

**ETHICAL HACKING**

# NET 185 Section: 001

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| **Credit Hours:** | 4.00 | **Lab Hours:** | 0.00 | **Lecture Hours:** | 4.00 |
| **IAI Core:** |  | **IAI Majors:** |  | **PCS:** |  |
| **Semester:** | **FALL 2014** | **Course Begins:** | **8/18/14** | **Course Ends:** | **12/11/14** |
| **Days:** | **ONLINE** | **Times:** | **ONLINE** | **Room:** | **ONLINE** |

**Instructor:** Mike J. Tetreault

1. **mail:** [mtetreault@mchenry.edu](mailto:mtetreault@mchenry.edu)

**Phone:** 815-455-8730

**Office Hours:** See Canvas

# Office Location: A124

**Other Contact Information:** All communication regarding this class should be done through CANVAS.

**Website (optional):** mchenry.instructure.com

# Required Course:

**Textbook(s): Ethical Hacking and Countermeasures: Attack Phases**

EC-Council Certified Ethical Hacker ISBN-13: 978-1435483606

# Ethical Hacking and Countermeasures: Threats and Defense Mechanisms

EC-Council Certified Ethical Hacker ISBN-13: 978-1435483613

# Ethical Hacking and Countermeasures: Secure Network Infrastructures

EC-Council Certified Ethical Hacker ISBN-13: 978-1435483651

# Supplies (if desired): None

**Course Description:**

Ethical Hacking offers intermediate and advanced instruction in computer security. This class helps prepare students for the industry-endorsed Certified Ethical Hacker Certification exam offered by the International Council of Electronic Commerce Consultants (EC-Council). It covers how intruders escalate privileges and what steps can be taken to secure a system. Students also learn about intrusion detection, policy creation, social engineering, open source intelligence, incident handling and log interpretation. This course may be repeated twice due to changing technology. This course was formerly CIS 185.

**Course Note:** Offered only in odd-numbered years.

# Course Prerequisite: NET 110 and NET 140 and NET 180. Section Notes:

None

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# Course Objectives:

Upon completion of the course, the student will be able to:

* 1. Understand the concepts behind various types of Security Topologies
  2. Understand the concept of and know how to reduce the risks of social engineering
  3. Recognize and understand the administration of remote access technologies. Internet, email and directory security, file transfers protocols, and wireless technologies concepts
  4. Differentiate the types of intrusion detection, be able to explain the concepts of each type, and understand the implementation and configuration of each kind of intrusion detection system
  5. Understand and explain the concepts of PKI (Public Key Infrastructure)
  6. Identify and explain different kind of cryptographic algorithms
  7. Identify and be able to differentiate different cryptographic standards and protocols

# Course Outline:

1. Introduction to Ethical Hacking
   1. Understand the concepts behind various types of Security Topologies
2. Footprinting
3. Scanning
   1. Understand security concerns and concepts of various types of media
4. Enumeration
5. System Hacking
6. Trojans and Backdoors
7. Sniffers
8. Denial of Service
9. Social Engineering
   1. Understand the concept of and know how to reduce the risks of social engineering
10. Session Hijacking
11. Hacking Web Services
12. Web Application Vulnerabilities
    1. Recognize and understand the administration of remote access technologies.
    2. Internet, email and directory security.
    3. File transfers protocols.
    4. Wireless technologies concepts
13. Web Based Password Cracking Techniques
14. SQL Injection
15. Hacking Wireless Networks
16. Viruses
17. Novell Hacking
18. Linux Ha king
19. Evading IDS, Firewalls and Honeypots
    1. Differentiate the types of intrusion detection, be able to explain the concepts of each type, and understand the implementation and configuration of each kind of intrusion detection system
20. Buffer Overflows
21. Cryptography
    1. Understand and explain the concepts of PKI (Public Key Infrastructure)
    2. Be able to identify and explain different kind of cryptographic algorithms
    3. Identify and be able to differentiate different cryptographic standards and protocols

# Assignments and Grading Criteria

Final grades are determined through a weighted average based on the following categories:

Canvas Discussions 25% Chapter Review Questions 25% Chapter Quizzes 25%

Final Exams 25%

100%

After your numerical grade has been calculated, your letter grade will be determined as follows:

A 90–100% of weighted grade B 80–89% of weighted grade C 70–79% of weighted grade D 60–69% of weighted grade

F Less than 60% of weighted grade

# Policies

**Attendance policy:** This is an online course. Attendance is not part of the grade for this class. You should login to CANVAS regularly to check for announcements from the instructor.

