



Course Syllabus SEMESTER School of STEM

Introduction Information

Course Name:	<i>Ethical Hacker</i>
Course & Section Number:	<i>IST273-xxx</i>
Meeting Day(s) & Time(s):	<i>TBD</i>
Credits:	<i>3</i>
Contact Hours:	<i>3</i>
Instructor's Name:*	
Office Hours & Location:	<i>TBD</i>
OCC Phone:	<i>TBD</i>
OCC Email:**	<i>TBD</i>
Additional Contact Information:	<i>TBD</i>

**Please only use your student OCC email or Blackboard Messages in our course to contact me so I know you are a student and may respond safely.

Catalog Description:

This course teaches about network attack strategies and common countermeasures to thwart those attacks through hands-on simulations. This course also introduces students to various penetration testing tools utilized to analyze networks for vulnerabilities. Through knowledge of these vulnerabilities students will understand how to counter them and improve the network security. Students will perform scans for ports and devices, perform network attacks, implement attack countermeasures, and analyze network traffic, on Windows and Linux operating systems.

Current Textbooks, Materials, Equipment (Cost included in Course Fees):
CompTIA Pentest+ code, included with IA

Prerequisites:

IST175

Course Materials:

CompTIA Pentest+ code, included with IA

Inclusive Access (I.A.) Materials

Inclusive Access (I.A.) Materials are included in the cost of the course to save students money through lower negotiated rates with publishers as per the state of Ohio. Courses containing I.A. materials will have that noted when you click "Find Books" from the course schedule.

This means if your course includes I.A. digital materials, you will receive an email with subject line, "Your inclusive Access Materials," and it will include any codes or digital links. The email will come to your Owens Community College email from the Owens e-Campus Bookstore on the first day of class, if not before that date. Be sure to check your spam (junk email) if you do not find it in your inbox. If the email is not in your inbox or spam folder, contact your instructor immediately. You may also see a folder at the top of your course in Blackboard Labelled "Course Materials by eCampus". This folder will contain any needed codes or links to needed materials included in the I.A. program. Note: It may not include links to eTextbooks if they are provided separately within the course assignments.

If the I.A. materials also include a printed book or are in print form, the item will be shipped to your address of record automatically based on your enrollment in the course. If a course does not contain printed materials or other materials as part of Inclusive Access those materials would need to be purchased separately using the "Find Books" link on the course schedule. When you access the Find Books link you will see which items in a course are included in I.A.

What Will I Learn in This Course?

(where assessed listed in assignment table at the end of the syllabus)

Course Objectives

This Course will:

1. Explain the fundamental concepts of computer systems hacking, network hacking, and defense.
2. Teach terminology related to computer systems hacking, network hacking, and defense.
3. Introduce network attack strategies and countermeasures.
4. Explore current hacking tools including SQL injection, Nmap, and Social Engineering with hands-on simulations.
5. Demonstrate anti-hacking tools and methods including operating services, networking services, and policies through hands-on simulations.
6. Explain the defense of systems and devices through the implementation of defensive systems such as Intrusion Detection System (IDS) and others.
7. Explore methods used to scan for vulnerabilities on Linux systems, Windows systems, network servers, wireless devices, and appliances (any kind of networked device).

Student Learning Outcomes

Students will:

1. Perform reconnaissance on operating systems, applications, and network devices.
2. Demonstrate ability to use system tools to identify vulnerabilities.
3. Describe how to obtain login credentials, administrative access, and escalate privileges using various methods.
4. Define security terminology related to hacking attempts and defending systems.
5. Classify various attack methods and countermeasures.
6. Demonstrate defense of systems and devices by implementing a defense strategy and system.

Institutional Competencies:

Upon graduation at Owens CC students will...

1. Communicate effectively.
2. Act with professional responsibility.
3. Demonstrate sensitivity to others' beliefs and values.
4. Think analytically, critically, and creatively.

Technology, Lab Requirements, & Files:

Specific download and installation instructions are posted in Blackboard.

Use of Artificial Intelligence Tools in Our Course

Use of AI is not permitted for use in this course.

AI is not a replacement for your own thinking and research. Work will be checked for its originality.

Student Data Files:

There are no student data files needed in this course.

