

# Cyber Operations (CYB) Courses

## **CYB1005 Introduction to Cybersecurity**

This course is designed to provide an introduction to the range of disciplines that are fundamental to protecting cyber assets in the modern world. Students learn what cybersecurity and operations are, how they have evolved over the past decades, and how the cybersecurity framework can be applied across a wide range of contexts and industries. This course also provides an introduction to the various technical and non-technical skills that are fundamental in the cybersecurity and operations field. Students are provided with academic foundations to pursue further study in the cyber field. Offered at Online, Providence  
3 Semester Credits

## **CYB2010 Computer Architecture with Assembly Language Programming**

This course is designed to provide students with an understanding of the relationship between hardware and software through the use of the machine and assembly language facilities. Topics include how simple statements translate into processor commands and how various types of storage and programming structures are implemented in the system. Program design, charting, coding, debugging, testing, execution and documentation are accomplished for all concepts that are introduced. Advanced understanding of the relationship between hardware and software is accomplished through the use of assembly language and higher level language (C programming language) facilities. Creating programs that interface with computer hardware is explored. Additional topics include using debug, decision structures, looping structures, addressing constructs, data types, program segments, memory models, subroutines, arrays, video, keyboard and file I/O, parallel processing, terminate-and-stay-resident programs, recursion, inter-language communication, device drivers and embedded programming concepts. Prerequisite(s): CSIS1112. Offered at Charlotte, Online, Providence  
3 Semester Credits

## **CYB3038 HCI/Usable Security**

This course focuses on how to design and build secure systems with human-centric focus. Basic principles of HCI (including the basics of humans' cognitive abilities, principles of usability, design techniques and evaluation methods) are discussed. Through professionally focused exercises, students apply these techniques to the design, building, evaluation and critique of secure systems, while developing security measures that respect human performance and their goals within the system. Focus is on authentication devices, password protection techniques, browsing security, social media and mobile device security. Prerequisite(s): ITEC3050. Offered at Charlotte, Online, Providence  
3 Semester Credits

## **CYB4010 Computer and Network Forensics**

This course introduces students to the nature of digital evidence, the tools and techniques used to acquire such evidence, and the practices used to preserve its integrity through the use of lectures and hands-on exercises. Students are also introduced to the process of testifying and ethics for the expert witness. Prerequisite(s): Senior status. Offered at Charlotte, Online, Providence  
3 Semester Credits

## **CYB4026 Cyber Intelligence**

This course examines the emerging stages to the current operational and political impact of cyber intelligence. Students explore a full range of cyber capabilities from exploitation, attack and defense. Students analyze and discuss several case studies that demonstrate the challenges and benefits of cyber intelligence to the cyber operations and security environment. This course demonstrates how cyber security and operations have changed the nature of intelligence collections, operations and analysis across the intelligence communities. Prerequisite(s): CYB3038. Offered at Charlotte, Online, Providence  
3 Semester Credits