**Late work/make-up policy:** I do not accept late work. There are no exceptions to the course schedule.

**Cheating:** Cheating on Tests or Assignments will not be tolerated. If any student is caught cheating on a Test or Assignment they will automatically fail the course. This includes submitting another student’s assignment or allowing another student to submit their assignment.

# Weekly Course Schedule

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| --- | --- | --- |
|  | **Start – End** | **Course Schedule** |
| Week #1 | 08/18/14 – 08/24/14 | 1.1 - Introduction to Ethical Hacking |
| Week #2 | 08/25/14 – 08/31/14 | 1.2 - Footprinting |
| Week #3 | 09/01/14 – 09/07/14 | 1.3 - Scanning |
| Week #4 | 09/08/14 – 09/14/14 | 1.4 - Enumeration |
| Week #5 | 09/15/14 – 09/21/14 | 1.5 - System Hacking |
| Week #6 | 09/22/14 – 09/28/14 | 1.6 - Penetration Testing |
| Week #7 | 09/29/14 – 10/05/14 | 2.1 - Trojans and Backdoors |
| Week #8 | 10/06/14 – 10/12/14 | 2.2 - Viruses and Worms |
| Week #9 | 10/13/14 – 10/19/14 | 2.3 - Sniffers |
| Week #10 | 10/20/14 – 10/26/14 | 2.4 - Social Engineering |
| Week #11 | 10/27/14 – 11/02/14 | 2.5 - Phishing |
| Week #12 | 11/03/14 – 11/09/14 | 2.6 - Denial of Service |
| Week #13 | 11/10/14 – 11/16/14 | 2.7 - Buffer Overflows |
| Week #14 | 11/17/14 – 11/23/14 | 5.1 - Hacking Wireless Networks |
| Week #15 | 11/24/14 – 11/30/14 | 5.2 - Physical Security |
| Week #16 | 12/01/14 – 12/07/14 | * 1. - Evading IDS, Firewalls and Detecting Honeypots   2. - Cryptography |
| Week #17 | 12/08/14 – 12/11/14 | Final Exam |

**Withdrawals:** The last day to drop this course is **11/12/14.** Failure to attend class does not constitute official withdrawal. If students are considering a withdrawal, they should consult directly with the instructor and an academic advisor. Students may withdraw from a class through the Registration Office, either in person or by fax: (815) 455-3766. In their request, students should include their name, student ID number, course prefix, number and section, course title, instructor, reason for withdrawing, and their signature. Withdrawal from a course will not be accepted over the telephone.

Please refer to the following link for other important college dates: [www.mchenry.edu/academiccalendar.asp](http://www.mchenry.edu/academiccalendar.asp)

# General Education Goals:

1. Critical Thinking: To identify, define, analyze, synthesize, interpret, and evaluate ideas.
2. Information Literacy: To locate, evaluate, and use resources effectively.
3. Effective Communication: To develop, articulate, and convey meaning.
4. Ethical Awareness: To identify and make responsible choices in a diverse world.
5. Technological Literacy: To use tools skillfully.

# Assessment:

Some student work may be collected for the purpose of assessment, including student competency in the general education goals, the program, or the course.

# Effective Fall 2014: Student E-Portfolio:

The instructor of the course will designate at least one graded assignment for possible inclusion in the student E-portfolio. Students applying for an AA, AS, AFA, AES, or AGE degree must document their learning outcomes with a graded assignment for each of the five general education goals by the time of graduation. These five assignments and a cover letter will be in the student E-portfolio in Canvas.

# Academic Support for Special Populations Students

McHenry County College offers support services for students with special needs. It is the student's responsibility to meet with the Special Needs Coordinator and provide current documentation regarding his/her disability and receive information about the accommodations that are available.

In addition, as a student enrolled in a career or technical education program at McHenry County College, you may be eligible for services and assistance under the Carl D. Perkins III Grant. Grant funds are used, in part, to assist students who are at risk of not succeeding in their educational pursuits.

