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Department of Information Science

INFO 5737 Information & Cyber-Security Spring 2019

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Course Information

Course Format

This course is delivered as an online course, with a supporting Blackboard Learn website. All course materials are provided online, with the expectation that you will obtain other supplemental materials online in order to complete your assignments. Ten learning modules that reflect the most current issues in the information security and cyber-security field are used as a framework to organize and deliver online course materials to students.

Course Descriptions

3 hours. The course introduces students to various technical and administrative aspects of information security and cyber-security. Provides the foundation for understanding the key issues associated with protecting information and knowledge assets as well as determining the levels of protection and response to security/privacy threats. Deals with intrusion and privacy issues as well as reporting and managing incidents. Students will be exposed to wide range of security/privacy concepts, case studies, lessons learned, methods and methodologies of dealing with security/privacy threats in the ever-changing global information environment.

Prerequisites

There are no prerequisites for INFO 5737.

Learning Modules

The course content of INFO 5737 is organized into ten Learning Modules:

Module 1: Introduction to Information Security and Cyber-Security
Module 2: Security Management
Module 3: Risk Management
Module 4: Cyber-Security Architecture
Module 5: Security Engineering
Module 6: Security Assessment/Testing and Security Controls
Module 7: Communication and Network Security
Module 8: Identity and Access Management
Module 9: Security Operations
Module 10: Security in the Software Development Life Cycle

Course Goals and Objectives

Goals:

To introduce you to the nature and scope of the information security and cyber-security field for the purpose of guiding you to apply information security and cyber-security knowledge in your future career.

Objectives:

Upon completion of this course, you should be able to:

- ✓ demonstrate the knowledge of basic scope of the information security and cyber-security professions using concept mapping techniques and voice in our respective industries for stronger cyber-security practices.
- ✓ present why information security and cyber-security matter in every industry.
- ✓ acquire common body of knowledge of information security and cyber-security.
- ✓ examine ethics, values, norms, and foundational principles of the information security, cyber-security, and information privacy professionals.
- ✓ present the role and attributes of an effective information and knowledge professional regarding understanding the potential risks (such as hacking, online identity theft, denial- of-service attacks, and computer) and safeguarding information assets in your organization.
- ✓ exhibit essential knowledge of information and cyber-security and be able to provide the users with information security/privacy and cyber-security awareness training.

Course Materials

Textbook

Gordon, A. (Eds.). (2015) Official (ISC)² Guide to the CISSP CBK, Fourth Edition, CRC Press.

PS: CISSP (Certified Information Systems Security Professional), the first and one of the most well-known credentials in the field of information security, has won US SC Awards for "Best Professional Certification Program" in 2014, 2015, and 2016. In particular, CISSP updated its exam blueprint in April 2015 and will update again in April 2018. You can compare the detailed content outline for further information. The point is that its common body of knowledge (CBK) reflects the most comprehensive and current topics and issues in the emerging cyber-security field. If you are interested in working for healthcare related industries, they have a specific professional certification called HCISPP.

Recommended Texts

[1] Carrascosa, I. P., Kalutarage, H. K., & Huang, Y. (Eds.). (2017). *Data Analytics and Decision Support for Cybersecurity: Trends, Methodologies and Applications*. Springer.
[2] LeChair, J. & Keeley, G. (Eds.). (2015). *Cybersecurity in Our Digital Lives*. NY: Hudson Whitman/Excelsior College Press.
[3] Moore, M. (Ed.) (2017). *Cybersecurity Breaches and Issues Surrounding Online Threat Protection*, Pennsylvania: IGI Global.
[4] Tehan, R. (2018). *Cybersecurity: Data, Statistics, and Glossaries*, Washington, D.C: Library of Congress, Congressional Research Service.

Required and Supplementary Readings

There are supplemental required readings for each of the ten modules. Required readings are listed on the Blackboard course website; they are either directly linked from the website or can be easily retrieved through the UNT Libraries main catalog or electronic resources database (http://www.library.unt.edu/).

