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## American Public University System

American Military University | American Public University

# ISSC698

## **Course Summary**

Course : ISSC698 Title : Cybersecurity Studies: Capstone Practical Length of Course : 16 Faculty : Prerequisites : ISSSC621, ISSC630, ISS641, ITCC500 Credit Hours : 3

# Description

## **Course Description:**

Hello!

Cybersecurity Studies: this practical capstone course integrates the knowledge, skills, and posture acquired throughout the Cybersecurity Studies graduate program. This course is only offered in 16-week sessions. Students will complete an applied project design that demonstrates mastery and application of advanced research and analytic skills related to the learning outcomes of this degree program.

## Course Scope:

This project-based course utilizes the technical knowledge and skillsets acquired throughout the Cybersecurity Studies program. In addition, the project involves a project management approach where students work in teams via real-world collaborative environment. Furthermore, current research is conducted, data and information analyzed, risks are assessed, and solutions are evaluated using existing cybersecurity frameworks. Moreover, a managerial perspective is emphasized by applying high-level security concepts which concern operational as well as the strategic goals of a company or governmental entity. This holistic approach culminates in a practical report and a unique learning tutorial directed to senior management; thus, candidates are made to think like managers.

# Objectives

After successfully completing this course, you will be able to

- 1. Apply a project management approach to accomplish a comprehensive, realworld cybersecurity project.
- Evaluate and apply a cybersecurity framework (e.g., NIST, CIS, ISO/IEC 27001&2, IASEME, SOC<sub>2</sub>, CIS v7, CIS RAM, COBIT, COSO, HITRUST, etc.) to a particular industry.
- 3. From a managerial perspective, assess and evaluate high-lever security concepts within a particular industry.
- 4. Construct a concise, informative, and practical report to apprise senior management or high-level business executives about critical cybersecurity information and a ranking of recommendations based on risk assessments, cost/benefit analyses and other important stakeholder concerns.
- 5. Creating a practical, web-based, instructional tutorial aimed at apprising management senior management or high-level business executives about critical cybersecurity information and a ranking of recommendations based on risk assessments, cost/benefit analyses and other important stakeholder concerns.

## **Program Outcomes**

- Analyze the national cyber threat landscape and cybersecurity challenges from both external entities and domestic sources.
- Examine the legal, social, regulatory, ethical, and technical issues related to securing information systems and national critical infrastructures.
- Compare and contrast the interdisciplinary policies, practices, perspectives and products required to address the cyber threats to our information systems and critical infrastructures.
- Appraise the methodologies for performing vulnerability assessment, risk mitigation, auditing, and certification of information systems and critical infrastructures.
- Categorize the cybersecurity related roles, responsibilities, and policies for managers of critical infrastructures, national security, corporate security, criminal justice, and intelligence/counterintelligence.

# Outline

Week 1:

## Topics

Overview and structure of course. Review Deliverables. Consider project topics.

## Learning Objectives

CO1: Apply a project management approach to accomplish a comprehensive, real-world cybersecurity project.

LO1.1 Outline a comprehensive, real-world cybersecurity project

## Reading

Week 1 Orientation:

- 1. Review Team Deliverables (in Week 1 Lesson)
- 2. Course Overview (in Content)
- 3. Getting Started (in Content)

## Assignments

Welcome Discussion

Week 1 Discussion: Deliverables Q&A Discussion

## Week 2:

## Topics

Research and differentiate various cybersecurity frameworks for cybersecurity (e.g., NIST, CIS, ISO/IEC 27001&2, IASEME, SOC<sub>2</sub>, CIS v7, CIS RAM, COBIT, COSO, HITRUST).

Learning Objectives

CO2: Evaluate and apply a cybersecurity framework (e.g., NIST, CIS, ISO/IEC 27001&2, IASEME, SOC<sub>2</sub>, CIS v7, CIS RAM, COBIT, COSO, HITRUST) to a particular industry.

## Reading

## Weekly reading is available in the course e-reserve

Week 2 Research:

- 1. Cybersecurity Frameworks
- 2. Applicability of Standard Industry Codes (SIC) to Specific Framework(s)

## Assignments

Week 2 Discussion

## Week 3:

#### Topics

Research problem question and designing hypotheses.

Individual or Group Endeavor Selection

#### Learning Objectives

CO1: Apply a project management approach to accomplish a comprehensive, real-world cybersecurity project.

LO1.2 Analyze selected research methods and tools

CO3: From a managerial perspective, assess and evaluate high-lever security concepts within a particular industry

CO4: Construct a concise, informative, and practical report to apprise senior management or high-level business executives about critical cybersecurity information and a ranking of recommendations based on risk assessments, cost/benefit analyses and other important stakeholder concerns.