Classroom Attendance for F2F, SWD, Hybrid, or WEB Classes:

Hybrid Classes: students must attend this class in person based upon the schedule published and communicated by your instructor ahead of the first meeting. Instructors will not allow a different form of instructional delivery. You may be asked to show your student ID at the initial class meeting if you are unknown to your instructor. **For every two scheduled class meetings missed your final grade will drop one letter grade no matter the reason.**

SWD: for all **Synchronous Web Delivery** Classes, the student must attend this class during the days and times set in the schedule. Example: for a 9:00, M, W SWD class, the student must be online at 9:00 every Monday and Wednesday for this class. **For every two scheduled class meetings missed your final grade will drop one letter grade no matter the reason.**

- **Web cameras:** In a synchronous course, we have a unique opportunity to interact with each other in real time that is not available in a traditional online course. I will have my camera turned on so that you may see me interact in our class. Please have your camera on as well to do the same to build a positive class experience for everyone. Please turn your camera on to introduce yourself, ask questions, and/or respond to questions throughout the class session. Your instructor may request you use your camera and/or show your ID in certain situations, such as at the beginning of a class, when responding to questions or participating in a discussion, during exams, or for an oral presentation. If your camera is off and you do not respond to questions or participate it will count as a missed class meeting. If applicable, your instructor may assist students in blurring their backgrounds. Our online classroom is a safe environment, and we encourage and require you to fully participate.

WEB / Online: for all traditional online classes, also known as **Asynchronous** classes, the student attends at any time and day for instruction. There are no scheduled meetings.

Academic Support

Disability Services Resource Center:

If you have a disability or acquire one, you may be entitled to receive reasonable accommodations intended to assure you an equal opportunity to participate in and benefit from the program. To receive more information or to register for accommodations, please contact the Disability Resource Center at 567-661-7007, email disability@owens.edu, visit <https://www.owens.edu/disability/>, or stop by College Hall 124.

Tutoring Services:

Owens Community College offers academic tutoring and assistance in a variety of subjects including accounting, computing, economics, mathematics, science, and writing. For more information go to: <https://www.owens.edu/successcenters/>.

Counseling Services:

Counseling Services provides assistance to students experiencing personal, educational, interpersonal/relationship, family, social, or psychological difficulties. If you feel you may benefit from this service, please contact them at counselingservices@owens.edu. More information is at <https://www.owens.edu/counseling/>.

Campus and Community Connections:

The Center for Campus and Community Connections (College Hall 151) is a walk-in office created to provide retention support through resource stability initiatives and community connections. Go here for more information: <https://www.owens.edu/connection/> or contact connections@owens.edu

Owens Library:

The Owens Library offers two locations (Toledo and Findlay) as well as online resources. For more information visit <https://www.owens.edu/library/>.

Students can find more information on campus resources, student support, student life, and security at this [link](#).

General Information:

Student Code of Conduct:

All students are expected to follow Owens Community College's [Student Code of Conduct](#), which includes academic honesty, encompassing plagiarism. See the [Board Policy](#) for more information.

Anti-Discrimination and Harassment & Title IX/Sexual Misconduct:

All students, faculty, and staff are expected to follow Owens Community College's [Anti-Discrimination and Harassment Policy](#) and the College's [Title IX Policy](#)/Sexual Misconduct Procedures and Guidelines. The College strictly prohibits and will not tolerate harassment, discrimination, intimidation, or hostile/offensive working or learning environments.

Religious Accommodations:

A student seeking accommodation for an absence permitted under Ohio's Testing Your Faith Act must provide the instructor with a **written email** notice with the specific dates for an absence and must do so not later than fourteen (14) days after the first day of instruction. **Alternative accommodations are not retroactive, and no academic penalty will be imposed for an absence under the policy***. The request for alternative accommodation will be kept confidential. Students with questions about a religious accommodation under Ohio's Testing your Faith Act may contact the College's Office of Academic Affairs: provost@owens.edu

*The policy may be found on the Owens website: [3358:11-2-63 Accommodation](#) for a Student Absence for the Observance of Religious Beliefs and Practices Policy

Document Collection:

Throughout the semester, your instructors may ask for a variety of assignments including tests and/or quizzes for student learning of general education or program assessment. Please save all your class materials until the end of the semester.

