Graduate International Pathway: Cybersecurity Science track

Course Options

- **CS 5323. Principles of Cyber Security. (3-0) 3 Credit Hours.**
  - **Course Description:** Prerequisites: CS 3733 and CS 3873. An introduction to the protection of computer systems and networks. Topics include authentication, access controls, malicious logic, formal security methods, assurance and trust in computer systems and networks, firewalls, auditing and intrusion detection, cryptography and information hiding, risk management, computer forensics, and ethics. (Formerly titled Principles of Computer and Information Security.
  - **Semesters available:** Fall, spring.

- **CS 5713. Practical Attack and Defense Techniques. (3-0) 3 Credit Hours.**
  - **Course Description:** Prerequisite: CS 5323. This course will provide a comprehensive hands-on experience on various open-source software tools and techniques for conducting information gathering, vulnerability analysis, web application analysis, password cracking, wireless attacks, network sniffing and spoofing, software exploits and reverse engineering, social engineering, forensics and post-exploitation services.
  - **Semesters available:** Fall.

- **CS 5343. Developing Secure Systems and Software. (3-0) 3 Credit Hours.**
  - **Course Description:** Prerequisite: CS 3733. An examination of methods for designing secure computer systems, networks, and software. Topics include the security development process, security policies and models, threat modeling, security code reviews and testing, the formal verification process, validation, and assessments.
  - **Semesters available:** Fall.