LO 4.1Develop a coherent plan for IT research that includes: problem analysis, purpose, valid research questions, hypothesis construction, literature review, data collection, critical analysis, and research design methodology

#### Reading

Week 3 Reading Assignment: see e-reserve

#### Assignments

Week 3 Discussion

Note: This week you will choose Group or individual Endeavors. Deliverables for each path differ depending on which you select, all will be outlined below.

Group Endeavor Assignments	Individual Endeavor Assignments
W3 Group Project Proposal	W3 Individual Project Proposal
W3 Group Project Responsibility Matrix	
W3 Group Use of Collaborative Tools and Participation	

#### Week 4:

## Topics

Cybersecurity Domains: Information Security

#### **Learning Objectives**

CO1: Apply a project management approach to accomplish a comprehensive, real-world cybersecurity project.

LO1.2 Analyze selected research methods and tools

CO3: From a managerial perspective, assess and evaluate high-lever security concepts within a particular industry

CO4: Construct a concise, informative, and practical report to apprise senior management or high-level business executives about critical cybersecurity information and a ranking of recommendations based on risk assessments, cost/benefit analyses and other important stakeholder concerns.

LO 4.1:Develop a coherent plan for IT research that includes: problem analysis, purpose, valid research questions, hypothesis construction, literature review, data collection, critical analysis, and research design methodology

LO4.2: Identify primary and secondary sources to critically assess sources to recognize scholarly and academic material

## Reading

Week 4 Reading Assignment: see e-reserve

#### Assignments

Week 4 Discussion

Week 5:

#### Topics

Progress Check

Learning Objectives

CO1: Apply a project management approach to accomplish a comprehensive, real-world cybersecurity project.

LO1.2 Analyze selected research methods and tools

CO4: Construct a concise, informative, and practical report to apprise senior management or high-level business executives about critical cybersecurity information and a ranking of recommendations based on risk assessments, cost/benefit analyses and other important stakeholder concerns.

LO 4.1: Develop a coherent plan for IT research that includes: problem analysis, purpose, valid research questions, hypothesis construction, literature review, data collection, critical analysis, and research design methodology

LO4.2: Identify primary and secondary sources to critically assess sources to recognize scholarly and academic material

LO4.3: Apply accurate language mechanics and APA style guidelines to develop research reports and other academic papers

LO4.4: Utilize graduate level critical thinking, reasoning, and writing to defend the logic and the conclusions in scholarly research

## Reading

Week 5 Reading Assignment: available in e-reserve

## Assignments

No assignments due this week. Review your project proposal and associated timelines.

## Week 6

#### **Topics**

Cybersecurity Domains: Asset Security, Policies and Procedures

## Learning Objectives

CO1: Apply a project management approach to accomplish a comprehensive, real-world cybersecurity project.

LO1.2 Analyze selected research methods and tools

CO3: From a managerial perspective, assess and evaluate high-lever security concepts within a particular industry

CO4: Construct a concise, informative, and practical report to apprise senior management or high-level business executives about critical cybersecurity information and a ranking of recommendations based on risk assessments, cost/benefit analyses and other important stakeholder concerns.

LO 4.1: Develop a coherent plan for IT research that includes: problem analysis, purpose, valid research questions, hypothesis construction, literature review, data collection, critical analysis, and research design methodology

LO4.3: Apply accurate language mechanics and APA style guidelines to develop research reports and other academic papers

LO4.4: Utilize graduate level critical thinking, reasoning, and writing to defend the logic and the conclusions in scholarly research

## Reading

Week 6 Reading Assignment: Available in e-reserve

## Assignments

Week 6 Discussion

#### Week 7:

#### Topics

**Progress Check** 

## **Learning Objectives**

CO4: Construct a concise, informative, and practical report to apprise senior management or high-level business executives about critical cybersecurity information and a ranking of recommendations based on risk assessments, cost/benefit analyses and other important stakeholder concerns.

LO4.4: Utilize graduate level critical thinking, reasoning, and writing to defend the logic and the conclusions in scholarly research

## Reading

#### Assignments

No assignments due this week. Review your project proposal and associated timelines.

## Week 8:

#### Topics

Cybersecurity Domains: Communication and Networking Security

#### Learning Objectives

CO3: From a managerial perspective, assess and evaluate high-lever security concepts within a particular industry

CO4: Construct a concise, informative, and practical report to apprise senior management or high-level business executives about critical cybersecurity information and a ranking of recommendations based on risk assessments, cost/benefit analyses and other important stakeholder concerns.

