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Senior Seminar in Digital Investigation FOR 450-81

Course Overview & Syllabus

Michael Schirling
Spring 2007 Semester

[\[\[Link to Course Calendar \]\]](#)

Hello! and welcome to *Senior Seminar in Digital Investigation*. I hope that you find the course fun and interesting.

This course is going to be a hybrid in many ways — it will be partially personal journey as you move through your project and partially public discussion and sharing of information. My goal, frankly, is that you each find a project that is interesting and intellectually challenging and, hopefully, build a body of original work. We will have some periodic tasks, homework, assignments, etc. — but it won't be the same week-to-week schedule of most courses. I am trying to plan this like a graduate seminar.

There are several objectives of this course. First, I'd like you push your own boundaries and be intellectually challenged. Second, I'd like you to learn something — something that you can use yourself and can also share with others. Third, I'd like you to write a paper of high quality for your personal professional portfolio. Fourth, I'd like you to become familiar with the research in the field of cyberforensics and digital investigations. Finally, I would like you to do something enjoyable! And... a possible side effect — a journal publication for really good papers.

Course prerequisite: 90 credits

This is a senior level course for Computer & Digital Forensics majors. It is expected that students in this course are well-versed in computer and network forensics, and digital investigations.

Student outcomes:

Upon completion of this course, students will be able to:

- Articulate research, ideas, laws, policies, and opinions in written reports, class discussions, and presentations.
- Demonstrate the ability to do technical and legal research using the Web, the print media, other people, and other

resources.

- Demonstrate an awareness of the constantly changing nature of computing and networking technologies and services, the tools to aid in the analysis of these technologies and services, the legal environment in which these analyses are performed, and the changes in society affecting the professional and ethical codes of conduct.

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Instructor contact information:

OFFICE

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Texts and supplementary resources:

The primary information resources for the course will be the Internet, the library, and other online and in-person resources. A list of Cyberforensics-Related URLs at <http://www.garykessler.net/library/foresnicsurl.html> has some potentially useful pointers to relevant research sites and journals on the Internet.

Attendance, Homework, and Grading:

This course will require that everyone be engaged in what is going on. During the early and late parts of the semester, there will be a lot of class discussion and sharing, while during the early and middle parts of the semester, you'll have to be in a lot of conversation with me! We're not going to have a lot of weekly assignments, per se, but I will rely on you to stay up with class discussion. Assignments will contain a due date and should be turned in on time; early is better, and late assignments will only be accepted with instructor's pre-approval and may be assessed a penalty. (**NOTE:** *Pre-approval* means that you have discussed with me turning in something late and received explicit permission to do so; it does *not* mean telling me that it will be submitted late.)

It will be necessary for you to use proper formatting for all writing assignments, including citing references and creating a bibliography. There are many formats to use in preparing a bibliography — MLA, APA, Chicago, etc. I don't particularly care what format you use; but you should adopt one! If you are unclear about a paper format, choose one of the above and obtain the appropriate manual online or from the college bookstore.

It's also important that you be creative. As I said above, push your own boundaries. This is a safe place to try something new and see if it works; the worst that'll happen is that it won't but that's educational, as well!! I want you to **think** — and the more you do it, the better and faster you'll get at it!!!

Grades will be weighted roughly as follows:

- Homework: 25%
- Project: 50%
- Attendance and participation: 25%

I will use the College's standard numerical scale for calculating final grades:

A A- B+ B B- C+ C C- D+ D D- F
93+ 90 87 83 80 77 73 70 67 63 60 59-

Applicability of Core Competencies

The Champlain College faculty and administration have committed that our curricula will address these seven critical core competencies:

- Technology
- Critical and Creative Thinking
- Global Studies
- Oral Communication
- Written Communication
- Quantitative Literacy
- Ethical Reasoning

This course addresses these competencies as outlined below.

Technology

This is a capstone course describing technologies learned and employed in previous years.

