Santiago High School
Corona-Norco Unified School District

Cyber Security 2 A&B
2021-2022 Semester 1 & 2

Course Syllabus

Instructor Mr. Gallery
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Hours Period 1

Text(s)/Resource(s):

TestOut Security Pro 7.0
TestOut.com

Description:

This course is the second in a three-year pathway. It will focus on understanding the vulnerabilities of information systems and how to protect them. It will also explore some of the careers in the Cyber Security field.

Goals:

Upon successful completion of the course students should be able to:

- Identify some of the vulnerabilities present in information systems.
- Understand how mitigate and protect information systems and data from cybercriminals
- Understand some of the careers available in Cyber Security.
- Participate in critical discussions and reviews, assessing Cyber Security and Information Technology issues using appropriate terminology.

Student Expectations:

- **Academic Honesty:** Please practice honesty and integrity in completing all your assignments. All students involved in cheating will be subject to lowered grades.
- **Attendance:** Please come to class and be on time! Excessive absences and tardiness (for any reason) will also lead to lowered academic and citizenship grades.
- **Assignments:** Successfully completing all classroom and homework assignments on time are critical to your success in this class.
- **Keep Your Work!** It is extremely important to save your files and keep all your assignments until after the end of the school year.

Evaluation:

Your grade will be based on the following components:

- Classwork (50%) – Class and Online Activities & Section Quizzes
- Tests (25%) – Chapter Tests and Final Exam (*Semester 2*)
- Participation (25%) – Attendance, Class Participation, Staying on Task

Classwork primarily consists of the ***TestOut Security Pro*** coursework at ***TestOut.com***. The coursework is broken up into 14 chapters and each contain several sections. Each section is comprised of a combination of *instructional videos*, *fact sheets*, *demonstration videos*, *labs, and a quiz*.

Each section is graded as a whole. To receive credit for a section:

- all instructional and demonstration videos must be viewed completely (no skipping)
- all fact sheets must be read completely (not skimmed)
- all activities, labs, and the quiz must be completed with a score of 80% or better
- all previous sections must be completed

The due date for each section will be listed in Assignments section of Student Connect and on the Score Report accessible through Canvas. Classwork is due by the end of the day of the due date. Late work will be accepted, but the score may be reduced.

Tests are given at the end of chapters 2, 4, 5, 6, 8, 9, 11, 12, & 14. Most tests will contain 25 questions, but shorter chapters may have fewer. Tests will be given at a set time for all students. Make ups will not be given except in the case of absence. A Certification Exam will be given at the end of the year and will act as the final.

Participation points are given each week in two categories: classwork and attendance.

Classwork (10 points) - If you are all caught up with the classwork, you automatically receive full credit for the week. If you are not caught up with classwork, Work Participation points are earned as follows (9 points maximum):

2 points for completing weekly progress survey
2 points for each completed section in TestOut (up to 6 points)
1 point for one or more partially completed sections

Attendance (10 points) - Every student starts the week with 10 points. If you are tardy or absent (unexcused), 1 point will be deducted for each half hour or part thereof for which you are not present. Points may also be deducted if you are off task.

Only 8 points are possible for Classwork and Attendance during 4-day school weeks

Grades:

Grading is done on a points-based system. Total points earned are divided by the total points available. In general, exams and larger assignments are worth more points. Students will have limited opportunity for extra credit throughout the school year.

Grading Scale:

A+	97.0 – 100%	B+	87.0 – 89.9%	C+	77.0 – 79.9%	D+	67.0 – 69.9%
A	93.0 – 96.9%	B	83.0 – 86.9%	C	73.0 – 76.9%	D	63.0 – 66.9%
A-	90.0 – 92.9%	B-	80.0 – 82.9%	C-	70.0 – 72.9%	D-	60.0 – 62.9%
						F	less than 60%

Class Rules:

Food and Drinks – Food and drinks are allowed in class if students keep the class clean. Drinks must be kept on the floor (*due to the computer keyboards*)

Electronic Devices – Phones and other electronic devices are allowed in class if they do not become a distraction (texting, playing games, checking social media, web browsing, etc.). Students who are regularly off task or behind in their work, will have their phone privileges revoked. However, during instructional time and tests, electronic devices are not to be used at all (unless directed to by the teacher).

