

Teacher Summary: Security Awareness Campaign

This document provides instructor guidelines for one of the ten integrated curriculum projects developed for the NSF-funded Necessary Skills Now (NSN) project (award #1501990). The NSN project partners consist of CORD and three national centers supported through the NSF's Advanced Technological Education (ATE) program: National Center for Systems Security and Information Assurance (CSSIA), Florida Advanced Technological Education Center (FLATE), and South Carolina Advanced Technological Education National Resource Center (SC ATE). The NSN project is designed to integrate employability skills into technical exercises, activities, and labs. The project partners created self-contained instructional modules vertically aligned to associate degree programs in **mechatronics/automation in manufacturing** and **cybersecurity in information technology**. (The activities described in this document support courses in cybersecurity.) Six categories of employability skills, repeatedly mentioned in workforce surveys and research reports, served as the focus of the integrated curriculum:

<i>skill category</i> 1 TEAMWORK	<i>skill category</i> 2 PROBLEM SOLVING	<i>skill category</i> 3 VERBAL COMMUNICATION
<i>skill category</i> 4 WRITTEN COMMUNICATION	<i>skill category</i> 5 DEPENDABILITY/WORK ETHIC	<i>skill category</i> 6 PLANNING AND ORGANIZING

This project addresses the skills highlighted above.

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Project Overview	<p>Purpose: To incorporate employability skills (verbal communication skills, planning and organizing and dependability/work ethic skills) into an exercise that focuses on creating a security awareness campaign for a mid-sized organization</p> <p>Courses for Implementation: Security Awareness, Cybersecurity Essentials, Security+</p> <p>Key Terms: Security Awareness</p>
Discussion	<p>A video sets the tone for this activity: Staff security awareness (11:26)</p> <p>The Problem: ACME Healthcare is a healthcare company that runs over 25 medical facilities including patient care, diagnostics, outpatient care, and emergency care. The organization has experienced several data breaches over the last five years, which have burdened the organization financially and damaged its reputation. The executive leadership team recently hired a new chief information security officer (CISO), who established a committee to organize a Security Awareness Campaign. The campaign will reach across all departments within ACME Healthcare and include the following initiatives:</p> <ol style="list-style-type: none"> 1. Kickoff event 2. Use of social media 3. Marketing campaign 4. Employee contests 5. Changes to human resource hiring, promotion, and separation practices 6. Training programs 7. Establishment of assessment program for key employees 8. Year-round calendar of events <p>Plans for security awareness serve a critical role in promoting secure communications and motivating employees to take ownership of information security. Security awareness campaigns help organizations focus attention on security and keep security in the forefront of an organization's culture. All employees play a role in information security, and cybersecurity professionals lead the information security effort. A good cybersecurity awareness plan includes an assessment of the current knowledge level of employees, and then incorporates initiatives that engage members of the organization. Security awareness impacts the organization's procedures, employee training, and employee evaluations.</p>
Objectives	<p>Student Learning Objectives (Career and Technical, employability, etc.)</p> <ol style="list-style-type: none"> a. Technical – Students will demonstrate a thorough understanding of basic information security procedures, as evidenced by their contributions to the creation of a security awareness survey instrument and a security awareness campaign. b. Teamwork – Students will demonstrate the ability to work constructively and respectfully in teams to contribute to the analysis of vulnerabilities and identify initiatives for the cybersecurity awareness campaign, while addressing conflicts that may arise. c. Verbal Communication – Each student will demonstrate effective verbal communication skills to present and refine his or her ideas to teammates and the

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	<p>resulting initiative choices to the planning committee, while correctly using terminology in a well-organized and delivered presentation that includes relevant supporting facts and details.</p> <p>d. Dependability and Work Ethics – Each participant will be required to demonstrate a high level of honesty and professionalism by his or her attire, demeanor, and attitude toward others, and a dependable, punctual work attitude that respects published policies and laws—both as a committee member reviewing other’s work and a developer of campaign initiatives. (Advise students that their performance, participation, and interactions with their fellow students will be evaluated based on these criteria.)</p> <p>e. Planning and Organizing – Each student will demonstrate the ability to communicate and collaborate with others to work with timelines and materials, manage tasks required of a project, organize and plan an initiative for a security awareness survey and campaign, and recognize/improve areas of weakness.</p>
Teaching Strategies	<p>Step 1 – Review the project and objectives with the class. Show the video Staff security awareness (11:26). Divide the class into teams of four to five students. Distribute all student handouts, research materials, and other resource materials to each team.</p> <p>Step 2 – Have student teams work to research security awareness programs at other organizations using a web browser. Have each team report back to the planning committee on their findings with a list of at least 10 security issues that they found typically addressed, and can serve as a top-ten list of suggestions to incorporate into the ACME plan. Watch for use of terms by students that they cannot readily define. Each team should deliver to you a one-page list of security issues. (20 Min.)</p> <p>Step 3 – Acknowledging that security awareness is apparently lacking at ACME, each team will create a short survey to determine the level of current employee knowledge of basic security awareness. The survey should include common issues they uncovered in their web research, including things such as password security, proper handling of sensitive information, data confidentiality, email security, social media security, secure communications, authentication, non-repudiation, and personal roles and responsibility in enforcing the organization's information security policies. The resulting survey should not take more than 10 minutes to complete and include no more than 25 questions. Each team should present its survey to the class in electronic form when completed. (30 minutes)</p> <p>Optional: You may choose to further extend the collaborative effort by having the class help you merge the surveys to form a “best survey” that chooses the best survey questions for the most selected topics and produce a whole-class version of survey. (20 minutes)</p> <p>Step 4 – The survey(s), if administered to the ACME employees, would indicate areas of weakness that need to be addressed by a security awareness campaign. Form one or more planning committees by combining two teams (i.e., 8–10 students). As if responding to survey results, each planning committee will develop a security awareness campaign based on five initiatives selected from the ACME list. Each committee will assign a pair of its students to select one of the five initiatives to develop in the next step. If your class has more than one committee, you can allow some duplicate choosing of initiatives. (10 minutes)</p>

