CSCI 3800: Introduction to Computer Forensics
Department of Computer Science and Engineering
College of Engineering and Applied Sciences
University of Colorado Denver
Course Syllabus

Instructor:	Dr. Jason Lewis	Term:	Spring, 2014
Office:	Lawrence Street, Room 802	Class Meeting Days:	Tuesday/Thursday
Phone:	303-315-0065	Class Meeting Hours:	2:00 pm – 3:15 pm
E-Mail:	Jason.R.Lewis@ucdenver.edu	Class Location:	Lawrence St. Center 844
Office Hours:	T/R: 9:00 am – 10:30 am	Personal Website:	cse.ucdenver.edu/~jlewis
	12:30 pm – 1:30 pm		
	3:30 pm – 4:30 pm		
	W: 12:30 pm – 1:30 pm		

COURSE OVERVIEW:

I. Welcome to Introduction to Computer Forensics. This is an introduction to the field of computer forensics. I am hoping that through this course you will learn more about what the field is and what it takes to be a computer forensic examiner.

II. University Course Catalog Description: This course will cover topics ranging from the history of computer forensics to the science of how an individual can hide data on a computer and how the investigator can find that hidden data. We will also explore new trends in computer crimes. This course will also incorporate hands-on learning through the use of AccessData's Forensic Toolkit (FTK), which is an industry leading computer forensic software package.

III. Course Goals and Learning Objectives: It is the goal of this course that at the completion of the semester you would have gained the following knowledge:

- Skills in problem solving.
- Skills in conducting a computer forensic exam, both individually and as a member of a team.
- Skills in the science of data concealment on a computer system.
- Skills in technical report writing.
- Skills in the legal and ethical requirements in computer forensic exams.

The learning objectives of this course are:

- Learn the basics of computer forensics.
- Learn how data is hidden on computer systems.
- Learn how to locate data of forensic value on a computer system.
- Learn how to use AccessData's Forensic Toolkit (FTK) to conduct a computer forensic exam.
- Learn how to write technical reports detailing the findings of a computer forensic exam.
- Learn the legal, ethical, and technological challenges facing the field of computer forensics.

IV. Course Prerequisites: It is expected that at the beginning of this course that you have the following knowledge:

- Ability to utilize the three major operating systems (Windows, OS X, and Linux/Unix).
- Ability to utilize Internet search engines.
- Ability to write technical papers utilizing Microsoft Word or similar application.
- Ability to identify the major hardware components of a computer.

The formal prerequisite for this course is CSCI 1410 or permission of the instructor (based on a demonstration of the above knowledge).

Note: ***Each student must sign the Prerequisites Agreement form (which I will pass out during the first week of class) to receive any credit for any assignment or exam. If this form is not signed by the first week, the student will be administratively dropped from the course.***

V. ABET Assessment Criteria: This course meets ABET Assessment Criteria

(d) An ability to function effectively on teams to accomplish a common goal.
(e) An understanding of professional, ethical, legal, security and social issues and responsibilities.
(f) An ability to communicate effectively with a range of audiences.
(g) An ability to analyze the local and global impact of computing on individuals, organizations, and society.

VI. Course Credits: This course has three (3) credits associated with it.

VII. Required Texts and Materials: This course requires the following textbooks:

Title: Digital Evidence and Computer Crime (3rd Edition)
Author: Eoghan Casey
Publisher: Elsevier
ISBN-10: 978-0-12-374268-1

Title: AccessData Forensics: Training Manual (Academic Edition)
Publisher: AccessData Group, LLC
ISBN-10: None (self published)

VIII. Course Schedule: The following is the tentative schedule for this course and it is subject to change. That being said, I will try my best to keep to it. If there are any changes to this schedule they will be reflected on this course's Canvas page. [For the reading assignments, CH X is the Chapter from the Digital Evidence Book, MD X is the module number from the Training Manual]

