ISSC479

Course Summary

Course : ISSC479 **Title :** SCADA Security Standards
Length of Course : 8
Prerequisites : ISSC478 **Credit Hours :** 3

Description

Course Description:

This course provides an overview into the security standards and policies involved in Industrial Control Systems (ICS) and Supervisory Control and Data Acquisition (SCADA) systems. Students will explore the standards laid out in federal, state, and local laws, as well as those developed by the Federal Government via the National Institute of Standards and Technology (NIST) and the Department of Homeland Security (DHS). Students will also explore other potential external authorities that may play a role in certain critical infrastructure sectors as well as various industry groups focusing on information sharing. (Prerequisite: ISSC478)

Course Scope:

This course provides an overview into the security standards and policies involved in Industrial Control Systems (ICS) and Supervisory Control and Data Acquisition (SCADA) systems. Students will explore the standards laid out in federal, state, and local laws, as well as those developed by the Federal Government via the National Institute of Standards and Technology (NIST) and the Department of Homeland Security (DHS). Students will also explore other potential external authorities that may play a role in certain critical infrastructure sectors as well as various industry groups focusing on information sharing. (Prerequisite:
ISSC478)

Objectives

O-1: Examine the risk models and methodologies for ICS and SCADA systems
O-2: Develop a risk assessment for an ICS/SCADA system and apply various risk management tools to identify and quantify identified risks
O-3: Understand how to read results from a risk assessment and how to then apply mitigation techniques to these identified risks
O-4: Integrate the critical policies of information security, confidentiality, integrity, and availability, into ICS and SCADA systems

Outline

Week 1: SCADA Systems Introduction

Learning Objectives:

O-1: Examine the risk models and methodologies for ICS and SCADA systems
O-4: Integrate the critical policies of information security, confidentiality, integrity, and availability, into ICS and SCADA systems

Reading(s)

Please refer to the course e-reserve for weekly assigned readings.

Assignment(s)

Welcome Discussion

Week 1 Assignment

Week 2: Policy and Governance

Learning Objectives:

O-1: Examine the risk models and methodologies for ICS and SCADA systems

Reading(s)

Please refer to the course e-reserve for weekly assigned readings.

Assignment(s)

Week 2 Discussion

Week 3: Security Policy

Learning Objectives:

O-1: Examine the risk models and methodologies for ICS and SCADA systems

O-4: Integrate the critical policies of information security, confidentiality, integrity, and availability, into ICS and SCADA systems

Reading(s)

Please refer to the course e-reserve for weekly assigned readings.

Assignment(s)

Week 3 Assignment

Week 4: International SCADA Systems

Learning Objectives:

O-1: Examine the risk models and methodologies for ICS and SCADA systems

O-4: Integrate the critical policies of information security, confidentiality, integrity, and availability, into ICS and SCADA systems

Reading(s)

Please refer to the course e-reserve for weekly assigned readings.

Assignment(s)

Week 4 Assignment

Week 5: Information Sharing

Learning Objectives:

O-1: Examine the risk models and methodologies for ICS and SCADA systems

O-4: Integrate the critical policies of information security, confidentiality, integrity, and availability, into ICS and SCADA systems

Reading(s)

Please refer to the course e-reserve for weekly assigned readings.

Assignment(s)

Week 5 Assignment

Week 6: Risk Assessment

Learning Objectives:

O-1: Examine the risk models and methodologies for ICS and SCADA systems

O-4: Integrate the critical policies of information security, confidentiality, integrity, and availability, into ICS and SCADA systems

Reading(s)

Please refer to the course e-reserve for weekly assigned readings.

Assignment(s)

Week 6 Discussion

Week 7: Evaluation Tool

Learning Objectives:

O-1: Examine the risk models and methodologies for ICS and SCADA systems
O-2: Develop a risk assessment for an ICS/SCADA system and apply various risk management tools to identify and quantify identified risks
O-3: Understand how to read results from a risk assessment and how to then apply mitigation techniques to these identified risks
O-4: Integrate the critical policies of information security, confidentiality, integrity, and availability, into ICS and SCADA systems

Reading(s)

Please refer to the course e-reserve for weekly assigned readings.

Assignment(s)

Week 7 Assignment

Week 8: Remediation

Learning Objectives:

O-1: Examine the risk models and methodologies for ICS and SCADA systems

O-3: Understand how to read results from a risk assessment and how to then apply mitigation techniques to these identified risks

O-4: Integrate the critical policies of information security, confidentiality, integrity, and availability, into ICS and SCADA systems

Reading(s)

Please refer to the course e-reserve for weekly assigned readings.

Assignment(s)

Week 8 Discussion

Week 8 Assignment

Evaluation

Assessment Components

Discussions	20%
Assignments	60%
Risk Assessment	20%

Materials

Materials are provided inside the classroom through the course e-reserve.

Course Guidelines

Communications

Student Communication

To reach the instructor, please communicate through the MyClassroom email function accessible from the Classlist of the Course Tools menu, where the instructor and students email addresses are listed, or via the Office 365 tool on the Course homepage.

- In emails to instructors, it's important to note the specific course in which you are enrolled. The name of the course is at the top center of all pages.
- Students and instructors communicate in Discussion posts and other learning activities.
- All interactions should follow APUS guidelines, as noted in the Student Handbook, and maintain a professional, courteous tone.
- Students should review writing for spelling and grammar.
- Tips on Using the Office 365 Email Tool

Instructor Communication

The instructor will post announcements on communications preferences involving email and Instant Messaging and any changes in the class schedule or activities.

- Instructors will periodically post information on the expectations of students and will provide feedback on assignments, Discussion posts, quizzes, and exams.
- Instructors will generally acknowledge student communications within 24 hours and respond within 48 hours, except in unusual circumstances (e.g., illness).
- The APUS standard for grading of all assessments (assignments, Discussions, quizzes, exams) is seven days or fewer from the due date.
- Final course grades are submitted by faculty no later than seven days after the end date of the course or the end of the extension period.

University Policies

Consult the Student Handbook for processes and policies at APUS. Notable policies:

- Drop/Withdrawal Policy
- Extension Requests
- Academic Probation
- Appeals
- Academic Dishonesty / Plagiarism
- Disability Accommodations
- Student Deadlines
- Video Conference Policy

Mission

The mission of American Public University System is to provide high quality higher education with emphasis on educating the nation's military and public service communities by offering respected, relevant, accessible, affordable, and student-focused online programs that prepare students for service and leadership in a diverse, global society

Minimum Technology Requirements

- Please consult the catalog for the minimum hardware and software required for undergraduate and graduate courses.
- Although students are encouraged to use the Pulse mobile app with any course, please note that not all course work can be completed via a mobile device.

Disclaimers

- Please note that course content – and, thus, the syllabus – may change between when a student registers for a course and when the course starts.
- Course content may vary from the syllabus' schedule to meet the needs of a particular group.