CYBER SECURITY (CYB)

CYB 501. Foundation of Information Security. (3 Units)
An overview of information security concepts; a basic introduction to information assurance principles and information security systems and specific issues pertaining to risk assessment and cyber threats; a brief examination of the laws governing information security including public policy and ethical standards.
Offered Fall, Spring

CYB 505. Practical Cyber Security. (3 Units)
Prerequisite: Restricted to majors. To understand and deal with real-world cyber threats, this course explores the latest development in the area of cyber security, and provides theory and hands-on practice in playing with cyber security software and network systems in a laboratory environment.
Offered Fall, Spring, Summer

CYB 525. Cybersecurity System Analytics and Automation. (3 Units)
Provides theory and hands-on practice in data analytics and threat intelligence in cybersecurity systems. Explores way to perform analytical tasks automatically, and solve cryptography, intrusion detection, automation, log creation, log management and other problems in cybersecurity.
Offered Fall, Spring, Summer

CYB 528. Foundations of Cyber Forensics. (3 Units)
Presents a high level introduction of Cyber Forensics including the different approaches in computer forensics investigation. Covers the ethics as it is mapped to the objectives of the Center of Academic Excellence in Cybersecurity.
Offered Spring

CYB 529. Advanced Cyber Forensics. (3 Units)
Prerequisite: CYB 528 is required. Provides advanced case examples in digital forensics. Provides understanding of everyday issues in real investigations such as technical, logistical, and legal challenges. Presents advanced methodologies and proven practices applied in digital investigations.
Offered Infrequent

CYB 535. CyberOps and Cloud DevSecOps. (3 Units)
Prerequisite: restricted to majors. Provides theory and hands-on practice on day-to-day, tactical knowledge and skills that Security Operations Center teams need to detect and respond to cybersecurity threats. Main topics include security monitoring, host-based analysis, intrusion analysis, and security policies and procedures.
Offered Fall, Spring, Summer

CYB 538. Information Security Policy and Procedure. (3 Units)
Examines the legal concepts, principles and theories of public policy as they apply to information technology. A review of the American system with its federal and state levels will be studied to provide students with the necessary legal background in which the world of Information Technology functions. A special emphasis will be placed on compliance issues, Cyber laws, and regulations.
Offered Fall

CYB 548. Advanced OS Security. (3 Units)
A study of the challenges involved in the design and implementation of a secure operating system. Identify security threats and monitor operating system security implementations; learn how to configure operating systems to meet security standards using best practices.
Offered Summer

CYB 551. Data Communications and Computer Networks. (3 Units)
A comprehensive survey of the computer communication and field including data communication concepts and categories, communications switching and routine, network configuration and management. Topics also include layered network models and protocol.
Offered Spring

CYB 552. Advanced Hacking Prevention. (3 Units)
To evaluate advanced hacks and methods of defense fortification. Provides more advanced network defense concepts and techniques. Covers more detailed theoretical concepts in networking. State-of-the-art techniques and tools will be used to learn how to protect network.
Offered Fall

CYB 555. Information Assurance and Network Security. (3 Units)
Students will examine the concepts and topics in network security and information assurance. Through this course, students will conduct a CRT (Capture The Flag) exercise, and learn more about security threats, secure socket layer, SSH, Tunneling, PGP, encryption algorithm, vulnerabilities and other related topics.
Offered Spring

CYB 562. Advanced Communication System Security. (3 Units)
The course covers more advanced security life-cycle of products and services; it will go beyond requirements and policy development and progressing through the actual development, deployment an operations. This course will also provide advanced methods regarding the issues associated with protecting information assets.
Offered Infrequent

CYB 572. Secure Cloud Computing. (3 Units)
Students will learn four cloud service models: IaaS-Infrastructure as a Service, PaaS-Platform as a Service, SaaS-Software as a Service and BpaaS-Business Process as a Service. This course will also cover topics related to big data, and challenges resulting from the implementation of high computing performances.
Offered Summer

CYB 584. Software Project Planning and Management. (3 Units)
Students will learn to build a software project and manage it professionally. Additionally, they will be expected to devise a plan with a schedule of finished products, a tracking system to monitor the building process of the project, and a risk management assessment.
Offered Fall

CYB 590. Graduate Project. (3 Units)
Capstone course. Students are required to submit and present a semester long project. Students will develop their own cyber security project, devise hypotheses related to their study, gather data to support their hypotheses, and present the results.
Offered Fall, Spring

CYB 595. Special Topics in Cyber Security. (3 Units)
Advanced topics in cyber security not covered by current course offerings. May be used for elective credit in departmental programs. Subject to approval. Consent required.
Offered Fall, Spring

CYB 600. Graduate Continuation Course. (1 Units)
Prerequisite: Signature of graduate program coordinator required. Graduate students, who have completed their course work but not their thesis, project, or comprehensive examination, or who have other requirements remaining for the completion for their degree, may attain continuous enrollment by enrolling in this course.
Offered Fall, Spring