Spring 2021
HCIP 6201 - Health Information Privacy and Security: Law, Ethics, and Technology
The University of North Carolina at Charlotte

Course Description:
This course provides foundational exposure to legal and ethical issues related to health information privacy and security and the basic technological considerations to meet those professional obligations in health informatics practice.

Meeting Times: Thursdays, 5:30PM-8:15PM

Meeting Place: Online – Synchronous with Supplementary Asynchronous Discussion

Instructor:
Michael W. Moore, Ph.D.
Executive Director, Academic Technology
Office: College of Health and Human Services
Office hours: By appointment
E-mail: michael.moore@uncc.edu
Office phone: 704-687-7883

Required textbooks:


Learning Objectives:
Learning objectives include:

- Identify the effects of legal and ethical theories, methods, and models applicable to health informatics from multiple levels including individual, social group, and society.
- Define and discuss legal and ethical principles and the health informatician’s responsibility to the profession, their employers, and ultimately to the stakeholders of the informatics solutions they create and maintain.
- Demonstrate professional practices that incorporate legal and ethical principles and values of the health informatics discipline.
- Increase students’ knowledge of the primary legal and ethical principles operative in the U.S. health informatics environment.
- Increase students’ understanding, monitoring, and interpretation of the impacts of legal and ethical regimes on health informatics.
- Increase students’ ability to analyze the complex regulatory milieu in which health informatics
professionals work.

- Increase students’ ability in health informatics to express their views clearly on complex legal and ethical issues in written as well as oral fashion.
- Learn and apply a process of ethical decision making to health information management scenarios.
- Consider when it is appropriate to contact an organization’s legal counsel, and personal legal counsel, for guidance regarding the use and disclosure of a patient’s sensitive health information.
- Preparation to make legal and ethical decisions as a standard of practice.
- Increase student's knowledge of security principles and frameworks; networks and the Internet; security technologies.
- Demonstrate the practical application of information security principles to the protection of health data in a contemporary health informatics work environment
- Identify factors of authentication and how they are used to secure data
- Describe the security vulnerabilities associated with database structures and plan for the appropriate level of access for users
- Understand the underlying mathematical and physical concepts behind cryptography
- Determine ways in which cryptography can store and secure information
- Discuss the relationship between possible cryptographic techniques and their relationship to the level of security provided

Teaching Strategies:
Legal and ethical issues classes are conducted in some Socratic method and informal lecture style. Students are expected to read all assignments before class and come to class prepared to discuss the material.

It is assumed that graduate students “have gained sufficient mastery of at least one discipline [as undergraduates]¹ that they can take on a major part of the responsibility for their own education.” Graduate course emphasis is not on classroom lecture or discussion by the instructor, but on the reading, thinking and problem solving done by the students. “A graduate course is one in which students are required to deepen their understanding of a disciplinary area largely through independent work under the guidance of a qualified instructor.”

Time management. As a general rule, students should spend a minimum of at least three hours preparing for class for each hour in class.

Course Requirements and Assessment:
Readings in: (1) Harman & Cornelius; (2) Andress; (3) Aumasson and (4) as otherwise specified.

Please contact the Writing Resources Center for assistance with writing: http://writing.uncc.edu/writing-resources-center

University class attendance requirements apply; non-preparation will be considered nonattendance for grading purposes.

¹ From your college education, you are presumed to have knowledge and experience at the level of the following guide for high school and college students: MLA Handbook for Writers of Research Papers (Eighth Edition 2016), NYC, NY: Modern Language Association.
**Grading Policy**
Homework Papers (2) – 20%
Classroom Participation – Discussions, Debates, Case Studies, Engaged Attendance, SAT – 25%
Class Project (1) - 15%
Quizzes (3) - Online in Canvas 15%
Written Midterm – 10%
Written Final – 15%

Grading will be based on comparison with the performance of fellow students.

Official grades (those reported to the registrar and recorded on the student’s transcript) for graduate students are on the scale: 90%-100% A, 80%-89% B, 70%-79% C, below 70% U.

Acts of dishonesty, including plagiarism, are prohibited. Examples of plagiarism include failure to appropriately use quotation marks or references. Academic integrity is strictly enforced.

**Standard syllabus policies (UNC Charlotte Office of Legal Affairs, updated August 11, 2017)**

**Notice of classroom expectations:**
This syllabus contains the policies and expectations I have established for Health Information Privacy and Security. Please read the entire syllabus carefully before continuing in this course. These policies and expectations are intended to create a productive learning atmosphere for all students. Unless you are prepared to abide by these policies and expectations, you risk losing the opportunity to participate further in the course.