Date	Topic	Reading	Assignment
1/21	Syllabus and course requirements. Intro to computer forensics and computer crime (CH 1)	CH 1	
1/23	History of computer forensics & computer crime (CH 1)	CH 2	
1/28	How computers are used in crimes (CH 2)	CH 3	
1/30	Digital evidence in the courtroom (CH 3)	CH 4	
2/4	Laws governing computer crimes (CH 4)	CH 6	
2/6	Conducting a digital investigation (CH 6)	CH 7	
2/11	Handing a digital crime scene (CH 7)	CH 8	
2/13	Investigative reconstruction w/digital evidence (CH 8)	CH 9, 10, & 11	
2/18	**TEST 1 (Chapters 1 – 8)**		
2/20	MO, motive, technology (CH 9), violent crime and digital evidence (CH 10), and digital evidence as alibi (CH 11)	CH 12, 13, & 14	
2/25	Sex offenders (CH 12), computer intrusions (CH 13), and cyber-stalking (CH 14)	CH 15	
2/27	Computer basics for digital investigators (CH 15)		
3/4	Computer basics for digital investigators (CH 15)	CH 16	
3/6	Applying forensics science to computers (CH 16)	CH 17	
3/11	Digital evidence on Windows Systems (CH 17)		
3/13	Digital evidence on Windows Systems (CH 17)		
3/18	Test review day		
3/20	**TEST 2 (Chapters 9 – 17)**		
3/25	**Spring Break – NO CLASS!!!**		
3/27	**Spring Break – NO CLASS!!!**	MD 2	

4/1	FTK Imager (MD 2)	MD 3 & 4	
4/3	Registries (MD 3 & 4)	MD 5 & 6	
4/8	Working with FTK (MD 5 & 6)	MD 7	
4/10	Processing a case (MD 7)	MD 8 & 9	
4/15	Project work day		
4/17	KFF & Regular Expressions (MD 8 & 9)	MD 10 & 11	
4/22	Filtering and Recycle Bin (MD 10 & 11)	MD 12	
4/24	Windows Artifacts	MD 13 & 14	
4/29	PRTK and EFS (MD 13 & 14)	MD 15	
5/1	Generating case reports (MD 15)		
5/6	Project work day		
5/8	Project work day		
5/12-17: Finals Week (Test 3)			

EVALUATION:

I. Course Grade: Course grades are a weighted average of the grades earned on all graded material. The weights for the different categories are:

- Homework: 10%
- Projects (Group and Individual): 40%
- Quizzes: 10%
- Exams: 40%

Letter Grades are as follows:

- 94% – 100% ..... A
- 90% – 93.9%..... A-
- 87% – 89.9%..... B+
- 84% – 86.9% ..... B
- 80% – 83.9%..... B-
- 77% – 79.9%..... C+
- 74% – 76.9% C
- 70% – 73.9%..... C-
- 67% – 69.9%..... D+
- 64% – 66.9% ..... D
- 60% – 63.9%..... D-
- 00% – 59.9% ..... F

II. Homework: The homework for this class will mainly be group discussion posts. There may be short question sets assigned as well. All homework will be posted on Canvas. I do not allow late work to be submitted unless there is **prior approval** by me based on **special circumstances.**

III. Projects: There will be a combination of group and individual projects. For the group projects the individual grades of the group members will reflect the amount of individual effort that the particular group member put into solving the group project. EVERYONE MUST PULL HIS OR HER OWN WEIGHT!

Also, there will be two writing assignments for this course. We have a guest speaker from the United States Secret Service [subject to change] coming to class and we will also be conducting a tour of the Federal Bureau of Investigation's Rocky Mountain Regional Computer Forensics Laboratory. For both of these you will be required to complete a short (one to two pages) writing assignment. These writing assignments will count as individual projects. I do not allow late work to be submitted unless there is **prior approval** by me based on **special circumstances.**

IV. Exams: There will be three exams (including the final). Makeup exams are not normally given; in **special circumstances**, arrangements should be made **prior** to the exam date if at all possible.

V. **Quizzes:** There will be numerous in class and take-home quizzes, some of which will not be announced. These quizzes will be brief, taking approximately ten minutes to complete. The quizzes will be a combination of multiple-choice, short answer/fill in the blank, and short essay questions.

VI. **Grade Dissemination:** I will be utilizing the Canvas system to record your grades. You can check on Canvas for all of your current grades.

COURSE PROCEDURES:

I. **Attendance:** Attendance is required for this course and I will be keeping track of the attendance with the Canvas Attendance utility. Attendance will count as part of the homework grade. As with all science courses, you will have an easier time learning the material if you attend the lectures and participate in class.

II. **Late Work Policy:** All projects and homework are due at the beginning of class on the due date (unless otherwise noted on Canvas). Submissions will be made via Canvas. I do not allow late work to be submitted unless there is **prior approval** by me based on **special circumstances.** Makeup exams and quizzes are not normally given; in **special circumstances**, arrangements should be made **prior** to the exam date if at all possible.

III. **Grades of "Incomplete":** The current university policy concerning incomplete grades will be followed in this course. Incomplete grades are given only in situations where unexpected emergencies prevent a student from completing the course and the remaining work can be completed the next semester. I am the final authority on whether you qualify for an incomplete. Incomplete work must be finished by the end of the subsequent semester or the "I" will automatically be recorded as an "F" on your transcript.

