Instructor: Date:

Course: Period/Section:

Chapter 16: Security, Privacy, and Safety

IC3 Certification Objectives

GS5

* **Computing Fundamentals**
  + **Domain 7.0** Security
    - **Objective 7.1** Know credential management best practices
    - **Objective 7.2** Know the basic threats to security of computers, data, and identity
    - **Objective 7.3** Understand the implications of monitoring software (surveillance)
    - **Objective 7.4** Understand connecting to secured vs. unsecured network (wired and wireless)
    - **Objective 7.5** Know the use of and importance of antivirus software
    - **Objective 7.6** Know the use of firewalls and basic settings
    - **Objective 7.7** Know e-commerce interactions and best practices
* **Living Online**
  + **Domain 1.0** Internet (navigation)
    - **Objective 1.1** Understand what the Internet is

GS4

* **Computing Fundamentals**
  + **Domain 3.0** Computer software and concepts
    - **Objective 3.4** Software tools
  + **Domain 4.0** Troubleshooting
    - **Objective 4.1** Software
* **Living Online**
  + **Domain 2.0** Networking concepts
    - **Objective 2.1** Internet connection
  + **Domain 4.0** Digital citizenship
    - **Objective 4.2** Legal and responsible use of computers
  + **Domain 5.0** Safe computing
    - **Objective 5.1** Secure online communication or activity

Section 16.1: Preventing Computer Threats

Learning Goals

* Identify types of computer threats.
* Discuss Internet security protocols.
* Explain how to protect stored data.

Terms

* adware
* antivirus software
* bot
* cache
* censorship
* completely automated public Turing test to tell computers and humans apart (CAPTCHA)
* computer virus
* computer worm
* cookies
* data vandalism
* hacking
* malware
* phishing
* pop-up
* ransomware
* scareware
* social engineering
* spyware
* Trojan horse

Materials

* *Principles of Information Technology* textbook
* G-W Learning companion website for *Principles of Information Technology*
* *Principles of Information Technology* Instructor’s Resources
* *Principles of Information Technology* Instructor’s Presentations for PowerPoint® (optional)

Engage

* Instruct students to read the Chapter 16 introduction. Discuss how the information relates to the overall theme of the unit.
* Have the students read the Section 16.1 introduction.
* Engage students by having them take the Check Your IT IQ, Chapter 16 pretest available on the G-W Learning companion website. Discuss which questions students were unable to answer.
* Assign the College and Career Readiness Reading Prep activity before students read the chapter to explore the suggested topics. Reading Prep activities give students opportunities to apply college and career readiness skills.
* Ask students the Essential Question at the beginning of the section, “What impact do computer threats have on our economy?” Engage students in a class discussion centered around their answers to the question.

Explore

* Review the vocabulary terms at the beginning of the section. Where have students encountered these terms before? Help students make educated guesses about the meanings of the terms with which they are least familiar.

Explain

* Use the Instructor’s Presentations for PowerPoint® for Chapter 16 as an outline for presenting the section.
* Explain computer threats, Internet security protocols, and protecting stored data.

Elaborate/Extend

* Assign the Internet Research activity to extend student understanding of the topics presented in this chapter. Have students complete their research as homework or during lab time.
* Use the Teamwork exercise at the end of the chapter to engage students with each other to solve a problem or make a group presentation.
* Use the Event Prep activity at the end of the chapter to extend student learning to experiences with career and technical student organizations.

Evaluate

* Assign Hands-On Examples 16.1.1–16.1.2.
* Conduct a formative assessment of student comprehension using the 16.1 Section Review. Assign Check Your Understanding questions at the end of the section.
* Have students complete the IC3 Certification Practice question found in the 16.1 Section Review. Engage the students in a conversation to ensure understanding of the topic and correct answer.
* Direct students to add their definitions of the terms in the Build Your Vocabulary exercise to their personal glossary.

Section 16.2: Identity Protection and Ethical Behavior

Learning Goals

* List precautions for protecting your identity on the Internet.
* Explain ways to protect your identity in e-mail communication.
* Describe ethical behavior in cyberspace.

