TIM-8301, Principles of Cybersecurity

(3 credits)

## Course Description:

This course is an overview of security principles and practices to support executive security professionals to protect their information systems and computer networks from cyberattacks. In this course, you will study advanced and emerging topics in technology, its security features and control structures, security management and leadership, as well as techniques that are relevant to organizations that focus on technology and innovation.

## Number of Assignments: 8

## Course Learning Outcomes:

1. Evaluate issues in existing network infrastructure or computer network, as well as information security practices.
2. Develop a risk framework to manage technology, data, and innovation threats or vulnerabilities.
3. Synthesize the evolution of technology and cybersecurity through research and theory development.
4. Formulate relevant strategies and organizational policies for improving information security practices.

## Course Concepts:

1. Combining Cybersecurity and General Strategy of The Organization
2. Advanced Malware Attacks and Techniques
3. Psychological Perspectives of Cybersecurity
4. Cyber Espionage
5. Risk and Cybersecurity Frameworks
6. Risk Mitigation Strategies
7. Anticipate the Implications of New Technology (Including IoTa, Autonomous Transport, Machine Learning, Big Data, and Robotics)

## Primary Resources:

No Primary Resources.

## Course Outline

### Section 1: The Issues and Scope of Cybersecurity

#### Week 1: Topics and Scope of Cybersecurity

##### Week 1 Assignment: Evaluate Cybersecurity (10 points)

#### Week 2: People and Psychology

##### Week 2 Assignment: Assess and Improve the People Aspects of Cybersecurity (12 points)

#### Week 3: Cyber Espionage and Global Influences

##### Week 3 Assignment: Evaluate the Global Cybersecurity Position for a Significant Organization (12 points)

#### Week 4: Malware and Encryption

##### Week 4 Assignment: Analyze Malware and Encryption Options (11 points)

### Section 2: Risk, Mitigation, and Controls

#### Week 5: Risk Frameworks and Models

##### Week 5 Assignment: Appraise Risk Analysis, Frameworks, and Models (11 points)

#### Week 6: Risk Mitigation and Control

##### Week 6 Assignment: Produce a Risk Mitigation, Continuity, Control, and Disaster Plan (14 points)

### Section 3: Protecting an Organization

#### Week 7: Innovation, Change, and Evolving Risks

##### Week 7 Assignment: Prepare for Future Needs (10 points)

#### Week 8: Addressing an Organization’s Needs

##### Week 8 Assignment: Signature Assignment – Integrate a Strategic Cybersecurity Approach (20 points)