Classroom Admittance:

OCC classes shall only be attended by the officially registered OCC students or perspective students, instructor of record, guest lecturer, or substitute. Visitors are not permitted to be in the classroom and should not be invited to attend or participate in the class. See FERPA regulations for more information.

What Will Our Classroom Environment Be Like?

Respectful Class Communication:

Respectful communication: Our classroom is a safe space. Respect in class, online, in posts, on discussion boards, and all communications is important.

Asking for help/clarification: Students are encouraged to contact your instructor as soon as you have questions or need clarification. Your instructor will help you or connect you with someone who can assist.

Unless I am told otherwise, I will assume that every student understands everything posted in our Blackboard course and through online chats, messages, or emails. If you don't understand something, or if you don't understand why we are approaching our materials in the way we are, please ask. Future classes will build on and further develop the concepts we learn.

If you are overwhelmed, tell me. I can't help if I don't know. Working a little bit every day on a technical course is the secret of finishing successfully.

Post questions on the Class Help Forum. In this course, you can post questions in the Class Help Forum located at the top of our course. Please make sure your question has not been answered already in the Class Help Forum on the discussion board. This is the best way to get your questions answered and help your classmates!

Online courses: Communication is very important. The instructor will communicate with you by email and Blackboard announcements. It is the student's responsibility to log in to the Blackboard shell frequently (suggested 3-5 times/week) and check email daily.

I know an online class is challenging for some of you. It takes discipline and time management. You need to keep going even when you want to quit. My goal as your instructor is to help you become as successful as possible in this class, I guarantee you will have to work for it.

Inclusion Statement:

Students in this class are encouraged to speak up and participate during class meetings, online, and on discussion boards in a positive manner. Because the class will represent a diversity of individual beliefs, backgrounds and experiences, every member of this class will show respect for every other member of this class. I support an inclusive learning environment where diversity and individual differences are understood, respected, appreciated, and recognized as a source of strength. We expect that students, faculty, administrators, and staff at OCC will respect differences and demonstrate diligence in understanding how other peoples' perspectives, behaviors and worldviews may be different from their own.

How Will Your Grade Be Determined and What Are the Major Assignments for the Semester?

Final Grading Scale

Grading Procedure:

Grades are calculated on a straight average.

Assignments include:

- Discussions
- Lab Sim Practice Question Sets
- Lab Sim: Simulations
- Lab Sim: Videos
- Lab Sim: Demos
- Final Exam

Final Exam *Required - 1000 points

You must pass the final exam to pass the course.

Total Course Points 2719

90 –100 % A

80 -89 % B

70 –79 % C (you must pass the final to pass this course, anything less earns an "F" grade)

60 -69 % D

Below 60 % F

Your grades are displayed in points throughout the course to help you understand your progress. They do not indicate final grade since this is based upon the final exam and your demonstration of mastering the material presented. **Guidelines:** This is a professional, college course, you are required to use proper spelling, punctuation, complete sentences, and correct grammar throughout the course...do not be offended if

emails are returned for correction! Please complete your work carefully, spell checking, and then submitting.

General Grading Rubric for All Assignments

Not submitted on time; "0" points

Assignment submitted on time, follows directions, is of appropriate length, and demonstrates that the student grasps the topic, full points

Assignment submitted on time, is incomplete, misses the point, or does not demonstrate student grasp of topic; half points (more or less depending on degree). Missing assignments 0 Points

Discussions:

Participation in course discussions in each Learning Module are worth significant points in this course.

Grade Transfer: It is the student's responsibility to verify grades for completed assignments transferred successfully to the Blackboard gradebook and notify the instructor before the due date of any issues so they may be resolved.

***** Waiting until the day assignments are due to complete work is not viable to be successful, please work ahead, we want your success!!*****

Posting of Grades & Communications:

Grades will be posted on Blackboard in the Gradebook. Student work will be graded within 1 week of the due date or less. Student questions will be answered as soon as possible. Please do not expect responses on weekends or holidays.

Late Work:

Late work may be accepted at the instructor's discretion with documentation from the student. Examples of documentation are a doctor's note, hospital admissions receipt, death notice (immediate family only) and such items.

