# Intro to Information Security

Course: CIS 481-80 Summer 2011

Section 80: M, T, TR 5:30 - 8:15 PM , BS 008

Instructor: Daniel Johnsen, MBA

E-Mail: dpjohn02@louisville.edu

Office Hours:

By appointment only

Text:

Principles of Information Security, 4th Edition, by Michael E. Whitman and Herbert J.

Mattord, Course Technology Cengage Learning, 2009 (ISBN-13: 978-1111138219).

Prerequisites: CIS 320.

## Course Description:

Basic notions of confidentiality, integrity, availability, authentication models, protection models, security kernels, audit, intrusion detection, operational security issues, physical security issues, security system life cycle management, personnel security, policy formation and enforcement, trust modeling, risks and vulnerabilities

assessment, basic issues of law and privacy, trade secrets, employee covenants, copyright, database protection, software and hardware validation, verification and certification.

## Course Objectives:

* Understand the fundamental concepts in information security
* Understand the critical characteristics of information
* Understand the security systems development life cycle
* Understand the typical threats and attacks faced by information systems
* Understand the legal and ethical issues in information security
* Understand the issues in risk management
* Understand the practice of planning, implementing, and maintaining information security
* Understand the practice of business continuity planning
* Understand the basic technologies used to help secure systems including firewalls, virtual private networks, intrusion detection/prevention systems
* Understand the basic elements of cryptography
* Understand the role of physical security
* Understand the career options and credentials of information security professionals
* Understand the Paul-Elder model of critical thinking (adopted by the University of Louisville)

## Course Grades:

Although extra credit may available on some assignments, at no time will it be allowed to elevate

any category's contribution beyond the maximum percentages specified above.

97.0 - 100.0 : A+

93.0 - 96.9 : A

90.0 - 92.9 : A-

87.0 - 89.9 : B+

83.0 - 86.9 : B

80.0 - 82.9 : B-

77.0 - 79.9 : C+

73.0 - 76.9 : C

70.0 - 72.9 : C-

67.0 - 69.9 : D+

63.0 - 66.9 : D

60.0 - 62.9 : D-

00.0 - 59.9 : F

Curving may be employed but this minimum will be guaranteed. Note, assignment scores will be

posted in Blackboard but Blackboard currently doesn't calculate final weighted scores correctly.

Students must use the above category weights to accurately track their progress.

|  |  |
| --- | --- |
| 4 Exams  Assignments, Homework, & In-Class Exercises  Quizzes  Individual/Company Project | 40 %  20 %  20 %  20 % |

