

Grosse Pointe Public Schools Curriculum Template

Content Area: Cybersecurity I-II

Grade Level: 10-12

Unit of Study: There has never been a greater need for professionals trained in cybersecurity. In today's world everything is a target - from servers, computers, phones and routers to refrigerators and light bulbs. This course is designed to prepare students for certification in this field including Certified Ethical Computer Hacker. Students learn how to select appropriate hardware and software to provide protection against known security threats. Students will have access to the Cisco NetAcademy coursework and TestOut.

Diversity will be an integral component in the cybersecurity program. The cybersecurity program will be partnering with multiple non-profit organizations that specialize in closing the gender and race gap in the computer science field. It is important to show students the various paths they can take to have a successful career in cybersecurity.

Targeted Standards/Content:

- **The standards for these courses will be based off of the CTE state standards for Computer and Information Systems Security/Assurances**

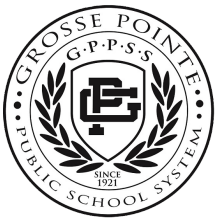
<http://ctenavigator.org/reports/segments/state>

Key Concepts:

- Needs and requirements for security of information systems and benefits of their implementation should be recognized.
- Responsibility for the security of information systems and networks.
- Determine ways to prevent, detect and respond to security incidents
- Develop technology risk assessments and conduct security design and

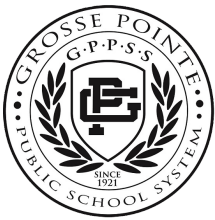
Student Learning Targets:

- I can create security policies for various organizations.
- I can conduct risk assessments and predict how those risks impact potential businesses.
- I can create various systems for checking the security of data, software and firmware.
- I can create incident response and recovery plans for individual and organizations.
- I can look for vulnerabilities in an organization's current security program.
- I can recognize and analyze potential IT security threats and develop security requirements.
- I can identify critical functions in a business environment.
- I can investigate both internal and external threats for organizations.
- I can create a vulnerability



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<p>Implementation protocols.</p> <ul style="list-style-type: none">• Security should be incorporated as an essential element of information systems and networks.• Work should be conducted in an ethical manner.	<p>management plan.</p> <ul style="list-style-type: none">• I can manage and create systems for continuous monitoring.• I can detect event data and determine the attacks target and methods.• I can act as a responsible and contributing citizen and employee.• I can model integrity, ethical leadership and effective management.• I can utilize critical thinking to make sense of problems and persevere in solving them.• I can plan my education and career path to personal goals. <p>Checking for Understanding/Assessments:</p> <ul style="list-style-type: none">• Students will be completing various quizzes in the NetAcad program.• Virtual lab work will also correlate to the NetAcad programs. When the quizzes and course work are completed students will earn badges and when the program is complete they will earn various certificates.• Unique competitions like capture the flag, cyber league and other virtual simulations.
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Essential Questions/Intellectual Processes & Skills - [Depth of Knowledge](#) and [Webb's Depth of Knowledge with CCSS](#):

Essential Questions

What actions can be taken to improve network, personal, and data security? What are the actions of responsible digital citizen? How does understanding previous cyber attacks prepare a student for future attacks? How does a cybersecurity expert develop effective procedures? How do you conceptualize, design and diagram possible solutions for a given networking environment? Why do you need to collaborate with various groups to investigate a cyber attack? How do students analyze Internet security issues and apply them to network design problems? How do students design an appropriate risk analysis for a given business in a particular environment?

Exit Skills: This program is designed to train students for and guide them toward a number of industry recognized certifications including EC Council Certified Ethical Hacker, CompTIA A+, CompTIA Security+ and other industry recognized certifications.