Course Requirements

Module Learning Activities (40% of Final Grade)

Each module will have various activities including concept mapping, online discussions regarding how to learn and apply the concepts to the practices and information sharing. Each module will have a single deadline for completion of the reading(s) and discussion participation.

- Synthesis Concept Mapping Assignments (20%). As a note-taking tool, students are required to organize/synthesize at least three key concepts from each common body of knowledge domain and/or assigned readings for each learning module using the concept-

mapping tool, Cmap. A short reading reflection is required for each module with assigned readings. Each synthesis will contain a concept map, five important direct quotes (which you use to construct your concept map), reflection, and references. The Students will receive a grade of 0-100 based on peer grading. Students should post their synthesis concept map to a wiki page on PBworks that is set up with the module number. Students will have to submit **minimum seven concept map assignments**. Students willing to submit all ten concept mapping assignments will have the advantage of dropping their three lowest grades. Only **seven highest grades** will be considered.

- Online Discussions (10%). All students will be expected to monitor and interpret current information/cyber security news (in recent two years) or studies (in recent three years) and provide with links to news stories, publications, or events relevant to the topics of learning modules. These will help students keep informed of recent developments and learn from each other's perspective through online information sharing and discussions. Students should share current information or resources relevant to the corresponding module discussion and respond constructively to at least one student's posting. The postings should be at least 100 words based upon and refer to the information source(s). Students will have to submit **minimum seven discussion posts**. Students willing to submit all ten discussions will have the advantage of dropping their three lowest grades. Only **seven highest grades** will be considered.

- Quizzes (10%). Each module will have one quiz containing 15~20 multiple choice questions. The quiz will cover materials introduced in the given module, in particular the review questions in the textbook and important topics highlighted in the slides. Students will have to take **minimum five quizzes**. Only **five highest grades** will be considered.

Cyber-Security Intervention/Innovation Project or Research (25% of Final Grade)

Both public and private sectors across industries are striving for a secure environment through cyber security intervention/innovation, which could be an information/cyber security policy, a new cyber security awareness program, a new security process or security innovation to support the delivery of intervention. The purpose of this project, either a research-oriented or practice-oriented, is to let students gain an understanding of implementing intervention/ innovations or conducting a research at the personal, organizational, national, or international level, and their influences on ensuring better information security or cyber security. This project also helps the student to research about information/cyber security and come up with new findings. Please refer to the Table 3 of the following work to learn more about potential cyber- security intervention/innovation strategies.

Rowe, B., Halpern, M., & Lentz, T. (2012). Is a Public Health Framework the Cure for Cyber Security?. *CrossTalk*, 25(6), 30-38. (Table 3 at page 36 provides a taxonomy of cyber-security intervention strategies for individuals based on the public health framework.)

Additionally, this is a great opportunity to develop your cybersecurity skills and knowledge. Students will work **individually** or **collaboratively** in this project. Each student will use PBworks to create Wiki pages and document the study of an intervention or innovation. The requirements

include at least eight Wiki pages (excluding References or Appendix) summarizing the intervention or innovation, lesson learned and the implications to the fields.

Students will either choose to research on any specific topic about information security/cybersecurity or choose an intervention/innovation topic related to information security and cyber security using a variety of sources, such as encyclopedias, academic databases, books, articles, web sites or interviews. Cite reliable sources for the references. Students will be expected to document their sources and will be required to employ the APA Manual of Style as the citation guide.

Student should *submit one-page proposal describing the research/intervention/innovation topic he/she has decided to study and the reason/motivation for choosing the research/intervention/innovation by* ***March 25, 2019****. Once the topic is approved, student can proceed with the project.*

During the last week of class, depending on the interests and/or the availability of the students, we will accommodate an online meeting for final project presentations in which students will describe their projects and share what they have learned with their peers. Length of presentations will depend upon course enrollment and participations.

Mid-Term Exam (15% of Final Grade)

In terms of examination format, the mid-term exam consists of fifty (50) multiple choice questions with four choices each. The mid-term exam will cover the first six modules in the course and will not go beyond the scope of review questions and module quizzes in the textbook.