Computer Use – The classroom computers and devices are to be used for classwork only. Do not download any files or programs not related to your classwork. Do not install any program without permission of the teacher. Do not run any unapproved programs, even from a network or external drive. Do not view or download any images, videos, or sound files that are offensive, racist, promote violence or drug use, etc.

Failure to follow these rules will result in one or more of the following disciplinary actions: Loss of participation points, parent notification, lunch detention, or loss of privileges.

Course Outline:

Week(s):	**Topic**
Semester 1 (Fall)	
1	Chapter 1 – Introduction
2 - 3	Chapter 2 – Threats, Attacks, and Vulnerabilities
4	Chapter 3 – Physical *(Threats and Protection)*
5 - 6	Chapter 4 – Networks and Host Design and Diagnostics
7 - 11	Chapter 5 – Devices and Infrastructure
12 - 17	Chapter 6 – Identity, Access, and Account Management
Semester 2 (Spring)	
1 - 2	Chapter 7 – Cryptography and PKI (Public Key Infrastructure)
3 - 4	Chapter 8 – Wireless Threats
5 - 7	Chapter 9 – Virtualization, Cloud Security, and Securing Mobile Devices
8 - 9	Chapter 10 – Securing Data and Applications
10 - 12	Chapter 11 – Security Assessments
13 - 15	Chapter 12 – Incident Response, Forensics, and Recovery
16	Chapter 13 – Risk Management
17 - 18	Chapter 14 – Governance and Compliance
19	Certification Exam

*Timeline is an estimate. Other topics may be included.

CA CTE Information and Communications Technologies Standards – Information Support and Services Pathway

Students in the Information Support and Services pathway prepare for careers that involve the implementation of computer services and software, support of multimedia products and services, provision of technical assistance, creation of technical documentation, and the administration and management of information and communication systems. Mastery of information and communication technologies is the foundation for all successful business organizations today. Persons with expertise in information and communication technologies support and services are in high demand for a variety of positions in business and industry.

A1.0 Describe the role of information and communication technologies in organizations.
- A1.1 Describe how technology is integrated into business processes.
- A1.2 Identify common organizational, technical, and financial risks associated with the implementation and use of information and communication systems.
- A1.3 Model business processes using tools such as organization charts, flowcharts, and timelines.
- A1.4 Analyze and design business processes in a cycle of continual improvement.

A2.0 Acquire, install, and implement software and systems.
- A2.1 Identify and list the criteria and processes for evaluating the functions of information systems.
- A2.2 Investigate, evaluate, select, and use major types of software, services, and vendors.
- A2.3 Install software and setup hardware.
- A2.4 Define and use appropriate naming conventions and file management strategies.

A3.0 Access and transmit information in a networked environment.
- A3.1 Identify and apply multiple ways to transfer information and resources (e.g., text, data, audio, video, still images) between software programs and systems.
- A3.2 Validate and cite Internet resources.
- A3.3 Recognize where processes are running in a networked environment (e.g., client access, remote access).
- A3.4 Identify and describe the layered nature of computing and networking such as the Open Systems Interconnect (OSI) model.
- A3.5 Use multiple online search techniques and resources to acquire information.
- A3.6 Describe and contrast the differences between various Internet protocols: hypertext transfer protocol (http), hypertext transfer protocol secure (https), file transfer protocol (ftp), simple mail transfer protocol (smtp).

A4.0 Administer and maintain software and systems.
- A4.1 Use different systems and associated utilities to perform such functions as file management, backup and recovery, and execution of programs.
- A4.2 Use a command line interface.
- A4.3 Automate common tasks using macros or scripting.
- A4.4 Evaluate the systems-development life cycle and develop appropriate plans to maintain a given system after assessing its impact on resources and total cost of ownership (TCO).

A5.0 Identify requirements for maintaining secure network systems.
- A5.1 Follow laws, regulatory guidelines, policies, and procedures to ensure the security and integrity of information systems.
- A5.2 Identify potential attack vectors and security threats.
- A5.3 Take preventative measures to reduce security risks (e.g., strong passwords, avoid social engineering ploys, limit account permissions).
- A5.4 Use security software and hardware to protect systems from attack and alert of potential threats, anti-malware software, and firewalls.

A6.0 Diagnose and solve software, hardware, networking, and security problems.