IV. **Email Policy:** I will be using both the University email system and the Canvas email system. I will respond to your email to the address it was sent from and from the system it was sent from (if you email me from within Canvas, I will respond to Canvas, if you email me from traditional email, I will respond with traditional email). For class announcements I will send a Canvas group email. I will be checking my email frequently and you can expect a response within 48 hours (holidays excluded).

V. **Canvas:** I will be utilizing Canvas in this course to assign all of the course work and for you to submit your solutions. I will also be utilizing it to communicate with you and to provide you with your current grade. It is recommended that you check it frequently.

VI. **Classroom Devices:** Out of respect for everyone in the classroom, if you would like to record the lectures you must first receive my approval. I generally will approve the request, but I first would like to speak with you concerning the scope of the recording.

STUDENT EXPECTATIONS:

I. **Civility:** My commitment is to create a climate for learning characterized by respect for each other and the contributions each person makes to class. I ask that you make a similar commitment.

II. **Professionalism:** Since mobile devices can be a distraction during class, I ask that all devices be put into "silent" mode and not utilized during class; this includes checking Facebook, sending a Tweet, or checking email. If I feel that your mobile device is becoming a distraction for either other students, you, or myself I will ask you to leave the classroom.

III. **Religious Observations:** I understand that an individual's religion plays a large part in their lives and I do not want this course to interfere with that aspect of their lives. If you find that your religion's holiday(s) falls on a class day and you can not attend due to this, please notify me within two weeks of that date by email (or Canvas mail) and we will work together to come to a mutually acceptable solution.

COLLABORATION AND CHEATING:

I encourage you to review material and discuss ideas together for projects and other assignments, and to work on problems you encounter. It is a characteristic of computing that discussions often help to clarify problems and resolve difficulties — feel free to take advantage of this to improve your understanding of the material, and to complete projects, but **make sure you then create your own**

work. It's important that you go through the program design, coding, and debugging processes yourself, or you will not be developing your own programming skills and understanding. "Working together" does not mean that one student does the majority of the work and other students put their names on it! If you have any questions about what this means, please see me. **Every student must create their own work on their own!**

Any instances of cheating will result in either a zero for the assignment, a grade of zero in the course, or sanctions determined by the college (including suspension and expulsion).

UNIVERSITY POLICIES:

I. **Access:** The University of Colorado Denver is committed to providing reasonable accommodation and access to programs and services to persons with disabilities. Students with disabilities who want academic accommodations must register with Disability Resources and Services (DRS) in North Classroom 2514, Phone: 303-556-3450, TTY: 303-556- 4766, Fax: 303-556-4771. I will be happy to provide approved accommodations, once you provide me with a copy of DRS's letter. [DRS requires students to provide current and adequate documentation of their disabilities. Once a student has registered with DRS, DRS will review the documentation and assess the student's request for academic accommodations in light of the documentation. DRS will then provide the student with a letter indicating which academic accommodations have been approved.]

II. **Academic Honesty and Student Code of Conduct:** Students are expected to know, understand, and comply with the ethical standards of the university, including rules against plagiarism, cheating, fabrication and falsification, multiple submissions, misuse of academic materials, and complicity in academic dishonesty. For more information on Academic Honesty and the Student Code of Conduct please see: http://www.ucdenver.edu/life/services/standards/students/pages/default.aspx

III. **Other University Policies:**

- Academic Freedom: http://www.ucdenver.edu/policy/pages/academic-Freedom.aspx
- Family Educational Rights and Privacy Act (FERPA): http://www.ucdenver.edu/student-services/resources/registrar/students/policies/Pages/StudentPrivacy.aspx
- Attendance: http://www.ucdenver.edu/faculty_staff/employees/policies/Policies%20Library/OAA/StudentAttendance.pdf
- Discrimination and Harassment Policy and Procedures: http://www.ucdenver.edu/about/WhoWeAre/Chancellor/ViceChancellors/Provost/StudentAffairs/UniversityLife/sexualmisconduct/DenverPolices/Pages/DenverWelcome.a spx
- Grade Appeal Policy: http://www.ucdenver.edu/policy/Documents/Process-for-Grade-Issues.pdf

THE LAST WORD

I'm here to help you do well in this course. If you need any help on the material or assignments, please come to office hours or email me before you get behind. If you have any other problems that interfere with your academic work, see me as soon as possible so we can look for a solution. I'll review your grade with you any time.