Syllabus for CYB-4950—Cybersecurity Capstone

COURSE DESCRIPTION

Cybersecurity Capstone is a project-driven study with an emphasis on integration and application of cybersecurity knowledge and skills gained throughout the program. The aim is to examine the architecture of a complex system, identify significant vulnerabilities and threats, and apply appropriate security technologies and methods to ensure the overall security of the system. Advanced cybersecurity principles and best practices are applied to develop a comprehensive cyberdefense program for an enterprise against cyber threats.

COURSE TOPICS

- Regulatory concerns
- Risk management
- Vulnerability management
- Access control
- Physical security
- Disaster recovery
- Personnel security
- Auditing
- Communication and media protections
- Configuration management
- Patch management
- Incident response
- Security awareness
- Security plan contents and requirements
- Security plan implementation
    - Corporate buy-in (management and personnel)
    - Corporate culture and resistance to change

COURSE OBJECTIVES

After completing this course, you should be able to:

CO 1   Analyze the requirements of a comprehensive security plan for an organization.

CO 2 Apply cybersecurity principles and methods to defend an information system against cyber threats.

CO 3 Integrate best practices and technologies to develop a security plan for a specific organization.

CO 4 Design and customize a comprehensive security plan by integrating network defense tools and measures.

CO 5 Examine legal, ethical, and compliance aspects of cybersecurity.

CO 6 Evaluate the components of an organization's computing environment.

CO 7 Implement a security plan for an organization.

COURSE MATERIALS

There is no textbook required for this course. The course materials may be free, open source, or available from other providers. You can access free or open-source materials by clicking the links in the module details documents.

COURSE STRUCTURE

Cybersecurity Capstone is a three-credit, online course consisting of **six** modules. Modules include an overview, topics, learning objectives, study materials, and activities. Module titles are listed below.

- **Module 1: The System Environment**
  Course objectives covered in this module: CO 1, CO 2, CO 3, CO 5, CO 6

- **Module 2: Risk, Vulnerabilities, and Access**
  Course objectives covered in this module: CO 1, CO 2, CO 3, CO 4, CO 6

- **Module 3: Auditing, Media, and Communication Protections**
  Course objectives covered in this module: CO 1, CO 2, CO 3, CO 4, CO 6

- **Module 4: Configuration, Patch, and Software Security**
  Course objectives covered in this module: CO 1, CO 2, CO 3, CO 4, CO 6

- **Module 5: Incident Response, Disaster Recovery, and Awareness**
  Course objectives covered in this module: CO 1, CO 2, CO 3, CO 4, CO 6

- **Module 6: Creating a Security Program**
  Course objectives covered in this module: CO 1, CO 2, CO 3, CO 4, CO 6, CO 7

ASSESSMENT METHODS

For your formal work in the course, you are required to participate in online discussion forums and a video discussion forum, complete written assignments, and complete a two-part final project. See below for details.

Consult the Course Calendar for due dates.

Promoting Originality—One or more of your course activities may utilize a tool designed to promote original work and evaluate your submissions for plagiarism. More information about this tool is available in this document.

📧 *Discussion Forums*

In addition to an ungraded Introductions Forum, you are required to participate in **five** graded online class discussions.

Communication with your mentor and among fellow students is a critical component of online learning. Participation in online class discussions involves two distinct activities: an initial response to a discussion question and **at least** two subsequent comments on classmates' responses.

All of these responses must be substantial. Meaningful participation is relevant to the content, adds value, and advances the discussion. Comments such as "I agree" and "ditto" are not considered value-adding participation. Therefore, when you agree or disagree with a classmate or your mentor, state *and support* your position.

You will be evaluated on the quality and quantity of your participation, including your use of relevant course information to support your point of view, and your awareness of and responses to the postings of your classmates. You are required to use at least one APA-compliant reference and corresponding in-text citation(s) per each initial post to support the information you are presenting. Remember, these are discussions: responses and comments should be properly proofread and edited, mature, and respectful.

📧📄 *Video Discussion Forum*

You are required to participate in **one** video discussion forum. In the Video Discussion Forum, you will upload your *video* response to the discussion question. Then, you will view, listen, and reply via comments to **at least** two classmates' videos by the date indicated in the Course Calendar. Please reference Module 4 for full details and requirements.