**Encouragement of orderly and productive classroom conduct:**
I will conduct this class in an atmosphere of mutual respect. I encourage your active participation in class discussions. Each of us may have strongly differing opinions on the various topics of class discussions. The conflict of ideas is encouraged and welcome. The orderly questioning of the ideas of others, including mine, is similarly welcome. However, I will exercise my responsibility to manage the discussions so that ideas and argument can proceed in an orderly fashion. You should expect that if your conduct during class discussions seriously disrupts the atmosphere of mutual respect I expect in this class, you will not be permitted to participate further.

**Revision of the syllabus during the semester**
The course instructor may modify the standards and requirements set forth in this syllabus at any time. Notice of such changes will be by announcement in class or by written or email notice.

**Policy on the instructor’s absence or tardiness:**
If I am late in arriving to class, you must wait a full 20 minutes after the start of class before you may leave without being counted absent, or you must follow any written instructions I may give you about my anticipated tardiness.

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2 “Typical Examples: Submitting as one’s own work of a "ghost writer" or commercial writing service; directly quoting from a source without citation; paraphrasing or summarizing another's work without acknowledging the source; using facts, figures, graphs, charts or information without acknowledgement of the source; stealing, destroying, or altering any student academic work used to complete, in part or in whole, assignments in university courses, programs, or sponsored activities. Plagiarism may occur orally and in writing. It may involve computer programs and files, research designs, distinctive figures of speech, ideas and images, or generally any "information" which belongs to another.” [http://legal.uncc.edu/policies/up-407](http://legal.uncc.edu/policies/up-407)
Notice of student rights and responsibilities in obtaining disability accommodations:
Students in this course seeking accommodations to disabilities must first consult with the Office of Disability Services and follow the instructions of that office for obtaining accommodations.

Notice of non-discrimination in the classroom:
All students and the instructor are expected to engage with each other respectfully. Unwelcome conduct directed toward another person based upon that person’s actual or perceived race, actual or perceived gender, color, religion, age, national origin, ethnicity, disability, or veteran status, or for any other reason, may constitute a violation of University Policy 406, The Code of Student Responsibility. Any student suspected of engaging in such conduct will be referred to the Office of Student Conduct.

Preferred gender pronoun
This course affirms people of all gender expressions and gender identities. If you prefer to be called a different name than what is indicated on the class roster, please let me know. Feel free to correct me on your preferred gender pronoun. If you have any questions or concerns, please do not hesitate to contact me.

Prevention of academic integrity violations, including plagiarism:
All students are required to read and abide by the Code of Student Academic Integrity. Violations of the Code of Student Academic Integrity, including plagiarism, will result in disciplinary action as provided in the Code. Definitions and examples of plagiarism⁴ are set forth in the Code. The Code is available from the Dean of Students Office or online. Faculty may ask students to produce identification at examinations and may require students to demonstrate that graded assignments completed outside of class are their own work. For example, the instructor may: (i) require a draft bibliography prior to submission of the final paper; or (ii) require the cover page and first cited page of each reference source to be photocopied and submitted with the final paper.

Violations of academic integrity will be strictly enforced and severely punished, with penalties ranging from reduction of grade, to a zero for an assignment, to a failing grade for the course.

Notice to students of Title IX reporting obligations re: incidents of sexual harassment, sexual assault, dating violence, domestic violence, or stalking:
UNC Charlotte is committed to providing an environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic violence, dating violence, and stalking. If you (or someone you know) has experienced or experiences any of these incidents, know that you are not alone. UNC Charlotte has staff members trained to support you in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more.

Please be aware that many UNC Charlotte employees, including all faculty members, are considered Responsible Employees who are required to relay any information or reports of sexual misconduct they receive to the Title IX Coordinator. This means that if you tell me about a situation involving sexual harassment, sexual assault, dating violence, domestic violence, or stalking, I must report the information to the Title IX Coordinator. Although I have to report the situation, you will still have options about how your case will be handled, including whether or not you wish to pursue a formal complaint. Our goal is to make sure you are aware of the range of options available to you and have access to the resources you need.