Critical and Creative Thinking

A big part of this course is determining what topics are currently noteworthy and will have long-lasting significance. Paring down the wealth of information available into the most important and relevant is a first step in critical analysis of the field. The projects will require that students particularly demonstrate real understanding of the subject areas that they choose, with an expectation that they dig down further than what they find at face value.

Critical thinking is reinforced by homework assignments and classroom discussions. Rather than focus on bare "facts," the homework and class meetings focus more on how the subject matter integrates with other things that student know and will learn in the future. We also examine how students attitudes change as their level of knowledge — and responsibility — changes.

Global Studies

International awareness is not a major focus of this course and, in fact, many aspects of digital investigations are geography-independent. The technology is relatively universal and, therefore, the technical solutions are universal. Laws, however, vary country-by-country so that actions that are illegal in some countries are legal in others (such as unleashing a virus). Although not emphasized, the course does describe some of the geographical, political, and cultural differences as they apply to legal aspects, privacy expectations, and acceptable use policies. Classroom discussions and research projects will probably take students around the world.

Oral and Written Communication

To be successful in the business world, professionals must be able to communicate in both written and oral form. This course will focus on many aspects of digital forensics, and that knowledge is nearly useless if it cannot be communicated.

The digital investigator must be able to communicate to many audiences on many levels:

- Communication with peers and managers at the technical level. This requires an understanding of computer, networking, and legal concepts, as well as the proper vernacular.
- Communication with judges, juries, attorneys, and other lay persons, generally at a non-technical level. A successful technologist must be able to communicate the technical aspects of an analysis in understandable terms; this is often the most challenging portion of a professional's development.
- Communication with individuals at all levels within an organization with all levels of understanding. This includes upper management and supervisors to peers and subordinates, ranging from the technophobe to the technophile.

This course will provide students with ample opportunity to practice their communication skills through the weekly homework assignments and classroom discussions, but even more so through the research project that is part research paper, part oral presentation, and part presentation graphics. All assignments include grammar and composition as a component of grading.

Quantitative Literacy

Professional digital investigators have to be able to analyze patterns of activity to differentiate between normal and abnormal, legal and illegal. Most of the information on computers and networks involves numbers and symbols, and the cyberforensics professional needs to be able to find the connections between disparate data points to be able to recreate a sequence of events. This course will provide students with ample opportunity to practice quantitative literacy through the research project.

Ethical Reasoning

Cyberforensics analysis often requires ethical considerations — When is a subject's privacy being invaded? Is it ever right to withhold incriminating or exculpatory evidence? When is it right to break the law to obtain information? How does one respond to a potentially unethical request by a supervisor? Digital investigators much adhere to a code of ethics and such a framework must be employed in this course.

Students with Disabilities

If you believe that you have a disability requiring accommodations in this class, please contact the Coordinator of Support Services for Students with Disabilities as soon as possible. After you receive your accommodation form, please see me so I can work with you to implement them in a timely fashion.

Contact: Allyson Krings, Coordinator of Support Services for Students with Disabilities (Hauke 007i, 802-651-5961, krings@champlain.edu)

Academic Honesty Policy

The Champlain College Student Handbook (*The Rudder*) describes the College's Academic Honesty policy. It basically says that if I think you've cheated on an assignment — i.e., to either actually or attempt to knowingly give, receive, or use work that is not your own — I can give you a 0 on that assignment. I'll give you a slightly different bottom line — if you're going to cheat, I don't want you in the course. You may trick me, but you'll get killed once out in the workplace.

This in no way suggests that I am opposed to your collaboration with fellow students and others; in fact, I encourage as much collaboration as possible. The point of this policy is that work that you submit as your own *has* to be your own! If you work with another person or other resource that helps you learn an answer to something, that's fine — what I see, however, should be in your own words and clearly demonstrate **your** understanding. If you're unsure, tell me that you worked with others.

Finally, I will tolerate no excuse for cheating. That's another reason that you should keep your communication channels with me open. If there's a problem in your life that is rippling over into school, don't let it cause you to do something that will have unintended consequences.

Don't cheat; there's no margin in it!! If you have a problem, talk to me instead.

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