

## COS 398

### Spring 2017, Syllabus Version 1

Monday 6 – 8:30 PM

Luther Bonny, Room 209

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**Teaching Assistant:** Taylor Joseph Reis, [joseph.reis1@maine.edu](mailto:joseph.reis1@maine.edu)

**Office Hours:** By appointment. Science Building, Room 232.

**Course Description:** A study of ethical perspectives and social responsibilities for computer professionals. Assigned readings provide the basis for class discussions of issues such as social control and privacy, computer law and related constitutional laws, intellectual property legal issues, computer viruses and worms, ACM code of professional conduct, hacking, limits of correctness in computer software.

**Prerequisite:** Junior or Senior standing or by permission.

**Expected outcome:** Students should gain an understanding of computer and intellectual property law and an increased awareness of the implications of their technical expertise with respect to society at large. Additionally, an understanding of general vulnerabilities both in code, web applications and computer security is an expected outcome from this course.

### Texts:

A Gift of Fire, Sara Baase,

[http://www.amazon.com/Gift-Fire-Computing-Technology-2-download-ebook/dp/B0093K4QXK/ref=sr\\_1\\_1?s=digital-text&ie=UTF8&qid=1420996964&sr=1-1&keywords=Gift+of+fire](http://www.amazon.com/Gift-Fire-Computing-Technology-2-download-ebook/dp/B0093K4QXK/ref=sr_1_1?s=digital-text&ie=UTF8&qid=1420996964&sr=1-1&keywords=Gift+of+fire)

**Print ISBN-10:** 0132492679, **Print ISBN-13:** 978-0132492676, **Edition:** 4

Grey Hack Hacking: The Ethical Hacker's Handbook

<http://www.amazon.com/Gray-Hacking-Ethical-Hackers-Handbook/dp/0071742557>

ISBN-10: **0071742557** | ISBN-13: **978-0071742559** | Publication Date: **January 6, 2011** |

Edition: **3**

**Grading:****Midterm Exam: 30 pts.****Final Paper or Project: 100 pts.****In-Class Participation: 100 pts.**

Every student will once present their weekly homework to the class for discussion.

**Weekly Assignments: 200 pts.** Each student will bring in typewritten answers to two assigned homework questions and one student-generated question or statement about the reading due that day from The Gift of Fire textbook. There will also be a question(s) assigned from the Grey Hat Hacking book. Weekly assignments will be evaluated on the depth of the answers and the question/statement. One paragraph per answer and for the one student-generated question/statement is generally necessary to cover topics in depth. The purpose of these is to generate class discussion.

- **No late assignments will be accepted unless you have a documented reason for not being able to complete the assignment on time**
- **Even if you receive a pre-arranged excused absence from me, I will not accept questions/statements more than one week past the date they were due**
- **Via email, I will only accept the following file formats for weekly assignments: doc, docx or txt**
  - **For example, I do not want access to your Google Drive or a url**
- **If you email your assignment, you may only send it to my university email account: [tiffany.rad@maine.edu](mailto:tiffany.rad@maine.edu) and to Taylor Reis [joseph.reis1@maine.edu](mailto:joseph.reis1@maine.edu)**
- **(the TA). I will not accept assignments or correspondence to any of my personal or other work email accounts**

**Project and Midterm Paper Guidelines****Final Paper Proposal Guidelines:**

The proposal, due midterm, is a short 1 page, double spaced paper in which you discuss the proposal for your final project. This paper must be prepared on a word processor and well written using APA formatting. You must do more than just describe the project, but also state why you chose it, what you already know about it and your plan for research.

**Final Paper or Project Guidelines:**

The purpose of this project is to have each person in the class do some outside work in the area of ethics and social responsibility. This work could entail reading in depth about some area of interest in ethics and social responsibility. It could also be an active project in which you accomplish something applicable to the area of ethics and social responsibility.

Your **Final Paper/Project Description** is due on **March 20**. This should be a **single page, double spaced** explanation of your final project or paper.

The final paper may be a typed report. It is due on **May 8th**. The report should be sufficiently long for you to explain the material that you read or the project that you accomplished. 8-10 pages are the upper and lower limits using **APA formatting for spacing and font requirements** (i.e., no 2.5" spacing or 14 pt. fonts).

If you choose to do a final project in lieu of a written paper, the following are some examples done by former students:

1. Build a web site based on an ethical or legal issue covered in class.
2. Write a program that tracks violations of websites' privacy policies

### **Class Policies**

**Missed Class Meetings:** This course is dependent on student attendance and participation. Attendance is a part of the student's grade. Students who miss class will be expected to turn in the assignment from the missed week either before the class they miss (if they know they will be out and it's an excused absence) or at the next class meeting with some points deducted for it being late.

**Missed Handouts, Returned Exams and Returned Homework:** If a student misses a class and, therefore, misses material that was distributed to the class, the student should contact the instructor to obtain the information.

