CFRS 790 – Spring 2018 Syllabus
Advanced Computer Forensics
George Mason University

Administrative Information

Instructor: David Loveall

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Office hours: By appointment

Classes: F, 19:20 – 22:00, ENGR 5358

Course Description

Capstone course for the MS in computer forensics program. Students will be exposed to case studies and be required to conduct computer forensic investigations of digital media, intercepted packet switched data, and multisource log information to successfully complete each case study. *Prerequisites: CFRS 660, CFRS 661, and CFRS 663 or CFRS 664; minimum of 18 credits completed in the MS in Computer Forensics Program prior to registration.*

Textbooks

No textbook is associated with this course. Readings will be provided throughout the course to enhance individual lessons. Books references will be available free to GMU students.

Technology

Because this is a computer classroom, we will frequently be using the internet as a means to enhance our discussions. We will also be using the computers for our in-class lab assignments. Please be respectful of your peers and your instructor and do not engage in activities that are unrelated to the class. Such disruptions show a lack of professionalism.

Goals

As the capstone of the Digital Forensics and Cyber Analysis program, students will apply what they have learned in prior classes to preserve, process, analyze, report, and present digital evidence. By the end of the semester, students should be prepared to participate professionally in digital forensics and cyber analysis. Throughout the course, case studies will be presented and discussed. Students will be able to identify court decisions, policy

announcements, technology innovations, and news articles that will impact the discipline and be able to discuss and debate cogently on those topics.

Participation

Throughout the semester there will be hands on exercises and labs to demonstrate the various tools and techniques covered in class. Students are expected to participate in the exercises. Additionally, all students will be expected to participate in discussion of current event write-ups. Failure to participate in discussions may be used as a factor impacting their own write-up scores.

Grading

Grades assigned will be assigned as A (>90%), B (>80%), C (>70%), and F. Grades will be assessed on the following components:

10%	CV
50%	Current Events Write-Up (5 in total)
20%	Report of Examination
20%	Testimony

Letter grades will be assigned as follows:

≥ 90%	A
≥ 80%	B
≥ 70%	C
< 70%	F

Assignments

A curriculum vitae will be prepared by all students and submitted. This should be developed such that the student would be prepared to provide to a court prior to testifying as an expert witness in the field of digital forensics. Where required by a Non-Disclosure Agreement, or similar requirement, specific details may be redacted. If this is required, please discuss with the instructor ahead of time.

Throughout the course, there will be five (5) current event write-ups required. These should document a court decision, policy announcement, technology innovation, or news article that

will impact the discipline of digital forensics or cyber analysis. The student shall write a paper of approximately one (1) page and submit at least 24 hours prior to class. Each student may only submit one write-up per week. Papers will be used as discussion topics for the entire class.

One report of examination appropriate for submission to a court proceeding will be written by all students. This report shall be written on either an examination of digital evidence provided by the instructor or chosen by the student and approved in advance by the instructor.

Each student will present their findings in a moot court scenario, with the report of examination forming the basis of the testimony provided. Students who choose their own scenario shall have first selection of which date to provide testimony. For instructor scenarios, volunteers will be accepted to provide testimony first, and following that dates will be selected by lottery.

Important Dates

Please visit http://registrar.gmu.edu/calendars/ and view important dates for the current semester.

Call 703-993-1000 for recorded information on campus closings (e.g. due to weather).

Attendance Policy

Students are expected to attend each class, to complete any required preparatory work (including assigned reading) and to participate actively in lectures, discussions and exercises. As members of the academic community, all students are expected to contribute regardless of their proficiency with the subject matter.

Students are expected to make prior arrangements with Instructor if they know in advance that they will miss any class and to consult with the Instructor if they miss any class without prior notice.

Departmental policy requires students to take exams at the scheduled time and place, unless there are truly compelling circumstances supported by appropriate documentation. Except in such circumstances, failure to attend a scheduled exam may result in a grade of zero (0) for that exam.

Communications

Communication on issues relating to the individual student should be conducted using email or telephone. Email is the preferred method – for urgent messages, you should also attempt

to contact the Instructor via telephone. Email messages from the Instructor to all class members will be sent to students' GMU email addresses – if you use another email account as your primary address, you should forward your GMU email to that account. Lecture slides are complements to the lecture process, not substitutes for it - access to lecture slides will be provided as a courtesy to students provided acceptable attendance is maintained.