Consider this: All students are able and encouraged to work ahead. If you cannot find time to work ahead of due dates, in case of emergency, when would you find time to make up the work? You control your schedule. Please plan the necessary time for coursework.

Work Not submitted on time without prior arrangement; "0" points.

You are expected to be online working on a course in Blackboard for a minimum of 3 times per week and to meet all due dates. This includes checking announcements and e-mails regularly.

Research suggests that students should spend approximately 2-3 hours, per credit hour, studying in order to be successful in their courses. **STEM classes like this one often require 3-4 hours, per credit hour, of studying and computer work to be successful in addition to homework time.**

Class Attendance:

For on ground (traditional), hybrid, and online synchronous class meetings the student is expected to attend and (for online synchronous) have their camera turned on. For every two scheduled meeting sessions not attended for any reason the final grade will be reduced by one letter grade.

Student Responsibilities:

- Attendance: Class discussions, activities and participation are an integral component of learning and understanding the course material. If you are going to be absent or not logging in, please notify the instructor prior to missing the class or assignments to discuss your options, if possible. Please look at the assignment calendar to see what will be missed (topic, assignments, etc.) and contact the instructor if you have questions.
- Assignment submission (format, etc.): Students are to be familiar with the assignment calendar in Blackboard and how to submit assignments. If you are unable to complete an assignment on time, please contact your instructor as soon as possible to discuss options well in advance of the due date. Remember, you have two full weeks to complete assignments except in the last week.
- Contacting your instructor: Your instructor has provided their email address. Please include the course and section number on the Subject line of your email so your instructor knows that you are a student and which class you are asking about. Blackboard Messages in the course are the preferred contact method.

I expect questions and that's okay. Don't hesitate! Reach out when you need assistance! I am here to help you!

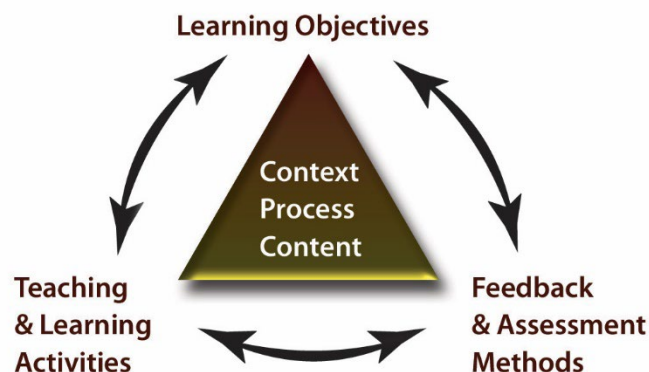
Tentative Course Timeline and Assignment Schedule, Including How Assignments Relate to Student Learning Outcomes

(All specific assignments are in Blackboard; this is just a guide, please check To Do List in each Learning Module in Blackboard).

Module /Week	Student Learning Outcomes	Topic
Learning Module 1 Week 1 & 2	1	Lab Sims: 1.1 to 2.1 Introduction Discussion Module 1 Discussion
Learning Module 2 Week 3 & 4	1, 2	Lab Sims: 2.2 to 3.3 Module 2 Discussion
Learning Module 3 Week 5 & 6	2	Lab Sims: 3.4 to 4.5 Module 3 Discussion
Learning Module 4 Week 7 & 8	2, 3	Lab Sims: 5.1 to 6.3 Module 4 Discussion
Learning Module 5 Week 9 & 10	4	Lab Sims: 7.1 to 7.3 Module 5 Discussion
Learning Module 6 Week 11 & 12	5	Lab Sims: 8.1 to 9.2 Module 6 Discussion
Learning Module 7 Week 13 & 14	5, 6	Lab Sims: 9.3 to 10.3 Module 7 Discussion
Learning Module 8 Week 15 & 16	1-6	Module 8 Discussion Final Exam – Certification

Disclaimer: “The instructor reserves the right to amend this syllabus as deemed necessary and will communicate such amendment to the students in the course.”