**Handing in Assignments:** The student shall hand in any homework at the beginning of class on the day the homework is due. It is up to the student to hand in homework, not up to the instructor to ask for it.

**Late Midterm and Final Papers Policy:** These will only be accepted after May 2<sup>th</sup> under extreme circumstances such as illness. No papers will be accepted later than the University's date for the instructor's grade submissions without the approval of the Computer Science Department Chair.

**Plagiarism and Cheating:** For each assignment, there is likely to be some discussion in and out of class of the questions. In fact, this is encouraged. However, each assignment a student submits is expected to be a product of his/her own effort, not copied from a fellow student, text, or other such source. Students involved in the submission of plagiarized work may receive an F for the course, and the matter may be turned over to the Student Conduct Committee for disciplinary action.

Students who give their work to others may also fail the class or have the case handled by the Student Conduct Committee for disciplinary action. Encouraging plagiarism will not be condoned. It is also each student's responsibility not to leave work where others might copy it.

If you obtain a question from another text, you must cite that text using APA citation formatting. For example, cite the author(s), title, date printed, and publisher.

**Incomplete Policy:** An incomplete will only be given to students in extreme situations.

**Withdrawal:** The possibility of failing the class is not sufficient reason for withdrawal after the standard withdrawal date.

**L grade:** A grade of L will be assigned to students who do not take and turn in the final. Students can ask for an F if they would prefer, but the policy is to assign an L if no other arrangements are made.

**Accommodating Students with Disabilities:** If you need course adaptations or accommodations because of a disability please make an appointment with the Office of Academic Support for Students with Disabilities, 242 Luther Bonney, 780-4706.

**There are 12 class meetings in which work is due. Class participation will carry 8 points/class. The questions will be worth 16 points. Thus, there are 24 points/class. But 24 \* 12 is only 288, so everyone attending the first class (Jan. 13) gets 12 points to bring it to 300 total points.**

## Schedule and Reading Assignments:

**January 30:** Gift of Fire: Ch. 1—Unwrapping the Gift

Overview of textbook: The ubiquity of computers, examining the “gift,” appreciating the benefits.

Grey Hat Hacking: Pages 3-21 Ethics of Ethical Hacking.

**February 6:** Gift of Fire: Ch. 2—Privacy. 4<sup>th</sup> Amendment, Expectation of Privacy, Personally Identifying Information (PII), Data Mining, “right to be forgotten,” Privacy Act of 1974, electronic surveillance.

Grey Hat Hacking: Pages 47-73 Proper and Ethical Disclosure

**February 13:**

Gift of Fire: Ch. 4—Intellectual Property and Entrepreneurship

Copyrights, trademarks, patents (software patents). Fair use doctrine. Reverse engineering. DMCA, DeCSS., “what is ‘free’ software.”

Grey Hat Hacking: Pages 77-91 Social Engineering

**February 20: Winter Break**

**Feb 27:** Gift of Fire: Ch. 3—Freedom of Speech

Communication technologies and 1<sup>st</sup> Amendment protection--what's not protected (what's obscenity?). Government restriction of free speech, Leaking Data (Snowden), Anonymity.

Grey Hat Hacking: Page 109-123 Insider Tools.

**March 6:** Gift of Fire: Ch. 5—Computer Crime.

Definitions of “hacker/cracker,” what is ethical hacking, penetration testing.

Grey Hat Hacking: Page 23-46 Ethical Hacking and the Legal System.

**March 13: Midterm Exam**

**March 20: Reading assignment is TBD**

**March 27: Spring Break**

**April 3:** Gift of Fire: Ch. 8—Errors, Failures and Risks

Problems for individuals, system failures, and safety critical applications. Software and design mistakes.

Gift of Fire: Ch. 7—Evaluating and Controlling Technology.

Grey Hat Hacking: 125-140 Backtrack Linux/Kali.

**April 10:** Gift of Fire: Ch. 9—Professional Ethics and Responsibilities. ACM and IEEE standards. Also, additional article will be assigned about the exploit code market: legal or illegal/ethical or unethical?

Grey Hat Hacking: Pages 141-156 Metasploit.

**April 17:** Cybercrimes and Federal Law. Emailing links for reading.

**Guest Call-in: Meet the Feds. Special Agent from the F.B.I., Cybercrimes Division, Washington, D.C.**

Grey Hat Hacking: Pages 413-470 Passive Analysis (Ida Pro)

**April 24:** Digital Currency – Bitcoin, Feathercoin, Dogecoin (and other coins that emerge by this date). How they work and the laws associated with changing the coin to US-recognized currency and anti-money-laundering laws.

Grey Hat Hacking: Pages 395-409 SCADA Attacks. Links to SCADA/PLC hacking will be given prior to class.

And Pages 173-200 Programming Survival Skills

Possibly car hacking in the parking lot if the weather is good

**May 1:** Make-up class for a snow day.

**May 8:** Final Paper or Project Due in my CS dept. mailbox or to my university e-mail account by 5 PM.