Academic Integrity

GMU is an Honor Code university; please see the Office for Academic Integrity for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification. Students are required to be familiar and comply with the requirements of the GMU Honor Code @ http://oai.gmu.edu/the-mason-honor-code/. All assessable work is to be completed by the individual student. Students must NOT collaborate on the project reports or presentation without explicit prior permission from the Instructor.

Disability Accommodations

If you have a learning or physical difference that may affect your academic work, you will need to furnish appropriate documentation to the Office of Disability Services. If you qualify for accommodation, the ODS staff will give you a form detailing appropriate accommodations for your instructor. In addition to providing your professors with the appropriate form, please take the initiative to discuss accommodation with them at the beginning of the semester and as needed during the term. Because of the range of learning differences, faculty members need to learn from you the most effective ways to assist you. If you have contacted the Office of Disability Services and are waiting to hear from a counselor, please tell me.

Diversity

George Mason University promotes a living and learning environment for outstanding growth and productivity among its students, faculty and staff. Through its curriculum, programs,

policies, procedures, services and resources, Mason strives to maintain a quality environment for work, study and personal growth.

An emphasis upon diversity and inclusion throughout the campus community is essential to achieve these goals. Diversity is broadly defined to include such characteristics as, but not limited to, race, ethnicity, gender, religion, age, disability, and sexual orientation. Diversity also entails different viewpoints, philosophies, and perspectives. Attention to these aspects of diversity will help promote a culture of inclusion and belonging, and an environment where diverse opinions, backgrounds and practices have the opportunity to be voiced, heard and respected.

The reflection of Mason's commitment to diversity and inclusion goes beyond policies and procedures to focus on behavior at the individual, group and organizational level. The implementation of this commitment to diversity and inclusion is found in all settings, including individual work units and groups, student organizations and groups, and classroom settings; it is also found with the delivery of services and activities, including, but not limited to, curriculum, teaching, events, advising, research, service, and community outreach.

Acknowledging that the attainment of diversity and inclusion are dynamic and continuous processes, and that the larger societal setting has an evolving socio-cultural understanding of diversity and inclusion, Mason seeks to continuously improve its environment. To this end, the University promotes continuous monitoring and self-assessment regarding diversity. The aim is to incorporate diversity and inclusion within the philosophies and actions of the individual, group and organization, and to make improvements as needed.

Privacy

Students must use their MasonLive email account to receive important University information, including messages related to this class. See http://masonlive.gmu.edu for more information.

Schedule and Topics

Date		Discussion Topics	Assignment
Week 1	1/26	Syllabus. Class overview. Curriculum vitae.	
Week 2	2/2	Preservation: Data at rest, data in motion.	**(Current Event)**
Week 3	2/9	Preservation: Volatile data, encryption.	**CV, (Current Event)**

Date		Discussion Topics	Assignment
Week 4	2/16	Processing: Automated tool suites.	**(Current Event)**
Week 5	2/23	Processing: Individual tools, custom solutions.	**(Current Event)**
Week 6	3/2	Analysis: Multisource information. Interpretation.	**(Current Event)**
Week 7	3/9	**INSTRUCTOR OUT, NO CLASS.**	
	3/16	**SPRING BREAK, NO CLASS.**	
Week 8	3/23	Analysis: Developing expert opinions. Attribution, Causality, Timeline.	**(Current Event)**
Week 9	3/30	Reporting: Notes, technical documentation.	**(Current Event)**
Week 10	4/6	Reporting: Preparing reports for court. Uniform Language for Testimony and Reports (ULTRs).	**(Current Event)**
Week 11	4/13	Presenting: Technical and administrative presentations.	**(Current Event)**
Week 12	4/20	Presenting: Testifying as an expert witness.	**Report of Examination, (Current Event)**
Week 13	4/27	Testimony. (5 students)	**(Current Event)**
Week 14	5/4	Testimony. (5 students)	**(Current Event)**
Week 15	5/11	Testimony. (5 students)	**(Current Event)**