



Password Technical College
44 Calle Dr. Santiago Veve
San Germán, PR 00683
<http://passwordtech.edu20.org>

Syllabus

COURSE GENERAL INFORMATION

Course Title: Cybersecurity Essentials

Code: CYES 1010

Contact Hours: 60 hrs.

Credits: 2.0

Out of Class Hours: 15 hrs.

Term: First Term

Teacher: Joel Vargas Ramos

Email: jvargas@passwordpr.com

Course Description

The Cybersecurity Essentials course is designed for students who are interested in pursuing more advanced studies the field of cybersecurity. This preparatory course provides with an overview of the cybersecurity field. This class explores the characteristics of and tactics used by cyber criminals. It then delves into the technologies, products, and procedures cybersecurity professional use to combat cybercrime.

Objective

Cybersecurity Essentials covers foundation knowledge and essentials skills in all security domains in the cyber world information security, systems security, network security, mobile security, physical security, ethics and laws, related technologies, defense and mitigation techniques use in protecting businesses.



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Skills Distribution

- Describe the characteristics of criminals and experts in the cybersecurity world.
- Describe how the principles of confidentiality, integrity, and availability as they relate to data states and cybersecurity countermeasures.
- Describe the tactics, techniques and procedures used by cyber criminals.
- Describe how technologies, products and procedures are used to protect confidentiality.
- Describe how technologies, products and procedures are used to ensure integrity.
- Describe how technologies, products, and procedures provide high availability.
- Explain how cybersecurity professionals use technologies, processes and procedures to defend all components of the network.
- Explain the purpose of laws related to cybersecurity.

| Chapters | Modules | Works |
|---|--|---|
| Chapter 1. Cybersecurity: A World of Experts and Criminals | <ul style="list-style-type: none"> • The Cybersecurity World • Cyber Criminals versus Cybersecurity Specialists • Common Threats • Spreading Cybersecurity Threats | <ul style="list-style-type: none"> • Pre-Test Comprehension Test • Homework 1 |
| Chapter 2. The Cybersecurity Cube | <ul style="list-style-type: none"> • The Three Dimensions of the Cybersecurity Cube • CIA Triad • States of Data • Cybersecurity Countermeasures | <ul style="list-style-type: none"> • Quiz 1 • Homework 2 |
| Chapter 3. Cybersecurity Threats, Vulnerabilities and Attacks | <ul style="list-style-type: none"> • Malware and Malicious Code • Deception • Attacks | <ul style="list-style-type: none"> • Laboratory 1 |
| Chapter 4. The Art of Protecting Secrets | <ul style="list-style-type: none"> • Cryptography • Access Controls • Obscuring Data | <ul style="list-style-type: none"> • Mid-Term Exam |
| Chapter 5. The Art of Ensuring Integrity | <ul style="list-style-type: none"> • Types of Data Integrity Controls • Digital Signatures • Certificates • Database Integrity Enforcement | <ul style="list-style-type: none"> • Quiz 2 • Laboratory 2 |
| Chapter 6. The Five Nines Concept | <ul style="list-style-type: none"> • High Availability • Measures to Improve Availability • Incident Response • Disaster Recovery | <ul style="list-style-type: none"> • Homework 3 |
| Chapter 7. Protecting a Cybersecurity Domain | <ul style="list-style-type: none"> • Defending Systems and Devices • Server Hardening • Network Hardening | <ul style="list-style-type: none"> • Quiz 3 • Laboratory 3 |



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|--|--|---|
| | <ul style="list-style-type: none">Physical and Environmental Security | |
| Chapter 8. Becoming a Cybersecurity Specialist | <ul style="list-style-type: none">Cybersecurity DomainsUnderstanding the Ethics of Working in Cybersecurity | <ul style="list-style-type: none">Post-Test Comprehension |

Evaluation Criteria

| CRITERIA | Grade total |
|-----------------------------|-------------|
| Mid-Term Exam | 100 |
| Final Exam | 100 |
| Quizzes | 100 |
| Homework's and Laboratories | 100 |
| Assistance | 100 |
| | |
| Total | 500 |

*5 Points less for each non-excused absence.

Assignments are always due in class on the day designated. You are responsible for any work lost due to technical problems, etc. Late papers will lose a letter grade for each day that they are late. Any exceptions must be properly documented and discussed in advance for an extension to be arranged.

Educational Resources

- Neo LMS (2022). Cybersecurity Essentials. *passwordtech.edu20*.

<https://passwordtech.edu20.org/>

- Cisco Network Academy (2022). Cybersecurity Essentials. *Netacad*.

<https://www.netacad.com/>

Notes

• **Reasonable Accommodation:** Any student who requires a reasonable accommodation should do the request at the beginning of the course or as soon as he / she acquires knowledge of what it requires, through the Professor in charge and this notifying the Academic Director.

• **Honesty, fraud, plagiarism:** The lack of honesty, fraud, plagiarism and / or any other inappropriate behavior in relation to the student's academic performance constitute violations of the Institution's Catalog, its Rules of Conduct and Student Duties. Major infractions, as determined by the Catalog, may result in the suspension of the Institution for a definite time or permanent expulsion as stipulated in the Norms of Conduct and Duties of the Student.