## **CYBR 310: Introduction to Cybersecurity (3 credits)**

This course provides an overview of the fundamental concepts and principles of cybersecurity. The course covers topics such as information security, network security, and cybersecurity policies and practices. The course is designed to provide students with an understanding of the importance of cybersecurity in modern society and the tools and techniques used to protect against cyber-attacks. *(Prerequisite: CMPE 215)*

**Course Learning Outcomes:**

By the end of the course, students will be able to:

A1. Demonstrate advanced knowledge of the concept, principles, and standards related to information security goals, mechanisms, and development.

A2. Apply security standards and controls using computerized tools to test system security and protect information and systems.

B1. Analyze the information security risks, vulnerabilities, threats, and possible attacks.

B2. Design effective security systems to control information security risks of information systems.

B3. Explain both orally and in written current issues of information security and research on new trends in the cybersecurity field.

C1. Operate in different cybersecurity contexts with accountability for ethical issues in information security.

**Course Learning Materials:**

* Robin Sharp: Introduction to Cybersecurity A Multidisciplinary Challenge, 2024, Springer
* Michael E. Whitman, Herbert J. Mattord : Principles of Information Security, 7th Edition 2022, cengage

**Course Content:**

1. Introduction to cybersecurity
2. Technique and Human Beings
3. Risk Management
4. Introduction to Cryptography
5. Communication Networks
6. Network Applications
7. Network Security
8. Security in Operating Systems
9. Software security
10. Incident Handling and System Availability
11. Law and Ethics