Final Exam (20% of Final Grade)

The final exam will cover the full spectrum of materials presented during the course. In terms of examination format, the final exam consists of sixty (60) multiple choice questions with four choices each and short answer questions (choosing five out of seven questions). The final exam will cover material introduced since the first module and contain 25% of mid-term exam.

Late Work: We will not grade any late work unless you ***notify*** the instructor and the TA ***24 hours before the assignment is due***. However, **five points** will be deducted for each day an assignment is late. Extensions may be granted in advance of the due date with reasonable cause. Exceptions may be made on an individual basis in cases of emergency.

Assessment and Grading

Assignment grading is based on rubric attached to each assignment description on PBworks and Blackboard.

Activities	Grading Percentages
Learning Module Activities	40%
Cyber-security Research/Intervention/Innovation Project	25%
Midterm Exam	15%
Final Exam	20%

Grading Scale

The UNT scale for grading is as follows:

A (Excellent work) = 90 - 100 points

B (Good work) = 80 - 89 points

C (Fair work) = 70 - 79 points

D = 60 - 69 points

F = 59 points and below

Grading Criteria

- Deadlines: All assignments must be submitted via the Blackboard before midnight on the due date. **Five points** will be deducted for each day an assignment is late. You must notify the instructors if your assignment will be late.
- Completeness: Assignments are detailed. Avoid losing points for incompleteness or failure to follow instructions. If you do not understand the assignments, ask the TA or the instructor for help prior to the deadline.

Grading Timeframe

You can expect to receive a grade for any graded assignment approximately seven days after the due dates of the assignment or peer grading. If you submit an assignment before the due date, please do not include early days in your day count. The instructor will contact the students if the grading goes beyond that timeframe.

Course Schedule (subject to change at instructor's discretion)

No.	Week	Activities	Assignment Due
1	1/14 ~ 1/21	Welcome and Course Introduction (Request the access to course wiki on PBworks, PBworks orientation assignment) Read syllabus to get an overview of the course, post self-introduction (on Canvas Discussions) and do PBworks orientation assignment (on PBworks)	1/21
2	1/22 ~ 1/28	Module 1 Concept Map (on PBworks and submit the link of your map via Canvas Assignment), Discussion post (Canvas Discussions), and Quiz (Canvas Modules)	1/28
3	1/29 ~ 2/4	Module 2 Concept Map (on PBworks and submit the link of your map via Canvas Assignment), Discussion post (Canvas Discussions), and Quiz (Canvas Modules)	2/4
4	2/5 ~ 2/11	Module 3 Concept Map (on PBworks and submit the link of your map via Canvas Assignment), Discussion post (Canvas Discussions), and Quiz (Canvas Modules)	2/11
5	2/12 ~ 2/18	Module 4 Concept Map (on PBworks and submit the link of your map via Canvas Assignment), Discussion post (Canvas Discussions), and Quiz (Canvas Modules)	2/18
6	2/19 ~ 2/26	Module 5 Concept Map (on PBworks and submit the link of your map via Canvas Assignment), Discussion post (Canvas Discussions), and Quiz (Canvas Modules)	2/26
7	2/26 ~ 3/4	Module 6 Concept Map (on PBworks and submit the link of your map via Canvas Assignment), Discussion post (Canvas	3/4

No.	Week	Activities	Assignment Due
		Discussions), and Quiz (Canvas Modules)	
8	3/5 ~ 3/11	Midterm Exam	3/11
9	3/12 ~ 3/18	**Spring Break (no classes)**	
10	3/19 ~ 3/25	**(Group) Project Topic Proposal (PBworks)**	3/25
11	3/26 ~ 4/1	Module 7 Concept Map (on PBworks and submit the link of your map via Canvas Assignment), Discussion post (Canvas Discussions), and Quiz (Canvas Modules)	4/1
12	4/2 ~ 4/8	Module 8 Concept Map (on PBworks and submit the link of your map via Canvas Assignment), Discussion post (Canvas Discussions), and Quiz (Canvas Modules)	4/8
13	4/9 ~ 4/15	Module 9 Concept Map (on PBworks and submit the link of your map via Canvas Assignment), Discussion post (Canvas Discussions), and Quiz (Canvas Modules)	4/15
14	4/16 ~ 4/22	Module 10 Concept Map (on PBworks and submit the link of your map via Canvas Assignment), Discussion post (Canvas Discussions), and Quiz (Canvas Modules)	4/22
15	4/23 ~ 4/29	**Project Presentations** (via online meeting or submitting project summary slides)	4/29
16	4/30 ~ 5/6	**Final Project Wiki pages (on PBworks)**	5/6
17	5/7 ~ 5/11	**Final Exam**	5/10