PROGRAM LEARNING OUTCOMES BY CIS DEGREE PROGRAM



Computer Networking & Systems Administration Program Outcomes

Upon completion of the program, students will be able to:

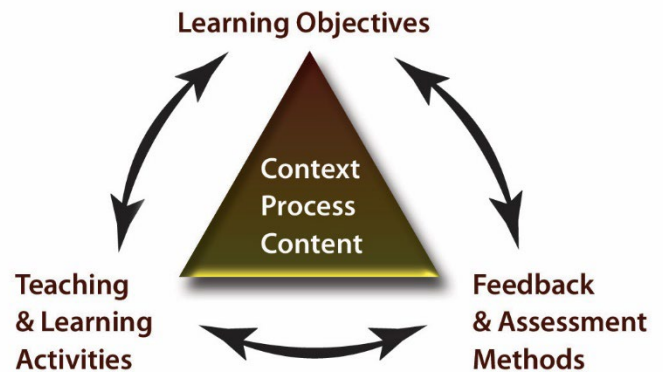
1. Identify possible causes of network and technical problems and to install and maintain network hardware and systems software.
2. Evaluate system performance and security and take corrective action.
3. Communicate with technical and non-technical people, and how to translate technical information into business language and document solutions.
4. Identify and demonstrate understanding of the ethical and legal issues that impact technology.
5. Earn IT Industry Certifications to demonstrate their skills learned and build their credentials for employment and further study.

Certificates embedded in the degree program:

- Network Tech I certificate
- Network Tech II certificate

PROGRAM LEARNING OUTCOMES BY CIS DEGREE PROGRAM

Computer Programming & Development Program Outcomes



Upon completion of the program,
students will be able to:

1. Effectively solve problems using a variety of data formats and environments.
2. Analyze, design, implement, test and document solutions to modern business problems in more than one computer programming language.
3. Demonstrate confidence in the ability to work as a computer programmer/developer in a modern business environment, both independently and as part of a team.
4. Identify and demonstrate understanding of the ethical and legal issues that impact technology.
5. Earn IT Industry Certifications to demonstrate their skills learned and build their credentials for employment and further study.

Certificates embedded in the degree program:

- Computer Programming – Developer I certificate
- Computer Programming – Developer II certificate

Program Learning Outcomes by CIS Degree Program

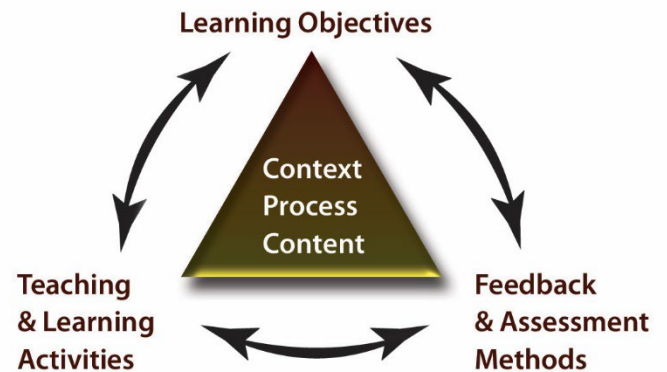
Computer Science Program Outcomes

Upon completion of the program, students will be able to:

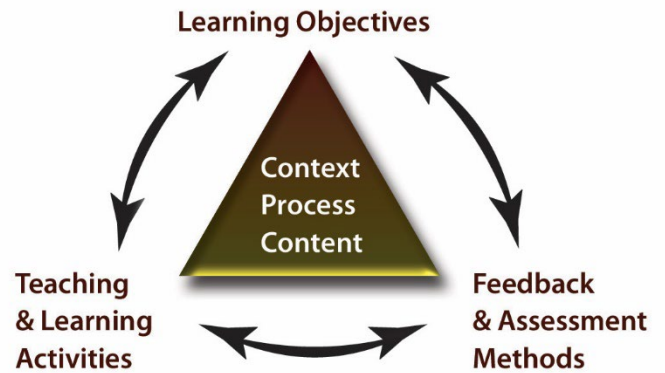
1. Design, analyze and test computer programs and systems.
2. Apply mathematical and algorithmic principles to solve computing problems.
3. Communicate effectively with a range of audiences about computer technologies.
4. Identify and demonstrate understanding of the ethical and legal issues that impact technology.
5. Earn IT Industry Certifications to demonstrate their skills learned and build their credentials for employment and further study.