Terms

* e-mail filters
* ethics
* identity theft
* online piracy
* pharming

Materials

* *Principles of Information Technology* textbook
* G-W Learning companion website for *Principles of Information Technology*
* *Principles of Information Technology* Instructor’s Resources
* *Principles of Information Technology* Instructor’s Presentations for PowerPoint® (optional)

Engage

* Have the students read the Section 16.2 introduction.
* Ask students the Essential Question at the beginning of the section, “How does your ethical behavior online affect others in society?” Engage students in a class discussion centered around their answers to the question.

Explore

* Review the vocabulary terms at the beginning of the section. Where have students encountered these terms before? Help students make educated guesses about the meanings of the terms with which they are least familiar.

Explain

* Use the Instructor’s Presentations for PowerPoint® for Chapter 16 as an outline for presenting the section.
* Explain identity protection on the Internet, identity protection in e-mail, and ethical behavior in cyberspace.

Elaborate/Extend

* Ask students to study the key terms using the Vocabulary activities available on the G-W Learning companion website.
* Assign the Communication Skills activities found at the end of the chapter. Opportunities for applying writing, listening, and speaking skills help develop the communication skills that are needed for college and career readiness.

Evaluate

* Assign Hands-On Examples 16.2.1–16.2.2.
* Conduct a formative assessment of student comprehension using the 16.2 Section Review. Assign Check Your Understanding questions at the end of the section.
* Have students complete the IC3 Certification Practice question found in the 16.2 Section Review. Engage the students in a conversation to ensure understanding of the topic and correct answer.
* Direct students to add their definitions of the terms in the Build Your Vocabulary exercise to their personal glossary.

Section 16.3: Restricting Access to Personal Information

Learning Goals

* Describe how firewalls and gateways protect data.
* Identify ways to provide password protection.
* List safe hardware and software practices.
* Discuss how to combat viruses and other malware.
* Explain how to determine if websites are reliable.
* Prevent computer threats from public intrusion.

Terms

* gateway
* passphrase
* personal firewall
* strong password
* uninterruptable power supply (UPS)

Materials

* *Principles of Information Technology* textbook
* G-W Learning companion website for *Principles of Information Technology*
* *Principles of Information Technology* Instructor’s Resources
* *Principles of Information Technology* Instructor’s Presentations for PowerPoint® (optional)
* ExamView® Assessment Suitefor *Principles of Information Technology* (optional)

Engage

* Have the students read the Section 16.3 introduction.
* Ask students the Essential Question at the beginning of the section, “What is the importance of restricting access to your personal information to your financial success?” Engage students in a class discussion centered around their answers to the question.

Explore

* Review the vocabulary terms at the beginning of the section. Where have students encountered these terms before? Help students make educated guesses about the meanings of the terms with which they are least familiar.

Explain

* Use the Instructor’s Presentations for PowerPoint® for Chapter 16 as an outline for presenting the section.
* Explain firewalls and gateways, password protection, safe hardware and software practices, combating viruses and other malware, determining reliable websites, and preventing threats from public intrusion.

Elaborate/Extend

* As time permits, have students read and discuss the chapter’s special features: FYIs, Ethics, STEM, Green Tech, and Career Skills. Each feature focuses on real-world information to which students can relate and apply to their personal lives.
* Have students complete the Portfolio Development activity. Discuss portfolio projects with students.

Evaluate

* Assign Hands-On Examples 16.3.1–16.3.2.
* Evaluate the students’ understanding by having them take the Chapter 16 posttest. The test may be accessed by going to the G-W Learning companion website.
* Conduct a formative assessment of student comprehension using the 16.3 Section Review. Assign Check Your Understanding questions at the end of the section.
* Have students complete the IC3 Certification Practice question found in the 16.3 Section Review. Engage the students in a conversation to ensure understanding of the topic and correct answer.
* Direct students to add their definitions of the terms in the Build Your Vocabulary exercise to their personal glossary.
* Assign the Chapter 16 Test found at the end of the chapter.
* Assign the Application and Extension of Knowledge questions.
* Assign the Certification Practice Exam for Chapter 16 located on the G-W Learning companion website.
* Conduct a summative assessment. Create a Chapter 16 exam using the ExamView® Assessment Suite for *Principles of Information Technology.*