Technical Requirements / Assistance

The following information has been provided to assist you in preparation for the technological aspects of the course. The University Information Technology (UIT) Helpdesk offers helpful resources and addresses any issues that might arise with IT at ://www.unt.edu/helpdesk/

1. Be sure you are using a supported web browser. Canvas supports the current and first previous major releases of the following browsers:
   - Chrome 70 and 71
   - Firefox 63 and 64 (Extended Releases are not supported)
   - Flash 31 and 32 (used for recording or viewing audio/video and uploading files)
   - Internet Explorer 11 (Windows only—functionally supported; may exhibit slight visual differences from other browsers, but these differences do not restrict product functionality) http
   - Edge 42 and 44 (Windows only)
   - Respondus Lockdown Browser (supporting the latest system requirements)
   - Safari 11 and 12 (Macintosh only)

   Commonly used 3rd party plug-ins you may need to install for this course:
   - Acrobat Reader
   - Real Player
   - Flash
   - Shockwave
   - Windows Media Player

2. Additional help for using Canvas:
   https://community.canvaslms.com/docs/DOC-10554-4212710328

3. Student Support
   The University of North Texas provides student technical support in the use of Canvas and supported resources. The student help desk may be reached at:
   Website: http://www.unt.edu/helpdesk/
   Phone: 940.565-2324
   In Person: Sage Rm. 130
   Regular hours are maintained to provide support to students. Please refer to the website for updated hours.

Access & Navigation

- **Access and Log in Information**
  This course was developed and will be facilitated utilizing the University of North Texas' Learning Management System, Canvas. To get started with the course, please go to: https://unt.instructure.com/.

  You will need your EUID and password to log in to the course. If you do not know your EUID or have forgotten your password, please go to: https://ams.unt.edu/.

- **Canvas Student Guide**
  As a student, you will have access to the "Canvas Student Guide" tutorial via Canvas. You are strongly encouraged to become familiar with the tools and tutorials within the student orientation to better equip you to navigate the course.

- **Accessing Grades**
  As assignments are graded, grades will be posted in the class grade book. Effort will be made to complete grading and post grades expeditiously, so please be patient. If a student has a question about a grade, please consult the rubric first before contacting the instructor.

- **Assignment Submission Instructions**
  Please do not wait until the last minute to post assignments as technical problems may occur.

IT Resources

- UNT Portal: http://my.unt.edu
- UNT Canvas Student Support: https://community.canvaslms.com/docs/DOC-10554-4212710328
- General access computer lab information (including locations and hours of operation) can be located at: http://www.gacl.unt.edu/
- UNT Library Information for Off-Campus Users: http://www.library.unt.edu/services/facilities-and-systems/campus-access
- UNT Computing and Information Technology Center: https://citc.unt.edu/help-support/students
- Computer Lab at Discovery Park: http://www.ci.unt.edu/main/ViewPage.php?cid=235

Policies

ADA Accommodation

If you have a disability and require accommodation under the terms of the federal Americans with Disabilities Act (ADA), you must present a written accommodation request to the primary instructor by the end of the ***second week of the semester***.

You should submit a request even if it is possible that accommodation may not be necessary later in the semester. You should register with the UNT Office of Disability Accommodation (ODA; http://www.unt.edu/oda/ or 940-565-4323), which provides many kinds of support services.