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⁴ “Typical Examples: Submitting as one’s own work of a ”ghost writer” or commercial writing service; directly quoting from a source without citation; paraphrasing or summarizing another's work without acknowledging the source; using facts, figures, graphs, charts or information without acknowledgement of the source; stealing, destroying, or altering any student academic work used to complete, in part or in whole, assignments in university courses, programs, or sponsored activities. Plagiarism may occur orally and in writing. It may involve computer programs and files, research designs, distinctive figures of speech, ideas and images, or generally any "information" which belongs to another.” http://legal.uncc.edu/policies/up-407
If you wish to speak to someone confidentially, you can contact any of the following on-campus resources, who are not required to report the incident to the Title IX Coordinator: (1) University Counseling Center (counselingcenter.uncc.edu, 7-0311); (2) Student Health Center (studenthealth.uncc.edu, 7-7400); or (3) Center for Wellness Promotion (wellness.uncc.edu, 7-7407). Additional information about your options is also available at titleix.uncc.edu under the “Students” tab.

**University policy on withdrawals:**
Students are expected to complete all courses for which they are registered at the close of the add/drop period. If you are concerned about your ability to succeed in this course, it is important to make an appointment to speak with me as soon as possible. The University policy on withdrawal allows students only a limited number of opportunities available to withdraw from courses. It is important for you to understand the financial and academic consequences that may result from course withdrawal.

**To clearly set forth the policy on credit hours and student work for a course:**
This 3-credit course requires 3 hours of classroom or direct faculty instruction and 9 hours of out-of-class student work each week for approximately 15 weeks. Out-of-class work may include but is not limited to: required reading, library research, written assignments, and studying for quizzes and exams.

**Prevention of sexual harassment in web-based or web-assisted courses:**
All students are required to abide by the UNC Charlotte Sexual Harassment Policy and the policy on Responsible Use of University Computing and Electronic Communication Resources. Sexual harassment, as defined in the UNC Charlotte Sexual Harassment Policy, is prohibited, even when carried out through computers or other electronic communications systems, including course-based chat rooms or message boards.

**Prevention of cell phones, smart phones, or other mobile communication devices in the classroom:**
The use of cell phones, smart phones, or other mobile communication devices is disruptive, and is therefore prohibited during class. Except in emergencies, those using such devices must leave the classroom for the remainder of the class period.

**Computer use in the classroom:**
Students are permitted to use computers during class for note-taking and other class-related work only. Those using computers during class for work not related to that class must leave the classroom for the remainder of the class period.

**Prohibition of recording in the classroom:**
Electronic video and/or audio recording is not permitted during class unless the student obtains permission from the instructor. If permission is granted, any distribution of the recording is prohibited. Students with specific electronic recording accommodations authorized by the Office of Disability Services do not require instructor permission; however, the instructor must be notified of any such accommodation prior to recording. Any distribution of such recordings is prohibited.

**Policy on absenteeism or tardiness:**
Students are expected to attend every class and remain in class for the duration of the session. Failure to attend class or arriving late may impact your ability to achieve course objectives, which could affect your course grade. An absence, excused or unexcused, does not relieve a student of any course

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requirement. Regular class attendance is a student’s obligation, as is a responsibility for all the work of class meetings, including tests and written tasks. Any unexcused absence or excessive tardiness may result in a loss of participation points.

Class Absence(s): The authority to excuse a student’s class absence(s) and to grant a student an academic accommodation (turn in a late assignment(s), provide extra time on an assignment, reschedule an exam(s) etc.) sits with the individual instructor. Students are encouraged to work directly with their instructors regarding their absence(s). Note: The Dean of Students Office can assist faculty members in the verification a student's class absence(s) for documented situation related to medical, psychological, personal crisis, or military absences.

**Schedule of Assignments**

<table>
<thead>
<tr>
<th>Due Date</th>
<th>Course Overview</th>
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<tr>
<td>January 21 (1)</td>
<td>Course Overview</td>
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<tr>
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<td>Ethical and Security Concerns for Emerging Technology in Consumer Health</td>
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<td>Case Studies</td>
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<td>No reading due beforehand</td>
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<td>January 28 (W2)</td>
<td>Establishing an IT Security Baseline - Identification and Authentication</td>
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<td>Read Andress Chapter 2 pp. 23-34</td>
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<td>Social Engineering – Human Element Security</td>
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<td>Read Andress Chapter 8 pp. 107-120</td>
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<td>Professional Ethics: Professional Values and the Code of Ethics; Ethical Decision-Making Guidelines and Tools; and, Privacy and Confidentiality</td>
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<td><strong>Online ASYNCH Discussion Due Feb 4th by 5:30PM</strong></td>
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<td>(1) Introduce Yourself</td>
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<td>(2) Answer Scenario Discussion Questions</td>
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<td>(3) Respond to 2 of your classmate's answers OR Introductions</td>
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<td>February 4 (W3)</td>
<td>Network Security</td>
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<td>Read Andress pp. 133 – 144</td>
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<td>Electronic Health Information: Electronic Health Records, and, Information Security</td>
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<td><strong>Online SYNCH Discussion in Zoom Breakout Rooms</strong></td>
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**February 11**  
*No Class - Spring Break*