Certificates embedded in the degree program:

- Computer Science Tech I certificate
- Computer Science Tech II certificate



PROGRAM LEARNING OUTCOMES BY CIS DEGREE PROGRAM



Computer Systems Technologies & Support Program Outcomes

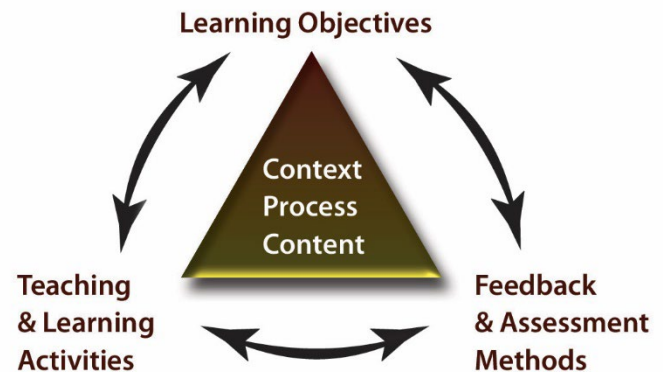
Upon completion of the program, students will be able to:

1. Identify Information Systems-related problems and to document and recommend a solution demonstrating both effective research and documentation skills.
2. Effectively communicate both orally and/or in written form with management, team members or customers.
3. Install and maintain secure computer hardware and systems software.
4. Demonstrate knowledge and ability to support applications, hardware, and security.
5. Identify and demonstrate understanding of the ethical and legal issues that impact technology.
6. Earn IT Industry Certifications to demonstrate their skills learned and build their credentials for employment and further study.

Certificates embedded in the degree program:

- Computer Support certificate
- IT Project Management certificate

PROGRAM LEARNING OUTCOMES BY CIS DEGREE PROGRAM



Computer WAN & Cloud Technologies Program Outcomes

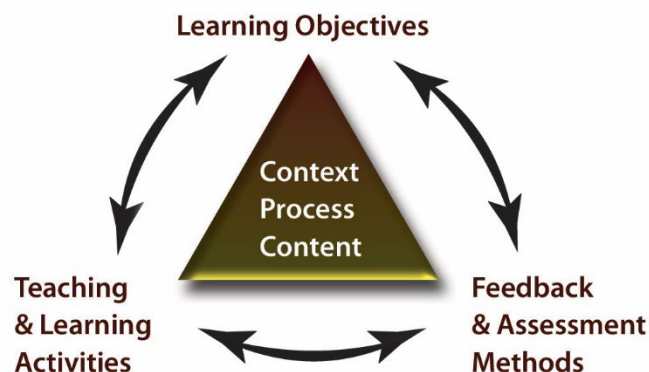
Upon completion of the program, students will be able to:

1. Design, configure, troubleshoot and secure networks.
2. Demonstrate use of network protocols, routing, switching, hardware and management.
3. Implement cloud computing principles, virtualization, cloud infrastructure and platform-as-a-service (PaaS) solutions.
4. Communicate effectively with a range of audiences about computer technologies.
5. Identify and demonstrate understanding of the ethical and legal issues that impact technology.
6. Earn IT Industry Certifications to demonstrate their skills learned and build their credentials for employment and further study.

Certificates embedded in the degree program:

- Computer WAN Cloud Tech I certificate
- Computer WAN Cloud Tech II certificate

PROGRAM LEARNING OUTCOMES BY CIS DEGREE PROGRAM



Cyber Security Program Outcomes

Upon completion of the program, students will be able to:

1. Identify validated sources for security alerts and tools.
2. Use a collection of appropriate tools and techniques to identify, isolate, eliminate and recover from threats and to make appropriate recommendations in order to avoid, lessen, or mitigate such risks.
3. Create and maintain a knowledge base including end-user documentation, policies, procedures and problem resolutions using industry standard maintenance and reporting tools.
4. Secure and test processes for business and industry continuity and disaster recovery.
5. Identify and demonstrate understanding of the ethical and legal issues that impact technology.
6. Earn IT Industry Certifications to demonstrate their skills learned and build their credentials for employment and further study.

Certificates embedded in the degree program:

- Security Tech certificate