- A6.1 Use available resources to identify and resolve problems using knowledge bases, forums, and manuals.
- A6.2 Use a logical and structured approach to isolate and identify the source of problems and to resolve problems.
- A6.3 Use specific problem solving strategies appropriate to troubleshooting, eliminating possibilities, or guess and check.
- A6.4 Evaluate support needs for different data and systems configurations.
- A6.5 Evaluate solution methods recognizing the trade-offs of troubleshooting vs. reloading, reimaging, or restoring to factory defaults using a sandbox environment.
- A6.6 Distinguish types of symptoms and which component's issue could exhibit those symptoms: the user, hardware, network, or software.
- A6.7 Diagram the underlying processes of a system that are likely involved in a problem.

A7.0 Support and train users on various software, hardware, and network systems.

- A7.1 Recognize the scope of duties ICT support staff have and tiered levels of support.
- A7.2 Describe and apply the principles of a customer-oriented service approach to supporting users.
- A7.3 Use technical writing and communication skills to work effectively with diverse groups of people, including users with less technical abilities.
- A7.4 Document technical support provided such as using a ticketing system.
- A7.5 Train users to assist them in being self-supporting: formal classes, one-on-one interactions, and process and how-to guides.

A8.0 Manage and implement information, technology, and communication projects.

- A8.1 Develop the purpose and scope of a project.
- A8.2 Acquire, use, and manage necessary internal and external resources when supporting various organizational systems.
- A8.3 Use various tools to manage projects involving the development of information and communication systems.
- A8.4 Analyze business problems by using functional and cost-benefit perspectives.
- A8.5 Design, develop, implement, and monitor a project by creating and integrating technologies.
- A8.6 Use a systematic method of continual improvement; plan, do, check, act (PDCA), total quality (TQ), or Six Sigma.

CA State CTE Information & Communication Technologies Anchor Standards

1.0 Academics

Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the Information and Communication Technologies academic alignment matrix for identification of standards.

2.0 Communications

Acquire and accurately use Information and Communication Technologies sector terminology and protocols at the career and college readiness level for communicating effectively in oral, written, and multimedia formats. (Direct alignment with LS 9-10, 11-12.6)

3.0 Career Planning and Management

Integrate multiple sources of career information from diverse formats to make informed career decisions, solve problems, and manage personal career plans. (Direct alignment with SLS 11-12.2)

4.0 Technology

Use existing and emerging technology, to investigate, research, and produce products and services, including new information, as required in the Information and Communication Technologies sector workplace environment. (Direct alignment with WS 11-12.6)

5.0 Problem Solving and Critical Thinking

Conduct short, as well as more sustained, research to create alternative solutions to answer a question or solve a problem unique to the Information and Communication Technologies sector using critical and creative thinking, logical reasoning, analysis, inquiry, and problem-solving techniques. (Direct alignment with WS 11-12.7)

6.0 Health and Safety

Demonstrate health and safety procedures, regulations, and personal health practices and determine the meaning of symbols, key terms, and domain-specific words and phrases as related to the Information and Communication Technologies sector workplace environment. (Direct alignment with RSTS 9-10, 11-12.4)

7.0 Responsibility and Flexibility

Initiate, and participate in, a range of collaborations demonstrating behaviors that reflect personal and professional responsibility, flexibility, and respect in the Information and Communication Technologies sector workplace environment and community settings. (Direct alignment with SLS 9-10, 11-12.1)

8.0 Ethics and Legal Responsibilities

Practice professional, ethical, and legal behavior, responding thoughtfully to diverse perspectives and resolving contradictions when possible, consistent with applicable laws, regulations, and organizational norms. (Direct alignment with SLS 11-12.1d)

9.0 Leadership and Teamwork

Work with peers to promote divergent and creative perspectives, effective leadership, group dynamics, team and individual decision making, benefits of workforce diversity, and conflict resolution such as those practiced in the Future Business Leaders of America and SkillsUSA career technical student organization. (Direct alignment with SLS 11-12.1b)

10.0 Technical Knowledge and Skills

Apply essential technical knowledge and skills common to all pathways in the Information and Communication Technologies sector, following procedures when carrying out experiments or performing technical tasks. (Direct alignment with WS 11-12.6)

11.0 Demonstration and Application

Demonstrate and apply the knowledge and skills contained in the Information and Communication Technologies anchor standards, pathway standards, and performance indicators in classroom, laboratory, and workplace settings, and through career technical student organizations such as Future Business Leaders of America and SkillsUSA.