**February 18 (W4)**  
**Quiz 1 Due (Network Security, Social Engineering, Identification, Authentication)**

*Uses of Health Information: Compliance, Fraud, and Abuse, and, Coding*  
Read, pp. 119-143 (chapter 5) and 145-182 (chapter 6).  
Prepare scenarios beginning on pp. 119, 130 (2 scenarios), 132, 145, 148, and 155.  
Online SYNC Discussion – Zoom

**February 25 (W5)**  
**HW Paper 1 Due**

*Ethical Responsibilities of IT Professionals*  
Read Harman & Cornelius, pp. 183-209 (chapter 7) and 211-232 (chapter 8).  
Prepare scenarios beginning on pp., 183, 187, 188, 191, 193, and 212 (2 scenarios).  
Online SYNC Discussion - Zoom

**March 4 (W6)**  
**Security Awareness Training SAT Due**

*Cryptography*  
Read Andress Chapter 5 pp. 61-78  
Read Aumasson - Encryption – pp. 1-19  
Read Aumasson - TLS Background – pp.235- 249  
What is TLS? Why is it important?

**March 11 (W7)**  
**Written Midterm – Completed during class time 5:30-8:15PM – Password provided in Zoom at Class time**

*Consumer and Professional Informatics: Digital Health Technologies for Consumers, Patients and Caregivers; and, Advocacy; Future Challenges and Opportunities*  
Read Articles as Provided  
Online Discussion – ASYNCH – Discussion Forum

**March 12**  
*Unsatisfactory Grades Due to the University*

**March 18 (W8)**  
**Deidentification of Data**  
Ethical and Information Security Concerns for Large Data Sets  
Read Articles as Provided  
Online Discussion – ASYNCH – Discussion Forum
March 25 (W9)  
**Quiz 2 Due (Cryptography, Deidentification of Data)**

**Application Security**  
Read Andress Chapter 12 pp. 173-190  
Guest Lecture* - TBD

April 1 (W10)  
**Operations Security**  
Read Andress Chapter 6 pp. 95-105

**Operating System Security**  
Read Andress Chapter 9 pp. 145-157

**Management of Sensitive Health Information: Substance Abuse, Behavioral Health and Sexual Information**  
Read Harman & Cornelius, pp. 509-541 (chapter 20)  
Prepare scenarios beginning on pp. 510, 514, 516, 517, 519, 520, 521, and 522.  
Online Discussion – ASYNCH - Canvas

April 8 (W11)  
**HW Paper 2 Due**  
**Security Challenges of Artificial Intelligence and Machine Learning**  
Articles as Provided

**Uses of Health Information: Public Health and Informatics, and, Clinical Care End of Life**  
Read Harman & Cornelius, pp. 233-269 (chapter 9) and 297-314 (chapter 11).  
Prepare scenarios beginning on pp. 233, 260, 297, 299, 301, and 302.  
Online Discussion – SYNCH - Zoom

April 15 (W12)  
**Class Project Due**  
**Impact of Emerging Technology – Quantum Computing**  
Read Aumasson - Quantum – pp. 251-269

**Electronic Health Information: Information Technology and Biomedical Instrumentation, and, Integrated Delivery Systems**  
Read Harman & Cornelius, pp. 371-392 (chapter 14) and 419-440 (chapter 16).  
Prepare scenarios beginning on pp. 373, 379, 383, 419, 426, and 429.  
Online Discussion – ASYNCH – Canvas Discussion

April 22 (W13)  

**Electronic Health Information: Digital Health (Health Information Technology and Information Exchange), and, Management of Sensitive Health Information (Genetic Information, and, Adoption Information)**  
Read Harman & Cornelius, pp. 441-466 (chapter 17), 467-486 (chapter 18), and 487-508 (chapter 19).  
Prepare scenarios beginning on pp. 456, 469, 487, 495, and 496.
Online – SYNC – Zoom Discussion
ALL Online Discussions Must be Complete

April 29 (W14)    Auditing and Accountability
                 Read Andress Chapter 4 pp. 51-59

                 Information Governance and Management
                 Read Harman & Cornelius, pp. 393-416 (Chapter 15)

                 Prepare included scenarios
                 Online Discussion - SYNC - Zoom

April 30          Day of Remembrance (No classes)

May 6             Reading Day

May 7 - 11 (W15) (Thursday)Written Final – Online – 5PM