Demonstrate an understanding of the different types of firewall protection.	Psychomotor	Guided Response

2 Configuration and Installation of a Firewall

Order	Description	Learning Domain	Level of Learning
1	Identify and describe router-based firewalls.	Cognitive	Knowledge
2	Identify and describe workstation-based firewalls.	Cognitive	Knowledge

3	Identify and describe split-screened subnet architecture.	Cognitive	Knowledge
4	Demonstrate an understanding of and configure a packet-filtering architecture.	Psychomotor	Guided Response

3 **Outgoing Services Related to Firewalls**

Order	Description	Learning Domain	Level of Learning
1	Demonstrate an understanding of and configure user authentication.	Psychomotor	Guided Response
2	Demonstrate an understanding of and configure data encryption.	Psychomotor	Guided Response
3	Demonstrate an understanding of and configure application-layer firewalls.	Psychomotor	Guided Response
4	Explain using perimeter network security (DMZ) for outgoing services.	Cognitive	Knowledge

4 **External Services**

Order	Description	Learning Domain	Level of Learning
1	Demonstrate an understanding of and configure World Wide Web or HTTP services.	Psychomotor	Guided Response
2	Demonstrate an understanding of and configure E-Mail or SMTP.	Psychomotor	Guided Response
3	Demonstrate an understanding of and configure file transfer protocol.	Psychomotor	Guided Response

5 **Internal IP Services**

Order	Description	Learning Domain	Level of Learning
1	Explain using perimeter network security (DMZ) to protect IP services.	Cognitive	Knowledge
2	Demonstrate an understanding of and configure data filtering, traffic control and user authentication.	Psychomotor	Guided Response
3	Demonstrate an understanding of and configure access control and network monitoring.	Psychomotor	Guided Response

6 **Firewall / Remote Access**

Order	Description	Learning Domain	Level of Learning
1	Define and describe remote access service.	Cognitive	Knowledge
2	Describe a VPN (Virtual Private Network).	Cognitive	Comprehension
3	Demonstrate an understanding of TACACS+ and RADIUS (Remote Authentication Dial-In User Service).	Psychomotor	Guided Response

7 Intrusion Detection and Prevention

Order	Description	Learning Domain	Level of Learning
1	Explain intrusion detection and prevention	Cognitive	Comprehension
2	Define the difference between host and network based detection	Cognitive	Knowledge
3	Demonstrate an understanding of the difference between passive and active detection	Psychomotor	Guided Response
4	Demonstrate tools used in intrusion detection and prevention	Psychomotor	Guided Response