NJIT New Jersey Institute of Technology

THE COLLEGE OF SCIENCE AND LIBERAL ARTS

THE DEPARTMENT OF CHEMISTRY AND ENVIRONMENTAL SCIENCE

FRSC 498: Mobile Device Forensics

Spring 2023

Thursdays 6:00-8:50pm

Cullmore 111

Course Syllabus

NJIT Academic Integrity Code: Students are asked to practice extra care and attention in regard to academic honesty, with the understanding that all cases of plagiarism, cheating, multiple submission, and unauthorized collaboration are subject to penalty. Students must properly cite and attribute all sources used for papers and assignments. Students may not collaborate on exams or assignments, directly or through virtual consultation, unless the instructor gives specific permission to do so. Posting an exam, assignment, or answers to them on an online forum (before, during, or after the due date), in addition to consulting posted materials, constitutes a violation of the University's Honesty policy. Likewise, unauthorized use of live assistance websites, including seeking "expert" help for specific questions during an exam can be construed as a violation of the honesty policy. All students should be familiar with the NJIT Academic Integrity Code.

COURSE INFORMATION

Course Description: *Mobile Device Forensics is a branch of digital forensics relating to recovery of digital evidence or data from a mobile device under forensically sound conditions. Duties in this area include the forensic seizure and preservation of mobile devices, extraction of data, analysis of data, and the creation of reports for use in legal proceedings. This course will introduce students to the acquisition and analysis of data that can be retrieved from mobile devices, focusing on applying industry best practices to evidence collection and analysis with hands-on exercises using current techniques.*

Number of Credits: 3

Prerequisites: Permission of instructor

Course-Section and Instructor

Course-Section	Instructor
FRSC 498	Brandon Epstein
Thursdays 6:00-8:50pm	Office:
	Office Hours: By appointment
	email: brandon.e.epstein@njit.edu

Required Textbook:

Title	Practical Mobile Forensics (4th ed.)
Author	Tamma, Skulkin, Mahalik & Bommisetty
Edition	4
Publisher	Packt
ISBN #	978-1-83864-752-0

You must have a computer running the Windows operating system with a reliable internet connection, webcam, and a microphone in compliance with the University's minimum computer specifications. You must also have local administrator rights (ability to install software) on your computer.

University-wide Withdrawal Date: The last day to withdraw with a **W** is Monday, April 3, 2023. It will be strictly enforced.

Learning Outcomes: Upon completion of this course, students will:

- Explain and understand the underlying technology of mobile devices and wireless networks.
- Understand the best practices for proper evidence handling of mobile devices.
- Be able to logically and/or physically acquire data from various mobile devices.
- Be able to analyze and examine acquired data to locate potential evidence.
- Utilize and gain proficiency in the use of specialized forensic tools to analyze evidence.

POLICIES

All CES students must familiarize themselves with, and adhere to, all official university-wide student policies. CES takes these policies very seriously and enforces them strictly.

Grading Policy: The final grade in this course will be determined as follows:

Class Participation	10%
Assignments	40%
Midterm	25%
Final Exam	25%

Your final letter grade in this course will be based on the following:

A	90-100	**C**	70-76
B+	87-89	**D**	60-69
B	80-86	**F**	<60
C+	77-79		

Attendance Policy: Class attendance will be recorded and is **mandatory**. Each class is a learning experience that cannot be replicated through simply "getting the notes." After one unexcused absence, each subsequent absence will result in your class participation score being lowered by one percentage point. (All excused absences need to go through the Dean of Students). You are expected to read the relevant chapters and/or reading assignments prior to the lecture.

Exams: Exams will be taken on-line through Canvas. Exams will cover the readings, lecture, and in-class exercises. You will need to download Lockdown Browser and Respondus Monitor as the exams will be given through these platforms. You will also need a computer, webcam, and good internet connection when taking the exams. The Final Exam will be comprehensive and will test your knowledge of all the course material taught in the entire course.

Midterm	
Final Exam	Final Exam Week (Date TBD)

Makeup Exam Policy: There will normally be **NO MAKE-UP EXAMS** during the semester. In the event that a student has a legitimate reason for missing an exam, the student should contact the Dean of Students office and present written verifiable proof of the reason for missing the exam, e.g., a doctor's note, police report, court notice, etc. clearly stating the date AND time of the problem. The student must also notify the Instructor that the exam will be missed. An alternate assignment will be given in place of any missed exam.

ADDITIONAL RESOURCES

Accommodation of Disabilities: Office of Accessibility Resources and Services (***formerly known as Disability Support Services***) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you are in need of accommodations due to a disability please contact Chantonette Lyles, Associate Director at the Office of Accessibility Resources and Services at 973-596-5417 or via email at lyles@njit.edu. The office is located in Fenster Hall Room 260. A Letter of Accommodation Eligibility from the Office of Accessibility Resources Services office authorizing your accommodations will be required.

For further information regarding self-identification, the submission of medical documentation and additional support services provided please visit the Accessibility Resources and Services (OARS) website at:

- https://www.njit.edu/studentsuccess/accessibility

Important Dates (See: Spring 2023 Academic Calendar)

Date	Event
Jan 17	First Day of Classes
Jan 23	Last day to add or drop
Apr 3	Last day to withdraw
Mar 13-18	No classes scheduled - Univ closed
May 2	Last day of class
May 3-4	Reading Days
May 5-11	Final Exams

Course Outline

Lecture	Date	Topic	Reading
1	Jan 19	Introduction to Mobile Device Forensics	SWGDE Documents (link in Canvas)
2	Jan 26	Recognizing/Preserving Digital Evidence	Tamma – Chapter 1
3	Feb 2	Collecting/Acquiring Evidence	Tamma – Chapters 3 and 9

4	Feb 9	Introduction to Mobile Device Filesystems	Tamma – Chapters 2 and 7
5	Feb 16	Cell Sites / Geolocation	SWGDE Documents (link in Canvas)
6	Feb 23	Mobile Device Analysis	Tamma – Chapter 5 and 10
7	March 2	Mobile Device Analysis (cont'd)	
8	March 9	Midterm	
9	March 23	iOS Artifact Analysis	Tamma – Chapter 6
10	March 30	iOS Artifact Analysis (cont'd)	
11	Apr 6	Android Artifact Analysis	Tamma – Chapter 11
12	Apr 13	Android Artifact Analysis (cont'd)	
13	Apr 20	SIM Card Analysis	
14	Apr 27	Validation/Reporting	SWGDE/SANS Documents (link in Canvas)
15	TBD	Final	