The traits that often prevent students from succeeding are: economic disadvantage, academic disadvantage, disability/disabilities, single parent, displaced homemaker, nontraditional, and limited English proficiency (LEP). The definitions of each trait are available in the Special Needs Office. Students with one or more of these traits are referred to as **Perkins Special Populations Students.**

If you would like to know if you are eligible for services at anytime during the semester, please do not hesitate to contact the Special Needs Coordinator. The office is Room A260, and phone number is (815) 455-8676.

# Academic Integrity

As an educational community, McHenry County College values the pursuit of academic excellence and integrity. In accordance with this philosophy and Chapter 10, Act 5 of the 1994 Illinois Community College Act, academic dishonesty in any form, including cheating, plagiarism, and all other acts of academic theft, is considered intolerable. Appropriate sanctions, up to and including suspension from the College will be imposed by authorized College personnel.

# Copyright Policy

MCC will maintain current procedures and guidelines to ensure that all staff and students comply with applicable copyright laws and other intellectual property protection laws. The College will encourage staff and students to engage in the development of intellectual property and facilitate ownership protections with respect to such development of intellectual property.

The College expects that staff and students will act responsibly and ethically in a manner consistent with all copyright laws and College copyright procedures and guidelines. This policy authorizes the College to adopt and maintain such procedures and guidelines necessary to ensure compliance with copyright laws and to facilitate ownership protection with respect to the development of intellectual property.

# Student Code of Conduct and the Judicial Process

Consistent with the MCC mission is an expectation that students will govern themselves in terms of appropriate behavior with emphasis on self-respect and respect for others. It is the practice of the College to respect the properly exercised rights of its students. The College recognizes a student’s rights within the institution to freedom of speech, inquiry and assembly; to the peaceful pursuit of education; and to the reasonable use of services and facilities at MCC.

MCC has adopted a Student Code of Conduct and judicial process to maintain a learning environment of respect, civility, safety, and integrity for all members of the MCC community.

Whenever possible, sanctions for violations of the Student Code of Conduct may be educational in nature. However, violations affecting the health and safety of members of the MCC community are deemed to be the most serious. Therefore, acts of violence, threats or dangerous behavior are most likely to result in a suspension from the College. Violations of the academic dishonesty policy may also result in suspension or expulsion from the institution and/or reduced or failing grade.

# Children on Campus

For the safety of children on campus, children (i.e., less than 16 years of age) are not permitted on campus unattended by a parent/guardian, except when they are attending classes offered by MCC for children. The College requires that no children be allowed into a classroom/laboratory environment, including the Testing Center, Learning Center and computer labs, solely for the purpose of a parent/guardian to provide direct supervision of his/her child.

# Teaching Schedule

The scheduling of the activities and teaching strategies on this syllabus, but not the objectives or content, may be altered at any time at the discretion of the instructor.

# Resources

The following are useful resources available to you as a student at McHenry County College:

**Advising and Transfer Center: Phone (815) 479-7565; Office A257** [www.mchenry.edu/atc](http://www.mchenry.edu/ATC/Index.asp)

# Counseling:

**Phone (815) 455-8765; Office A257**

[www.mchenry.edu/counseling](http://www.mchenry.edu/counseling)

# Financial Aid:

**Phone (815) 455-8761; Office A262**

[www.mchenry.edu/financialaid](http://www.mchenry.edu/financialaid)

# Library:

**Phone (815) 455-8533; Office A212**

[www.mchenry.edu/library](http://www.mchenry.edu/library)

# Special Needs:

**Phone (815) 455-8676; Office A260**

[www.mchenry.edu/specialneeds](http://www.mchenry.edu/specialneeds)

# Tutoring and Study Skills (Sage Learning Center):

**Phone (815) 455-8579; Office A247**

[www.mchenry.edu/sage](http://www.mchenry.edu/sage)

This workforce solution was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timelines, usefulness, adequacy, continued availability, or ownership. This solution is copyrighted by the institution that created it. Internal use, by an organization and/or personal use by an individual for non-commercial purposes, is permissible. All other uses require the prior authorization of the copyright holder.