## Policies

1. **Assignments and Homework**: Assignments and homework may consist of problems, labs, and short research papers. Requirements for each will be specified in the assignment description posted in Blackboard. Unless otherwise specified, all assignments and homework will be submitted using Blackboard's Assignment tool. Files may be e-mailed to your instructor only if problems prevent the use of Blackboard. Be sure to keep a backup of all your files!!!
2. **Individual/Company Project**: To more fully utilize the theories examined in the course, you are required to analyze the information security infrastructure of some company of your own choosing. The analysis is to center on the same issues which we have discussed in the course, but in much more detail. I suggest that you use a company that you are very familiar with, such as one you have/are co-oping with, or one by whom you wish to be employed. If you do not have a suitable company, I will work to set you up with a non-profit organization. Research where their security is now (baseline), what their future direction is, and what they are doing to move their policies in that direction. If you have specific recommendations to improve their security, incorporate those suggestions into the paper, as well. I expect that you will interview the appropriate IT officials within the company. Try to limit your contact time with them as their time is usually very limited. Three or four visits to the site to interview managers should cover the data you will need. Go armed with questions and issues to facilitate the discussions. You must work into the paper the theories covered in class, text materials, etc. to receive superior credit for the project. There may be a bibliography at the end of the paper but citations are required. The minimum page limit for this assignment is 12 pages, exclusive of title page, executive summary, figures, appendices, etc. Each page less than the minimum is a 10% deduction of the final grade for the project. The paper should have a title page, and must be appropriately cited, which includes any content found on the Web. You may use any citation style you like (APA, MLA, etc.) but the citations must be complete enough for me to verify whatever you cite. The paper must have at least 85% original content (meaning you wrote it). I will not accept material that is copied from existing company documents, except as cited excerpts which support specific points you are making. Utilization of such material beyond the bounds described above will be considered an attempt at plagiarism, with its associated academic penalties. Please do not end a page at the end of a section, and then begin the next section on the following page. I will start subtracting those blank pages from the total of the paper if this approach is used, with the accompanying reduction in grade. Try not to get too creative with the spacing and fonts - stick with 12 pt. Times, doublespaced with 1 inch margins all around. I will expect that the pages will be numbered and the paper will have an executive summary at the beginning. The executive summary does not count as pages in the page total. I want to see you apply critical thinking in your paper, so keep in mind the Paul-Elder model UofL has adopted as you write. Twice during the term, I will ask for milestones concerning the project. These milestones will be un-graded, and will be used to judge your progress with the project. The first milestone is a one page summary which proposes what company you are doing and some general background. The second milestone is a 1½ to 2 page summary, showing the progress from milestone one. Your final paper (and a draft, if you choose) will be submitted using Blackboard's plagiarism-prevention tool SafeAssign.
3. **Team-Based Learning**: Team-based learning will be used in this course for certain quizzes and in-class activities. Permanent teams will be formed on the first day of class. Before most chapters are covered in class, student readiness will be assessed through an individual quiz followed by the same quiz completed within your team. Performance on the team quizzes will be scaled based on peer evaluations completed at the end of the course. Formative evaluations may also be done at various points during the course so that team members understand how their teammates believe they are contributing. Peer evaluations will be based on dividing 100 points between the members of the team (excluding oneself) and then total. Strong performers may earn more than 100 points on the peer evaluation, weak performers less. The overall team quiz score for each individual will be multiplied by their earned peer assessment score (as a percentage), scaling one's final grade up or down based on the evaluation of peers. If there is a major discrepancy between the peer evaluations within a team (for example, one student's evaluations are completely inconsistent with the rest of the team), the instructor reserves the right to investigate and make a final decision as to the final peer assessment score. For more information on team-based learning, visit http://teambasedlearning.apsc.ubc.ca/ .
4. **Lateness**: No late assignments will be accepted unless agreed upon in advance by the instructor.
5. **Interviews**: The instructor reserves the right to require an interview with the student before assigning a grade for any assignment. If the student is unable to adequately explain the solution, the student will receive a zero for the assignment. Students may be selected at random or upon suspicion of cheating. Once notified, students have up to one week to schedule an interview.
6. In-class quizzes and exercises will not generally be announced in advance. Missed inclass work may not be made up without convincing reasons (such as a doctor's note) for the absence.
7. Missed exams count as zero (0) points. A make-up test is allowed only if convincing reasons (such as a doctor's note) are given for the absence. If possible, arrange in advance of test.
8. All exams may include an in-class portion and a take-home portion at the instructor's discretion.
9. All in-class quizzes and exams are closed book and closed notes unless otherwise specified.
10. Test dates are given in the TENTATIVE Schedule. Any change will be announced as far in advance as possible (usually at least one week).
11. **Attendance**: Attendance of every class is encouraged. From time to time, missing a class is inevitable. If this happens, the student is responsible for what was covered in class and obtaining class handouts. Students are expected to arrive to class on time. The instructor will also strive to start class on time. If, however, the instructor is late by more than 15 minutes, the class will stand as cancelled.
12. **Cellular Phones and Pagers**: Please ensure that all cellular phones, pagers, and other electronic devices are turned off or placed in vibrate mode before entering class. Disruptions of class will be considered inappropriate conduct.
13. Exceptions will not be granted nor grades of "Incomplete" given except in accordance with applicable University and College of Business policies.
14. **The last day to withdraw** from this course without academic penalty is July 21, 2011.
15. The schedule and procedures for grading in this course are subject to change in the event of extenuating circumstances.
16. **Student Academic Rights and Responsibilities**: "Every student is expected to be thoroughly familiar with the University’s Code of Student Rights and Responsibilities and Student Conduct which can be found in the ‘General Information’ section of [the Undergraduate Catalog].

