

Hagerstown Community College Master Syllabus CYB 240: Ethical Hacking Fundamentals

Course Information

CYB 240 Ethical Hacking Fundamentals
3 Credits

Instructor Information

Course Description

In this course students will become familiar with offensive network security, ethical hacking and responsibility and network defense and counter measures. Student will study testing, scanning and securing information systems. Topics include hacker methodology and tools, how they operate and how to set up strong countermeasures and defensive systems to protect an organization's critical infrastructure and information. Prerequisite: IST-154 Networking Basics and CYB-210 Ethics and the Information Age. Semesters offered: Fall. 3 credits.

Textbook and Course Materials

Hacker Techniques, Tools, and Incident Handling, Third edition, Sean-Philip Oriyano, ISBN: 9781284147803, ebook

Student Learning Outcomes

- Think critically
- Communicate effectively with both verbal and written forms
- Identify the steps of the hacker methodology
- List and describe the current threats to computer systems and network.
- Perform and share cooperatively in team projects
- Evaluate and implement new and future technologies into current system
- Install, configure, use and manage hacking software on a closed network environment
- Evaluate best practices in security concepts to maintain confidentiality, integrity and availability of computer systems
- Use a network monitoring tool
- Use a network mapping tool
- Describe potential system attacks and the actors that might perform them
- Describe cyber defense tools, methods and components
- Describe appropriate measures to be taken should a system compromise occur.
- Identify the bad actors in cyberspace and compare/contrast their resources, capabilities/techniques, motivations, aversion to risk
- Describe different types of attacks and their characteristics
- Examine the architecture of a typical, complex system and identify significant vulnerabilities, risks, and points at which specific security technologies/methods should be employed

Definition of Credit Hour: Classroom Courses

To earn one academic credit at HCC, students are required to complete a minimum of 37.5 clock hours (45 fifty-minute academic hours) of coursework per semester. Those hours of coursework may be completed through a combination of hours in the classroom and hours outside the classroom. Certain courses may require more than the 37.5 minimum hours of coursework per credit. For most classes, students should expect to complete at least 2 hours of coursework outside of class for each hour of in-class coursework.

Classwork type	Direct Faculty Instruction In-class 37.5 hours required	Student Work Out of Classroom 75 hours required
In-class lecture and discussion	NA	
Reading		25 hours
Quizzes/Study		14 hours
Labs and Exercises		26 hours
Discussions and Class Activities		8 hours
Midterm Paper		8 hours
Cumulative Final Exam		10 hours
Total	NA	91 hours

Services for students with disabilities: Students may receive reasonable accommodations if they have a diagnosed disability and present appropriate documentation. Students seeking accommodations are required to contact the Disability Support Services (DSS) office as early as possible. Students may contact a DSS staff member for an appointment at dss@hagerstowncc.edu or at 240-500-2530.