

CIS 387/ECE 387 - Section 001

Digital Forensics I

4 Credit Hours, Fall 2022

Lectures: Mon & Wed: 9:30 AM – 10:45 AM

Administration Building | Room 1152

Contact Information:

Prof. Jinhua Guo

Office Location: 211CIS

Phone Number: 313-583-6439

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Office Hours: Mon: 4:00 PM – 6:00 PM (<https://umich.zoom.us/j/9644817515>),

Wed: 11:00 AM – 12:30 PM (in person), or by appointments

Course Description:

This course takes a detailed, hands-on approach to study the procedures and techniques used to identify, extract, preserve, analyze and present digital evidences. Students completing this course will be familiar with the core computer science theory and practical skills necessary to perform basic computer forensic investigations, understand the role of technology in investigating computer-based crime, and be prepared to deal with investigative bodies at a basic level.

Prerequisites: (CIS 200 or ECE 270) and previous or concurrent enrollment in (CIS 310 or ECE 370 or ECE 372).

Program Goals/Outcomes:

<https://umdearborn.edu/cecs/departments/computer-and-information-science/undergraduate-programs/bs-computer-and-information-science/educational-objectives>

Course Objectives/Outcomes:

- Ability to apply digital forensics to practical investigations
- Ability to describe the process of digital forensic analysis on a basic level
- Knowledge of the basic of multimedia processing and multimedia tamper detection
- Knowledge of the basics of digital forensic analysis
- Experience with digital forensic analysis tools
- Ability to use file systems for evidence extraction

Required Materials and/or Technology:

Required Text Book

Guide to Computer Forensics and Investigations, by Bill Nelson, Amelia Phillips and Christopher Steuart, Cengage Learning, 6th Edition, 2019.

Assignment and Grading Distribution (subject to change):

Lab assignments and Projects:	40 %
Midterm Exam:	30 %
Final Exam:	30 %

Total:	100%
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Grading Scale (subject to change):

[97%- 100%]	A+	[83%- 87%]	B	[70%-73%]	C-
[93%- 97%]	A	[80%- 83%]	B-	[67%-70%]	D+
[90%- 93%]	A-	[77%-80%]	C+	[63%-67%]	D
[87%- 90%]	B+	[73%-77%]	C	[60%-63%]	D-

Tentative Course Outline:

	Topics
1	Computer Forensics Basics
2	DF Profession and History
3	Linux Data Acquisition
4	Windows Data Acquisition
5	Disk Partitions and System Booting Process
6	Digital Forensics Tools
7	FAT File Systems
8	NTFS File Systems
9	Windows Artifacts
10	Linux and Mac File Systems
11	E-mail and Web Investigations
12	Data Recovery and Graphics Files
13	Cryptocurrency forensics
14	Reporting, expert testimony and ethics for the expert witness

Course Policies

Due Dates: All assignments are due at 11:59 pm on the date specified. Project and lab reports may be turned in up to one week later, at a penalty of 3% per day. Exceptions to these rules will be made only under exceptional circumstances, and then only with an appropriate written excuse.

Grade disputes and corrections: If you are dissatisfied with a grade you receive, you need to contact me **within one week** of the date that I first attempted to return the exam or assignment results to you.

Plagiarism: Although students are encouraged to help their classmates, students sharing code are guilty of plagiarism. If programs are considered too similar, the students will be asked to explain. In all cases of cheating, students who supply code or take it will both be penalized. The assignments in this class are for student use only. You are not allowed to post any assignments on the Internet or share them with other students. Students who turn in questionable assignments or exams are subject to defend them orally to the professor without warning. **The minimum penalty for all students involved in cheating is failure on the assignment.**

Exams: There will be one midterm and a final. Unless prior arrangements are made, a grade of zero will be recorded for missed exams.

Food Pantry

The pantry exists to support individuals on their journey as they work toward achieving their goals. We are committed to increasing access to food as a key to success, by assisting any student in need! If you need access or have questions, please contact the Office of Student Life by phone at 313-593-5390, by email at umdearbornpantry@umich.edu.

Vaccination & Face Covering Policy

In order to protect our classes, campus, and community from COVID-19 infections, please review Dearborn's [COVID Response website](#) for the latest policies regarding vaccination requirements and optional masking on campus.

University-Wide Policies or Statements Relevant to Courses:

Please see the 'Course Policies' Menu on Canvas for information on the following topics. To find the 'Course Policies' Menu on Canvas, log into any course in Canvas, and then on the blue ribbon on the far left scroll down to 'Course Policies' and click on it. This opens a white ribbon with individual links to UM-Dearborn websites on the following topics:

- University Attendance Policy
- Academic Integrity Policy
- Counseling
- Disability and Accessibility Services
- Safety Statement
- Harassment, Sexual Violence, Bias, and Discrimination