Procedures are explained in the Disability Accommodation Policy **18.1.14** in the *UNT Policy Manual* (http://www.unt.edu/policy/UNT_Policy/volume3/18_1_14.html)

Netiquette

Free of Disruptions *– Students have the right to pursue an education without disruption or*

interference and to expect enforcement of norms for acceptable classroom behavior that prevents disruption of the teaching/learning process.

Responsibility: *Students may not disrupt class or any other University process by any means whatsoever (including sideline conversations, comments, arguments, noise of any kind or other activity which would hinder access to or utilization of academic information)*

--#8 from "The Ten Student Academic Rights and Responsibilities", UNT Code of Student Conduct

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT.

Students engaging in unacceptable behavior will be **barred from the classroom/course website** and the instructor may refer the student to the Center for Student Rights and Responsibilities to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for student conduct apply to all instructional forums, including university and electronic classroom, labs, discussion groups, field trips, etc.

Only topics related to the course content should be discussed during class time. Talking out-of-turn during a lecture/chat or engaging in inappropriate discussions in the Discussion boards is distracting to others in the class.

Failure to follow these guidelines will result in your:

- being asked to leave the classroom and/or instructor **barring** you from the course website,
- receiving a “zero” on class activities (assessment, assignment, test, etc.), and
- possibly being referred to the Center for Student Rights and Responsibilities (see above information and web address)

Therefore, be respectful of the instructor and other students around you.

UNT Policies

Academic Honesty Policy

You are encouraged to become familiar with the University's Policy of Academic dishonesty found in the *Student Handbook*. The content of the Handbook applies to this course. Additionally, the following specific requirements will be expected in this class: (enter specific requirements). If you are in doubt regarding the requirements, please consult with me before you complete any requirements of the course.

ADA Policy

The University of North Texas is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 92-112 – The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act (ADA), pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty of their need for accommodation and in providing authorized documentation through designated administrative channels. Information regarding specific diagnostic criteria and policies for obtaining academic accommodations can be found here. Also, you may visit the Office of Disability Accommodation in the University Union (room 321) or call us at (940) 565-4323.

Add/Drop Policy
Please refer to the UNT Faculty Handbook or your department regarding the Add/Drop Policy.

Code of Conduct
Please refer to the UNT Faculty Handbook or your department regarding the Student Code of Conduct Policy.

Important Notice for F-1 Students taking Distance Education Courses:

Federal Regulation

To read detailed Immigration and Customs Enforcement regulations for F-1 students taking online courses, please go to the Electronic Code of Federal Regulations website at http://ecfr.gpoaccess.gov. The specific portion concerning distance education courses is located at "Title 8 CFR 214.2 Paragraph (f)(6)(i)(G)" and can be found buried within this document: http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?TITLE=8&PART=214&SECTION=2&TYPE=TEXT

The paragraph reads:

(G) For F–1 students enrolled in classes for credit or classroom hours, no more than the equivalent of one class or three credits per session, term, semester, trimester, or quarter may be counted toward the full course of study requirement if the class is taken on-line or through distance education and does not require the student's physical attendance for classes, examination or other purposes integral to completion of the class. An on-line or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing. If the F–1 student's course of study is in a language study program, no on-line or distance education classes may be considered to count toward a student's full course of study requirement.

University of North Texas Compliance

To comply with immigration regulations, an F-1 visa holder within the United States may need to engage in an on-campus experiential component for this course. This component (which must be approved in advance by the instructor) can include activities such as taking an on-campus exam, participating in an on-campus lecture or lab activity, or other on-campus experience integral to the completion of this course.

If such an on-campus activity is required, it is the student's responsibility to do the following:

(1) Submit a written request to the instructor for an on-campus experiential component within one week of the start of the course.

(2) Ensure that the activity on campus takes place and the instructor documents it in writing with a notice sent to the International Student and Scholar Services Office. ISSS has a form available that you may use for this purpose.

Because the decision may have serious immigration consequences, if an F-1 student is unsure about his or her need to participate in an on-campus experiential component for this course, s/he should contact the UNT International Student and Scholar Services Office (telephone 940-565-2195 or email internationaladvising@unt.edu) to get clarification before the one-week deadline.