LO4.3: Apply accurate language mechanics and APA style guidelines to develop research reports and other academic papers

LO4.4: Utilize graduate level critical thinking, reasoning, and writing to defend the logic and the conclusions in scholarly research

## Reading

Week 8 Reading Assignment:

#### Assignments

Week 8 Discussion

#### Week 9:

#### Topics

Progress Check

## **Learning Objectives**

TBD based on student/group selected topic(s)

## Reading

## Weekly reading is available in the course e-reserve

#### Assignments

No assignments due this week. Review your project proposal and associated timelines.

#### Week 10:

#### Topics

Cybersecurity Domains: Security Operations, Assessment and Testing

#### Learning Objectives

CO3: From a managerial perspective, assess and evaluate high-lever security concepts within a particular industry

#### Reading

#### Weekly reading is available in the course e-reserve

#### Assignments

Week 10 Discussion.

#### Week 11:

#### Topics

Progress Check

#### **Learning Objectives**

TBD based on student/group selected topic(s)

#### Reading

Weekly reading is available in the course e-reserve

#### Assignments

No assignments due this week. Review your project proposal and associated timelines.

## Week 12:

#### Topics

Cybersecurity Domains: Security Engineering and Responding to Incidents

## **Learning Objectives**

TBD based on student/group selected topic(s)

## Reading

#### Weekly reading is available in the course e-reserve

#### Assignments

Week 12 Discussion

#### Week 13:

#### **Topics**

**Progress Check** 

#### Learning Objectives

TBD based on student/group selected topic(s)

#### Reading

## Weekly reading is available in the course e-reserve

## Assignments

No assignments due this week. Review your project proposal, associated timelines and Deliverables.

## Week 14:

## Topics

**Progress Check** 

## **Learning Objectives**

TBD based on student/group selected topic(s)

## Reading

## Weekly reading is available in the course e-reserve

#### Assignments

No assignments due this week. Review your project proposal, associated timelines and Deliverables.

#### Week 15:

## Topics

Progress Check and Beta Testing

#### **Learning Objectives**

TBD based on student/group selected topic(s)

## Reading

#### Weekly reading is available in the course e-reserve

## Assignments

No assignments due this week. Review your project proposal, associated timelines and Deliverables. Conduct Beta Testing of Website.

## Week 16:

#### Topics

Final project Submissions

## Learning Objectives

TBD based on student/group selected topic(s)

## Reading

#### Weekly reading is available in the course e-reserve

#### Assignments

Group Endeavor Assignments	Individual Endeavor Assignments
W16 Group Executive Summary	W3 Individual Executive Summary
W16 Group Website Tutorial	W3 Individual Website Tutorial
W16 Group Team Evaluation	

## **Evaluation**

This course has a strong writing component. The goal is to organize, synthesize, and demonstrate your comprehension of core concepts investigated during this course by applying a combination of the terms, concepts, and details you have learned in a systematic way. As important as "the details" that you analyze and arrange in your writing, however, are the conclusions you draw from those details, and your predictions, responses to, and ultimate interpretation of those details.

Students are expected to maintain routine contact with the instructor throughout the course. While the number of contacts may vary according to the specific course and individual student need, the University requires periodic weekly contacts during the semester. Contact will consist of professor notes, discussion interaction, and email feedback. The method of discussion will be on-line related to issues concerning discussion assignments, quizzes, assignments, the midterm project and final project.

## TEXTBOOK READINGS

Review the assigned textbook and support materials for this course!

#### Weekly reading is available in the course e-reserve

## ASSIGNMENTS

The projects for this course are located throughout each Lesson. The projects that are required for grading with this course are created from scratch.

#### DISCUSSION

The Discussion assignments for this course are designed to promote interactivity among students and enhance the online learning process. The Discussion provides maximum flexibility because you do not have to be online at the same time as another person and you can read what other students have written.

*Discussion Timing*: For the discussion, you must post your work by midnight on Thursday, continue to follow your classmates' posts for the remainder of the week, and post the follow-up peer responses prior to midnight on Sunday, *except for week one*. Your follow-up posts can add additional insight to a classmate's opinions or can challenge their opinions. Use examples from the readings, or from your own research, to support your access, as appropriate. Be sure to read the follow-up posts to your own posts and reply to any questions or requests for clarification. You are encouraged to conduct research and use other sources to support your answers.

*Required Participation*: Please be advised that there will be point deductions if you do not comply with these requirements of the assignment. Each one of you will have a different and unique experience that we can all learn from. Your participation in the Discussions unleashes the power of synergy in our classroom. To facilitate this interaction, please be prompt when posting your discussion work for each week; this provides time for the others to actively engage in the dialogue. For practical reasons, when you respond to other learners' posts, please start your response by referencing their name. I will read and grade your participation by reading the discussion. There is no need to also post your discussion work in the assignments area of the classroom. Refer to the discussion and the syllabus for more details on grading.

