CYBERSECURITY (CYBR)

CYBR 5000 - Cybersecurity Principles
Credit(s): 3 Credits
This course is an overview to the field of Cybersecurity. Students will be exposed to the key concepts of information and information security systems. Students will explore these concepts through a formal review of historical breaches across a variety of industries. Students will then explore best of practice security plans and process used in a holistic approach to cybersecurity for an organization.

CYBR 5010 - Networking Concepts
Credit(s): 3 Credits
CYBR 5010 – Networking Concepts [Networking Concepts] This course will emphasize various networking technologies in use in modern networks. Students will design a basic network topology to meet the most common design requirements. Students will be introduced to network monitoring tools and networking mapping tools.

CYBR 5020 - Data Administration
Credit(s): 3 Credits
This course provides the principles and practices of implementing data security. Students will demonstrate the skills to identify and solve relevant security issues across a variety of data system architectures and data management systems. Students will analyze and evaluate methods to protect the confidentiality, integrity, and availability of data throughout the data life cycle. Topics will include data asset management, data audit principles, enforcement of access controls measures, date compliance and policy development.
Prerequisite(s): CYBR 5000 with a grade of C or higher

CYBR 5030 - Cyber Threats and Defense
Credit(s): 3 Credits
This course is divided into two sections: computer network defense (CND) and computer network offense (CNA & CNE). Students will first review various security principles, controls and monitoring technologies (e.g., defense in depth, firewalls, IDS/IPS). Students will then review the various ways attackers defeat security controls and monitoring technologies. At the completion of the course, students will a more thorough understanding of how to defend networks.
Prerequisite(s): CYBR 5000 with a grade of C or higher

CYBR 5210 - Digital Investigations
Credit(s): 3 Credits
This course will expose students to the forensic science principles and practices used in investigations. Students will be able to describe the steps in performing digital forensics from initial recognition of an incident through the steps of evidence gathering, preservation and analysis, and completion of legal proceedings.
Prerequisite(s): CYBR 5000 with a grade of C or higher

CYBR 5220 - Incident Response and Mitigation
Credit(s): 3 Credits
This course will develop a student's ability to construct plans and processes for a holistic approach to cybersecurity for an organization. These plans will include the protection of intellectual property, the implementation of access controls and patch/change management.
Prerequisite(s): CYBR 5000 with a grade of C or higher

CYBR 5230 - Intrusion Detection and Analysis
Credit(s): 3 Credits
This course will develop a student's competencies and skills related to detecting and analyzing vulnerabilities and threats and develop processes for taking steps to mitigate associated risks. Upon completing this course, students will demonstrate the ability to detect, identify, resolve and document intrusions.
Prerequisite(s): CYBR 5000 with a grade of C or higher

CYBR 5240 - Cloud Security
Credit(s): 3 Credits
This course will develop a student's knowledge of the technologies and services that enable cloud computing. Students will analyze different types of cloud computing models and the security and legal issues associated with them.
Prerequisite(s): CYBR 5000 with a grade of C or higher

CYBR 5910 - Internship Experience in Cybersecurity
Credit(s): 1-3 Credits
This course provides students with an opportunity to complete an internship that requires them to apply the concepts and skills learned in their specific program of study. Prior to registration, students intending to complete this course are expected to have a formal letter from the organization providing details of the work expected from the student during the 8-weeks that constitute the length of the internship. The letter must be signed by an individual with appropriate authority from the organization sponsoring the internship. In addition, the internship is subject to approval by the program director who will assess the alignment between.
Restrictions:
Enrollment limited to students in the Schl for Professional Studies college.

Attributes: Special Approval Required

CYBR 5930 - Special Topics
Credit(s): 3 Credits (Repeatable for credit)

CYBR 5960 - Masters Research Project I: Workforce Center Certification Track
Credit(s): 1 Credit
The Master's Research Project (MRP) emphasizes a synthesis and demonstration of the competencies gained during a student's time in the MS Cybersecurity program. This is the first course in a three-part sequence of courses. At the end of this credit hour, students will have identified the purpose and scope of the problem they intend to address.
Prerequisite(s): ORLD 5050 with a grade of C or higher; CYBR 5000 with a grade of C or higher; CYBR 5010 with a grade of C or higher; CYBR 5020 with a grade of C or higher; CYBR 5030 with a grade of C or higher
Restrictions:
Enrollment limited to students in the Schl for Professional Studies college.

Attributes: Special Approval Required

CYBR 5961 - Masters Research Project I
Credit(s): 1 Credit
The Master's Research Project (MRP) emphasizes a synthesis and demonstration of the competencies gained during a student's time in the MS Cybersecurity program. This is the first course in a three-part sequence of courses. At the end of this credit hour, students will have identified the purpose and scope of the problem they intend to address.
Prerequisite(s): ORLD 5050 with a grade of C or higher; CYBR 5000 with a grade of C or higher; CYBR 5010 with a grade of C or higher; CYBR 5020 with a grade of C or higher; CYBR 5030 with a grade of C or higher
Attributes: Special Approval Required

CYBR 5962 - Masters Research Project II
Credit(s): 1 Credit
The Master's Research Project (MRP) emphasizes a synthesis and demonstration of the competencies gained during a student's time in the MS Cybersecurity program. This is the second course in a three-part sequence of courses. At the end of this credit hour, students will have created an applied research design that includes a proposal for addressing the organizational problem that was identified and described in CYBR 5960/5961.
Prerequisite(s): AA 5221 with a grade of C or higher; (CYBR 5960 with a grade of S or higher or CYBR 5961 with a grade of S or higher)
Attributes: Special Approval Required

CYBR 5963 - Cybersecurity Masters Research Project III
Credit(s): 1 Credit
The Master's Research Project (MRP) emphasizes a synthesis and demonstration of the competencies gained during a student's time in the MS Cybersecurity program. This is the third course in a three-part sequence of courses. At the end of this credit hour, students will have implemented an applied research project to address an organizational or societal problem, written a formal report of findings and recommendations, and produced a reflection of their experiences and its implications for their future.
Prerequisite(s): CYBR 5962 with a grade of S or higher
Attributes: Special Approval Required

CYBR 5980 - Independent Study
Credit(s): 1 or 3 Credits (Repeatable for credit)