


# COMPUTER & INFO SECURITY (CYBR)

 - General Education Course

## **CYBR 210 Comp and Info Sec Principle** **3 Credit hours**

Introduction to the various technical and administrative aspects of Computer and Information Security. Understanding key issues associated with protecting information assets, determining the protection needed and response to security incidents.

**Pre-req:** CS 105 or CS 110 or CS 110H.

**Grade Mode:** Normal Grading Mode

## **CYBR 240 Information Security Policies** **3 Credit hours**

Introduction to information security policies, sociological and psychological issues in policy implementation in general. Discuss the lifecycle of policy creation, enactment in different domains of security and policy structure.

**Pre-req:** CS 105 with a minimum grade of D or CS 110 with a minimum grade of D or CS 110H with a minimum grade of D.

**Grade Mode:** Normal Grading Mode

## **CYBR 310 Introduction to Cryptography** **3 Credit hours**

This course covers the basic aspects of modern cryptography, including block ciphers, pseudorandom functions, symmetric encryption, Hash functions, message authentication, number theoretic primitives, public-key encryption, digital signatures and zero knowledge proofs.

**Pre-req:** CS 210 and (STA 225 or STA 345).

**Grade Mode:** Normal Grading Mode

## **CYBR 330 Cyber Security** **3 Credit hours**

Concepts and issues in physical and cyber security; technical vulnerabilities found in operating systems, database servers, Web servers, Internet, and local area networks; developing defensive and offensive security measures.

**Pre-req:** CS 320 with a minimum grade of D.

**Grade Mode:** Normal Grading Mode

## **CYBR 350 Cyber System Administration** **3 Credit hours**

Introduction of System Administration and related topics, including trouble-shooting system and network problems, hardware and software configuration and installation, basic scripting, and security aspects of Internet hosts.

**Pre-req:** CS 320 with a minimum grade of D.

**Grade Mode:** Normal Grading Mode

## **CYBR 360 Cyber Infrastructure Security** **3 Credit hours**

Comprehensive analysis on the utilization and augmentation of cyber security technologies to harden cyber infrastructure and its interconnected cyber-physical systems against various attacks.

**Pre-req:** CS 320 with a minimum grade of D.

**Grade Mode:** Normal Grading Mode

## **CYBR 400 Computer Security Design** **3 Credit hours**

Foundation technical and analytical skills to implement comprehensive computer security that encompass designing secure systems, information security, protecting information assets, managing computer security, risk mitigation strategies, and incident response.

**Pre-req:** CYBR 350.

**Grade Mode:** Normal Grading Mode

## **CYBR 435 Cyber Risk** **3 Credit hours**

Advanced course on the functions and purposes of the latest development in cyber security techniques and tools used to create, secure, protect and remediate cyber-infrastructures from various cyber threats.

**Pre-req:** CYBR 330 with a minimum grade of D or CS 330 with a minimum grade of D.

**Grade Mode:** Normal Grading Mode

## **CYBR 442 Cyber Operations** **3 Credit hours**

Study of various concepts and aspects in choosing, deploying, supporting, troubleshooting and securing various local and distributed components of a cyber operation with consideration of the human factor.

**Pre-req:** CYBR 350 and CYBR 360.

**Grade Mode:** Normal Grading Mode

## **CYBR 475 Internship** **3 Credit hours**

An in-depth and hands-on involvement in a real-world project under direct professional supervision. The project may be on-campus or off-campus.

**Grade Mode:** Normal Grading Mode

## **CYBR 480 Special Topics** **1-4 Credit hours**

Study of an advanced topic not normally covered in other courses.

**Grade Mode:** Normal Grading Mode

## **CYBR 481 Special Topics** **1-4 Credit hours**

Study of an advanced topic not normally covered in other courses.

**Grade Mode:** Normal Grading Mode

## **CYBR 482 Special Topics** **1-4 Credit hours**

Study of an advanced topic not normally covered in other courses.

**Grade Mode:** Normal Grading Mode

## **CYBR 483 Special Topics** **1-4 Credit hours**

Study of an advanced topic not normally covered in other courses.

**Grade Mode:** Normal Grading Mode

## **CYBR 484 Special Topics** **1-4 Credit hours**

Study of an advanced topic not normally covered in other courses.

**Grade Mode:** Normal Grading Mode

## **CYBR 485 Special Topics** **1-4 Credit hours**

Study of an advanced topic not normally covered in other courses.

**Grade Mode:** Normal Grading Mode

## **CYBR 486 Independent Study** **1-4 Credit hours**

Independent study for selected juniors and seniors under supervision of faculty; may be repeated only once.

**Grade Mode:** Normal Grading Mode

## **CYBR 487 Independent Study** **1-4 Credit hours**

Independent study for selected juniors and seniors under supervision of faculty; may be repeated only once.

**Grade Mode:** Normal Grading Mode

## **CYBR 488 Independent Study** **1-4 Credit hours**

Independent study for selected juniors and seniors under supervision of faculty; may be repeated only once.

**Grade Mode:** Normal Grading Mode

## **CYBR 489 Independent Study** **1-4 Credit hours**

Independent study for selected juniors and seniors under supervision of faculty; may be repeated only once.

**Grade Mode:** Normal Grading Mode

**CYBR 490** 🦋 **Senior Project**

**3 Credit hours**

Application of technical and professional skills in solving a real-world problem in a team environment. Discuss professional code of conduct, societal issues, and transition from student to industry professional.

**Pre-req:** CYBR 330.

**Attributes:** Capstone Course

**Grade Mode:** Normal Grading Mode