## Grading:

Group Endeavor		
Assignments	Weight	
Project Proposal	15%	
Use of Collaborative Tools	7%	
Responsibility Matrix	7%	
Executive Summary	30%	
Website Tutorial	20%	
Self-Evaluation	5%	
Discussion Forum 1	2%	
Discussion Forum 2	2%	
Discussion Forum 3	2%	
Discussion Forum 4	2%	
Discussion Forum 5	2%	
Discussion Forum 6	2%	
Discussion Forum 7	2%	
Discussion Forum 8	2%	

Individual Endeavor		
Assignments		Weight
Project Proposal		20%
Executive Summary		39%
Website Tutorial		25%
Discussion Forum 1		2%
Discussion Forum 2		2%
Discussion Forum 3		2%
Discussion Forum 4		2%
Discussion Forum 5		2%
Discussion Forum 6		2%
Discussion Forum 7		2%
Discussion Forum 8		2%
	Total	100%

## **Materials**

Weekly reading is available in the course e-reserve

## **Course Guidelines**

## **Citation and Reference Style**

• Attention Please: Students will follow the APA Format as the sole citation and reference style used in written work submitted as part of coursework to the University. Assignments completed in a narrative essay or composition format must follow the citation style cited in the APA Format.

## Tutoring

• Tutor.com offers online homework help and learning resources by connecting students to certified tutors for one-on-one help. AMU and APU students are eligible for 10 free hours\* of tutoring provided by APUS. Tutors are available 24/7 unless otherwise noted. Tutor.com also has a SkillCenter Resource Library offering educational resources, worksheets, videos, websites and career help. Accessing these resources does not count against tutoring hours and is also available 24/7. Please visit the APUS Library and search for 'Tutor' to create an account.

## Late Assignments

- Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. The due date for each assignment is listed under each Assignment.
- Generally speaking, late work may result in a deduction up to 15% of the grade for each day late, not to exceed 5 days.
- As a working adult I know your time is limited and often out of your control. Faculty may be more flexible if they know ahead of time of any potential late assignments.

## Turn It In

Faculty may require assignments be submitted to Turnitin.com. Turnitin.com will analyze a
paper and report instances of potential plagiarism for the student to edit before submitting
it for a grade. In some cases professors may require students to use Turnitin.com. This is
automatically processed through the Assignments area of the course.

## **Academic Dishonesty**

 Academic Dishonesty incorporates more than plagiarism, which is using the work of others without citation. Academic dishonesty includes any use of content purchased or retrieved from web services such as CourseHero.com. Additionally, allowing your work to be placed on such web services is academic dishonesty, as it is enabling the dishonesty of others. The copy and pasting of content from any web page, without citation as a direct quote, is academic dishonesty. When in doubt, do not copy/paste, and always cite.

## Submission Guidelines

• Some assignments may have very specific requirements for formatting (such as font, margins, etc) and submission file type (such as .docx, .pdf, etc) See the assignment instructions for details. In general, standard file types such as those associated with Microsoft Office are preferred, unless otherwise specified.

## **Disclaimer Statement**

• Course content may vary from the outline to meet the needs of this particular group.

## Communicating on the Discussion

- Discussions are the heart of the interaction in this course. The more engaged and lively the exchanges, the more interesting and fun the course will be. Only substantive comments will receive credit. Although there is a final posting time after which the instructor will grade comments, it is not sufficient to wait until the last day to contribute your comments/questions on the discussion. The purpose of the discussions is to actively participate in an on-going discussion about the assigned content.
- "Substantive" means comments that contribute something new and hopefully important to the discussion. Thus a message that simply says "I agree" is not substantive. A substantive comment contributes a new idea or perspective, a good follow-up question to a point made, offers a response to a question, provides an example or illustration of a key point, points out an inconsistency in an argument, etc.
- As a class, if we run into conflicting view points, we must respect each individual's own opinion. Hateful and hurtful comments towards other individuals, students, groups, peoples, and/or societies will not be tolerated.

## Identity Verification & Live Proctoring

- Faculty may require students to provide proof of identity when submitting assignments or completing assessments in this course. Verification may be in the form of a photograph and/or video of the student's face together with a valid photo ID, depending on the assignment format.
- Faculty may require live proctoring when completing assessments in this course. Proctoring may include identity verification and continuous monitoring of the student by webcam and microphone during testing.

# **University Policies**

Student Handbook

- Drop/Withdrawal policy
- Extension Requests
- <u>Academic Probation</u>
- Appeals
- Disability Accommodations

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.