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	<p>Step 5 – The student pairs will develop a campaign plan to address the assigned/chosen initiative. Possible ideas could include posters, flyers, mailouts, videos, presentations, or more active participation, such as games, group exercises, blogs, and contests. The plan for addressing each initiative must include the following elements describing the activity (60 minutes):</p> <ul style="list-style-type: none"> • Statement of goals and objectives • General description of each activity to be conducted • Steps, team member roles and responsibilities, and expected outcomes for each activity • Resources (materials and estimated costs) required for each activity • Marketing plan to promote the initiative’s activity or event <p>Step 6 – Each pair of students will prepare and give a 5–7 minute presentation that outlines their plan for addressing their chosen initiative for the security awareness campaign. The presentation must include visual aids using tools like PowerPoint, PowToon, Apple Keynote, or Prezi. (90–120 minutes for whole class)</p>
Student/Group Activity Steps	<p>Students work in teams to familiarize themselves with the security awareness programs of other institutions, then create and share with the class a short survey that could be used to determine a current employee’s knowledge of basic security awareness.</p> <ol style="list-style-type: none"> 1. Review the project objectives and scenario. Watch the Staff Security Awareness video (11:26). Students will be grouped into teams of 4–5 students. 2. Work with your team to conduct online research of security awareness programs at other organizations. Prepare and deliver a report to your instructor of the findings, with suggestions for a plan to address the weaknesses observed at ACME. 3. Work with your team to create a 10-minute survey (25 questions or less) to assess the current ACME employee basic awareness of topics such as password security, handling of sensitive information, data confidentiality, email security, social media security, secure communications, authentication, non-repudiation, and personal responsibility to ACME information security policies. Each team will present its survey electronically to the class. 4. Pairs of teams will be combined to form “planning committees.” As if responding to real survey results, each committee will select five initiatives (from the list in the scenario). Pairs of students on each committee will each be assigned one of the five initiatives to develop for a security awareness campaign. 5. Each student pair will develop a plan for addressing the selected initiative as part of the company-wide security awareness campaign. Each initiative’s plan must include: <ul style="list-style-type: none"> • Statement of goals and objectives • General description of each activity to be conducted • Steps, team member roles and responsibilities to prepare for each activity • Resources (materials and estimated costs) required for each activity • Marketing plan to promote the initiative's activity or event 6. Each pair will prepare and deliver a 5–7 minute presentation that outlines their plan for addressing their initiative in the security awareness campaign. The presentation must include visual aids.

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Expected/Result and Solutions	The class will develop an instrument to assess an ACME employee's basic knowledge of information security and multiple initiatives for a security awareness campaign. Students will then demonstrate their creativity and understanding of the various initiatives by drafting plans for a campaign to address deficiencies in each of the initiatives. In the process, students will demonstrate not only their understanding of the security issues, but also demonstrate their abilities to work in teams, orally communicate their survey and security campaign ideas, draft and execute a plan to complete an assignment, and exhibit dependable and ethical workplace behavior.
Extension Options	Require completion of selected planning documents found after downloading the Security Awareness Planning Kit (zip) from SANS.
Equipment/Materials	Computer system with Internet access Presentation software (e.g., MS PowerPoint, Apple Keynote, Prezi, Google Slides)
Background Materials	<ol style="list-style-type: none"> Handouts and supplemental materials: <ol style="list-style-type: none"> Student procedure for this activity (see 3_Student... below) Website resources <ol style="list-style-type: none"> Staff security awareness video (11:26) How to Build a Successful IT Security Awareness Program The 7 elements of a successful security awareness program Security Awareness Program Planning Security Awareness - Implementing an Effective Strategy
Student Handouts	3_Student_SecurityAwarenessCampaign
Assessment	4_Rubric_SecurityAwarenessCampaign for <ul style="list-style-type: none"> Teamwork Rubric Planning and Organizing Rubric Verbal Communication Rubric Dependability and Work Ethics Rubric Technical Rubric