CSEC 450 - Digital Forensic Techniques
Fall 2020 Syllabus

Instructor

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Overview

This course focuses on the forensic acquisition, analysis and presentation of data from computer systems. This course covers:

- preservation and interpretation of evidence;
- forensic imaging;
- file systems and data recovery;
- Windows registry forensics;
- Internet history and social media analysis;
- mobile device forensics;
- timeline analysis;
- incident response and
- writing expert reports and testimony.

This course will use a combination of lecture, discussions, laboratory exercises and individual research in order to develop the student's understanding and application of digital forensics.

Students will:

- obtain and analyze digital information for possible use as evidence in civil, criminal or administrative cases
- use forensic software to create forensic images in a manner that would be admissible evidence
- deploy a variety of forensic tools to analyze forensic images
- perform processes used to recover deleted data from hardware
- uncover information from the Windows registry to find out what events occurred on that computer
- develop a timeline of computer events using forensic tools
- analyze computer evidence to answer specific questions surrounding a case or incident

- identify the steps in investigating computer incidents
- analyze a case, develop conclusions and draft an expert report
- identify courtroom procedures and considerations relevant to computer forensic evidence

Hands-on exercises guide discussions and reinforce the subject matter.

Office Hours

Please email for an appointment.

Prerequisites

This is an online course. You will need at minimum:

- Frequent access to a computer that connects to the Internet.
- A depaul.edu e-mail/Teams account that you check regularly
- Access to a software suite such as Microsoft Office (Word, Excel, Power Point). DePaul students are eligible to receive Office 365 ProPlus for installation on their home computer and personal mobile devices. See Office 365 Education Plus for installation instructions.
- Access to user Teams and OneDrive
- A computer with sufficient memory and space to run VMWare and numerous forensic tools, and the ability to download these tools.
- Administrator access to the computer to install software.
- The ability to view video files.

Required Materials

There will be no required book for this class. All materials will be provided via D2L and OneDrive.

VMware Workstation will be required to complete the labs and assignments. A total of 80GB of free space will be required for the materials in this class. Note: VMware Fusion, Parallels, and VirtualBox will also work but will not be supported.

You will need to download a significant number of tools for this class.

A workstation with enough RAM and hard disk space to run VMWare and Forensic Tools. You might find it convenient to have a large external hard drive for course files and work. Additionally, you can store files on your DePaul Microsoft OneDrive space.

Class Sessions

Class sessions will held through Zoom and stored in Panopto. These recordings will be available to all registered students and others through access via D2L. Although these sessions will be access restricted, all participants must understand that anything playing on a screen can

be captured by the viewer. Participation in this class will be understood to be tacit agreement to the recording and to the Student Participation Guidelines, found at the end of this document, which includes agreement not to capture course videos.

Class Schedule

The following is a tentative schedule for the course.

1	9/14	Introduction to Computer Forensics	Teams Introduction and Introduction Quiz (XC 5 points)
2	9/21	Forensic Imaging	Quiz 1 - Forensic Imaging Assignment (5 Points)
3	9/28	File Systems and Data Recovery	Quiz 2 (5 Points)
4	10/5	Windows Registry Forensics	Quiz 3 (5 Points)
5	10/12	Timeline Analysis	Quiz 4 (5 Points)
6	10/19	Password Recovery Steganography Writing Expert Reports	Quiz 5 (5 Points)
7	10/26	Internet Forensics	Quiz 6 (5 Points)
8	11/2	Mobile Forensics	Quiz 7 (5 Points)
9	11/9	Incident Response	
10	11/16	Class Wrap Up DB Cooper Lab	Due tonight: DB Cooper Assignment (40 Points)
11	11/23	Final Exam	(25 Points)

Grading

Final Grades: Letter grades will be assigned based on your total points in the class as follows:

A: 100-93	A-: 92-90	B+: 89-87	B: 86-83
B-: 82-80	C+: 79-77	C: 76-73	C-: 72-70

| D+: 69-67 | D: 66-63 | D-: 62-60 | F: 59-0 |

Late Assignments

All assignments will be submitted through D2L. Late assignments will not be accepted without documented medical emergencies or requests from an academic dean.

Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L and sent via email.

Academic Integrity

DePaul University is a learning community that fosters the pursuit of knowledge and the transmission of ideas within a context that emphasizes a sense of responsibility for oneself, for others and for society at large. Violations of academic integrity, in any of their forms, are, therefore, detrimental to the values of DePaul, to the students' own development as responsible members of society, and to the pursuit of knowledge and the transmission of ideas. Violations include but are not limited to the following categories: cheating; plagiarism; fabrication; falsification or sabotage of research data; destruction or misuse of the university's academic resources; alteration or falsification of academic records; and academic misconduct. Conduct that is punishable under the Academic Integrity Policy could result in additional disciplinary actions by other university officials and possible civil or criminal prosecution. Please refer to your Student Handbook or visit Academic Integrity at DePaul University (http://academicintegrity.depaul.edu) for further details.

Student Participation Guidelines

General Guidelines
- Sharing the meeting link, ID number, or password with anyone outside of the class is prohibited.
- Capturing and saving the video of the class meetings is prohibited.
- Sharing meeting screenshots or recordings with anyone outside of the class is prohibited.
- Mute your microphone when you're not speaking to minimize background noise.
- Use your given or preferred name as your display name.
- Don't use distracting or inappropriate profile photos or virtual backgrounds.

Technology Considerations
- If you need assistance during a video call, contact DePaul's Technology Support Center at 312.362.8765.
- If connectivity issues impact your audio/video quality, try turning off your camera.
- If you're experiencing issues with Zoom, you can use a site like speedtest.net to check your internet connection speed. A good minimum upload/download speed for video conferencing is at least 1.5Mbps.

Participation Expectations
- Treat video conferences as you would a regular class session on campus. Be prepared to be attentive and engaged during meetings.
- Be on time or notify your instructor if you will be late or unable to attend.
- Minimize distractions, such as televisions and cell phones, when possible.
- Don't engage in other activities during sessions (driving, cooking, cleaning, etc.)
- Try to put your device at eye level on a solid surface. Holding your device or placing it in your lap can add movement to your video, which can be distracting.
- If you think you might have trouble actively participating in meetings, let your instructor know in advance, if possible.

Code of Student Responsibility
The Dean of Students Office is committed to partnership in the educational mission of DePaul University. This mission is enhanced by a Code of Student Responsibility, which includes policies that outline expectations and standards of behavior for the student community. Students should report any incidents of behavioral misconduct (including harassment) in video conference meetings to their instructor. Any incident of harassment and/or behavioral misconduct that impedes the teaching & learning environment may be referred to the Dean of Students Office for referral to the student conduct process. This includes sharing meeting links, passwords, screenshots, recordings, or other meeting information in a way that could facilitate harassment or misconduct by others.