📄 *Written Assignments*

You are required to complete **five** written assignments that will assist you as you prepare for the final project. The written assignments are on a variety of topics associated with the course modules. You are required to use APA-compliant references and corresponding in-text citations in these assignments. For specific details refer to the individual course modules. Consult the Course Calendar for due dates.

📄 *Final Project*

You are required to complete a two-part final project. First, you will develop a system security plan to demonstrate knowledge of the different factors and topics that need to be addressed in order to successfully establish and implement a comprehensive system security plan within an organization. Then, you will present your system security plan to a management "audience" using CaptureSpace.

Be sure to reference the **Final Project** area of the course website for full details and requirements. Consult the Course Calendar for due dates.

GRADING AND EVALUATION

Your grade in the course will be determined as follows:

- **Online discussions (5)**—20%
- **Video discussion (1)**—5%
- **Written assignments (5)**—30%
- **Final project (2 parts)**—45%
    - Part 1: System security plan (25%)
    - Part 2: Presentation (20%)

All activities will receive a numerical grade of 0–100. You will receive a score of 0 for any work not submitted. Your final grade in the course will be a letter grade. Letter grade equivalents for numerical grades are as follows:

A	= 93–100	C+	= 78–79
A–	= 90–92	C	= 73–77
B+	= 88–89	C–	= 70–72
B	= 83–87	D	= 60–69
B–	= 80–82	F	= Below 60

To receive credit for the course, you must earn a letter grade of C or better (for an area of study course) or D or better (for a course not in your area of study), based on the weighted average of all assigned course work (e.g., exams, assignments, discussion postings).

STRATEGIES FOR SUCCESS

First Steps to Success

To succeed in this course, take the following first steps:

- Read carefully the entire Syllabus, making sure that all aspects of the course are clear to you and that you have all the materials required for the course.

- Take time to read the entire Online Student Handbook. The Handbook answers many questions about how to proceed through the course and how to get the most from your educational experience at Thomas Edison State University.

- Familiarize yourself with the learning management systems environment—how to navigate it and what the various course areas contain. If you know what to expect as you navigate the course, you can better pace yourself and complete the work on time.

- If you are not familiar with web-based learning, be sure to review the processes for posting responses online and submitting assignments before class begins.

Study Tips

Consider the following study tips for success:

- To stay on track throughout the course, begin each week by consulting the Course Calendar. The Course Calendar provides an overview of the course and indicates due dates for submitting assignments, posting discussions, and submitting the final project.

- Check Announcements regularly for new course information.

Using AI Ethically: A Guide for TESU Students

TESU's [Academic Code of Conduct](#) permits student AI use in support of their writing and research process--not as a replacement for original writing. Document AI use with an acknowledgment statement at the end of each assignment, noting the tools and prompts used. Cite any AI-generated content on the References page. Please review [Using AI Ethically: A Guide for TESU Students](#) for more detailed information.

COMMITMENT TO DIVERSITY, EQUITY, AND INCLUSION

Thomas Edison State University recognizes, values, and relies upon the diversity of our community. We strive to provide equitable, inclusive learning experiences that embrace our students' backgrounds, identities, experiences, abilities, and expertise.

ACCESSIBILITY AND ACCOMMODATIONS

Thomas Edison State University adheres to the Americans with Disabilities Act (ADA, 1990; ADAAA, 2008) and Section 504 of the Rehabilitation Act of 1973. The Office of Student Accessibility Services (OSAS) oversees requests for academic accommodations related to disabilities; a student who is pregnant, postpartum, or a student parenting a newborn who is not the birth parent [as covered under NJSA18A]; and students requesting academic accommodation for a short-term/temporary illness and/or injury. Information can be found on the [Office of Student Accessibility Services](#) webpage and questions can be sent to ADA@tesu.edu.

ACADEMIC POLICIES

To ensure success in all your academic endeavors and coursework at Thomas Edison State University, familiarize yourself with all administrative and academic policies including those related to academic integrity, course late submissions, course extensions, and grading policies.

For more, see:

- [University-wide policies](#)
- [Undergraduate academic policies](#)
- [Undergraduate course policies](#)
- [Graduate academic policies](#)
- [Graduate course policies](#)
- [Nursing student policies](#)
- [Nursing graduate student policies](#)
- [International student policies](#)
- [Academic code of conduct](#)