

## **CSCI 5301 – MODERN COMPUTER SECURITY AND CONTEMPORARY ISSUES IN COMPUTER SCIENCE**

**CREDIT HOURS:** 3

### **CATALOG DESCRIPTION:**

This course addresses concerns applicable to computer users. It covers the issues and practical aspects of modern computer security, with an overview of relevant laws and regulations (including HIPAA – the Health Insurance Portability and Accountability Act) concerning computer security. It also addresses relevant issues with large-scale computer usage, including big data, user interfacing, cloud computing, and ethical issues in computing.

### **PURPOSE OF COURSE:**

The purpose of this course is to acquaint students with practical aspects of computer applications and computer security, and to discuss contemporary issues involving computing that involve other disciplines. This course is designed for the non-computer science major that wishes to gain insight and keep current with security and legal issues involving practical uses of computing. The contemporary issue topics will include but not limited to security, legal aspects, ethics, big data, and data analytics. No programming is involved.

### **EDUCATIONAL OBJECTIVES**

Upon successful completion of the course, students should be able to:

1. Understand theoretical and practical aspects of computer security.
2. Understand practical aspects of physical security related to computing.
3. Explain the trade-offs of using cloud-based storage, involving confidentiality, access, and data integrity.
4. Explain legal aspects of computing, including HIPAA and other relevant laws.
5. Know and be able to explain ethical issues involving the use of computers.
6. Explain and apply principles of cybersecurity.

### **COURSE CALENDAR**

This course meets for a minimum of 37.5 lecture contact hours during the semester. Students have significant assignments based on readings from the primary literature, participate in classroom discussions regarding current research topics, complete periodic homework and laboratory assignments, and periodic exams in addition to the final exam. Students are expected to prepare for any class assignments or quizzes over the material covered in class or in the reading material. Successful completion of these activities requires at a minimum six additional hours of outside of classroom work each week.

### **CONTENT**

### **HOURS**

Security .....	12
Computer security – confidentiality, integrity and accessibility	
Implementing real-world security practices	
Physical security and how it impacts computer security	
Cybersecurity and cyberterrorism	

Legal aspects of computing .....	9
Relevant legal issues, to include the Health Insurance Portability and Accountability Act (HIPAA)	
Cloud-based storage and security .....	9
Types of cloud service (platform, infrastructure, and software)	
Trade-offs of cloud storage	
Data Analytics.....	9
Big data	
Analysis and storage	
Ethical issues in computing .....	3
Ethics and the law	
ACM/IEEE codes of ethics and conduct	
Exams (plus a comprehensive final).....	3
	TOTAL
	45

## REFERENCES

Dequenoy, P. Ethical, Legal and Professional Issues in Computing, Cengage Learning, 2007.

Pfleeger, Security in Computing, Prentice Hall, 2015.

Smith, R. Information Security, Jones and Bartlett Learning, 2011.

Assorted papers and web sites to cover topics such as data analytics, big data, and other relevant topics.