Cybersecurity– Certificate

Spring 2019 Outcomes

Old name: Network Security - Certificate

*Fall 2019*

1. Analyze known security incidents to trace and document the steps in the incident.
2. Use mechanisms available in an operating system to control access to resources.
3. Construct input validation.
4. Install and configure firewall rules based on business policies.
5. Investigate various countermeasures and security controls to minimize risk and exposure.
6. Demonstrate the use of proper SQL commands to retrieve specific data from a database.
7. Use protocol analyzers to identify information encapsulated in a data packet.
8. Write scripts to perform specific functions within a host and networked computing environment.
9. Examine ethical issues related to cybersecurity.

**Course Outcomes**

CPTR2224 - Linux I

1. Create Linux accounts.
2. Manage Linux accounts.
3. Prepare appropriate documentation.
4. Analyze graphical environments.
5. Write simple shell scripts.
6. Manage application software.
7. Manage security.
8. Evaluate fault-tolerance solutions.
9. Use appropriate software and commands.
10. Manage printing.

CPTR1106 - Microcomputer Databases

1. Create database reports.
2. Create table relationships.
3. Define referential integrity.
4. Create database queries.
5. Manipulate database data.
6. Perform data import operations.
7. Create data entry forms.
8. Demonstrate database programming concepts.
9. Create database tables.
10. Create and manage a switchboard.
11. Create database macros.

CPTR1001 - Introduction To Programming and Scripting

1. Describe the features and syntax of a programming language.
2. Understand how software can be written to solve business problems.
3. Use debugging and testing to create error-free code.
4. Demonstrate industry standard code development techniques.
5. Develop logic structures.
6. Develop loop structures.
7. Develop control structures.
8. Understand datatypes.
9. Understand functions.
10. Create, update, and process data files.
11. Understand techniques required for security in computer programming.

CPTR2236 - Network Security

1. Identify network security threats.
2. Administer encryption and authentication for wireless networks.
3. Examine protecting advanced communications.
4. Identify Web related threats.
5. Perform network hardening.
6. Examine e-mail threats.
7. Configure VPNs for secure sessions.
8. Analyze remote access security and social engineering threats.
9. Identify software exploits.
10. Examine major types of attacks on information systems.
11. Identify the factors in a secure network strategy.
12. Practice securing web communications utilizing SSL/TLS.
13. Examine cryptography.
14. Apply IPSec policies.
15. Explore the basic computer forensics methods.
16. Plan a patch management strategy for network servers.
17. Analyze the role of firewalls, routers and switches in security.
18. Examine intrusion detection systems.

CPTR1108 - CISCO 1

1. Compare various networking models.
2. Compare the various types of networking media.
3. Demonstrate a working knowledge of the TCP/IP protocol stack.
4. Recognize the components involved with assembling a network.
5. Design and assemble small working networks.
6. Recognize the tools necessary to troubleshoot networks.
7. Solve network hardware and software problems.
8. Use network monitoring tools to troubleshooting equipment failures.
9. Explain IP addressing and subnetting.

CSEC2210 - Security Breaches and Countermeasures

1. Describe threats to and vulnerabilities of systems.
2. Perform risk management functions.
3. Plan a security assessment using current practices.
4. Perform a security assessment using current practices.
5. Utilize current tools to assess network security.
6. Conduct a penetration test using current practices.
7. Employ information reconnaissance techniques.
8. Conduct an IT audit using current best practices.
9. Implement countermeasures for networks.
10. Complete written documentation of threats.
11. Evaluate methods of non-network methods to gain network access.
12. Analyze methods used by attackers to avoid detection.
13. Conduct attacks on a controlled network.
14. Demonstrate ethical behavior.

CPTR2234 - Linux II

1. Manage network communication.
2. Manage Internet services.
3. Manage server services.
4. Manage log files.
5. Evaluate security solutions.
6. Evaluate ethical choices.
7. Manage system start up.
8. Apply best practices to server operation.
9. Manage messaging.
10. Manage Linux client services.
11. Manage Linux security.

CSEC2228 - Network Defense

1. Outline physical security measures to current best practices.
2. Identify personnel security practices and procedures.
3. Explain software security best practices.
4. Outline network security.
5. Describe administrative security procedural controls.
6. Define cryptosecurity.
7. Indicate proper key management procedures.
8. Interpret transmission security models.
9. Name the elements of TEMPEST security.
10. Complete firewall cryptography strategies.
11. Distinguish firewall cryptography strategies.
12. Construct a packet filtering firewall.
13. Implement a proxy server.

CPTR1118 - CISCO 2

1. Maintain router operating system.
2. Analyze a router boot process.
3. Examine components in a router.
4. Use router command line editing.
5. Identify layer three routing protocols.
6. Configure routing protocols.
7. Configure a router to connect to a network.
8. Develop an access list.
9. Configure access lists.
10. Troubleshoot router connectivity.
11. Troubleshoot a routed network.

CPTR2230 - Structured Query Language

1. Create a subquery in a SQL statement.
2. Join multiple tables in a SQL query utilizing the WHERE clause.
3. Create group restrictions utilizing the GROUP BY and HAVING command in a SQL query.
4. Utilize the COUNT, SUM, MAX, and MIN statistical functions in a SQL query.
5. Specify query selection criteria utilizing the FROM and WHERE clauses.
6. Correct data errors and delete records in a table utilizing the UPDATE and DELETE commands.
7. View data in a table utilizing the SELECT command.
8. Specify the INSERT command in SQL to load data into tables.
9. Specify data types in SQL.
10. Utilize the CREATE TABLE and DROP TABLE SQL commands.
11. Use the ORDER BY command and DESC operator to sort results in a SQL query.
12. Describe integrity constraints and support.
13. Specify compound conditions in a SQL select query.
14. Utilize comparison operators in a SQL select query.