"Every student is responsible for reading the academic policies in the Undergraduate Catalog and official announcements of the College of Business and for abiding by such regulations. Specifically, every student is responsible for knowing the grade point averages and program requirements needed for graduation. Students are encouraged to see a COB academic advisor to clarify any questions or concerns.

"Along with preparing for and attending class, each student has the responsibility to promote high academic standards. Students are expected to cooperate in all classes with faculty members to achieve an optimal learning environment. Inappropriate classroom behavior may result in the student being withdrawn from the course, and potentially assigned academic penalties. Inappropriate classroom behavior will be dealt with in the same manner as academic dishonesty.

"The COB will not tolerate academic dishonesty. The COB has a strong policy of academic discipline for action against students who commit academic dishonesty or conduct themselves inappropriately in the classroom. A proven case of academic dishonesty will normally result in the student being denied admission to or dismissed from the COB.

"Academic dishonesty is defined by the Code of Student Conduct in the Undergraduate Catalog. Its definition pertains to but is not limited to cheating, fabrication, falsification, multiple submission, plagiarism, and complicity. It is the student’s responsibility to maintain high standards of ethical conduct, intellectual integrity and to be familiar with the definition of academic dishonestly.

"As evidence of the seriousness with which the COB regards these matters, academic dishonesty allegations are handled in accordance with COB Procedures for Dealing with Academic Dishonesty." -- From University of Louisville Undergraduate Catalog., Fall 2008 - Summer 2009.

1. **Plagiarism Prevention**: "Instructors may use a range of strategies (including plagiarism prevention software at the university) to compare student works with private and public information resources in order to identify possible plagiarism and academic dishonesty. Comparisons of student works may require submitting a copy of the original work to the plagiarism-prevention service. The service may retain that copy in some circumstances." --From University of Louisville Undergraduate Catalog (Code of Student Rights and Responsibilities, Section 14), Fall 2008 - Summer 2009.
2. **CIS Faculty Statement Regarding Academic Dishonesty**: The CIS faculty take violations of the university policy on academic dishonesty seriously. Students are encouraged to review the policy and to understand the consequences of any action that is proven to be a violation of the policy.

Students are expected to do their own work when assignments and exams require individual work. For example, students may not copy the work of others, either manually or electronically, under these conditions. Further, students who allow their work to be copied by others risk violation of the academic dishonesty policy.

The CIS faculty will take full and complete action against any student who violates the academic dishonesty policy. In proven cases of violation of the policy, students may be suspended from the College of Business and Public Administration, as stipulated in the University of Louisville undergraduate and graduate catalogs. Cases of academic dishonesty will be processed in accordance with College of Business and Public Administrations procedures.

On behalf of the CIS faculty,

Rob Barker

Professor and Chair

Department of Computer Information Systems

1. **Policy on Work Restricted-Religious Holidays**: "Federal law and University policy prohibit discrimination on the basis of religious belief. It is the policy of the University of Louisville to accommodate students, faculty, and staff who observe religious work restricted holy days. Students who observe work-restricted religious holy days must be allowed to do so without jeopardizing their academic standing in any course. Faculty are obliged to accommodate students’ request(s) for adjustments in course work on the grounds of religious observance, provided that the student(s) make such request(s) in writing during the first two (2)weeks of term." -- From University of Louisville Undergraduate Catalog, Fall 2008 - Summer 2009.
2. **Americans with Disabilities Act**: "The University of Louisville is committed to providing equal opportunity for persons with disabilities. This commitment includes complying with the Americans with Disabilities Act of 1990 (ADA) and Sections 504 and 508 of the Rehabilitation Act of 1973. In addition, all of the University's websites and online courses will comply with the web page design standards established by the World Wide Web Consortium (W3C). The University of Louisville strives to maintain a barrier-free, welcoming environment for everybody.

"The ADA Coordinator, located in the Affirmative Action Office (502 852-6688), will monitor compliance and advise unit heads in meeting equal opportunity obligations. The Disability Resource Center staff (502 852-6938) will assist the University community by serving as an information resource center and coordinating support services for students with disabilities. No otherwise qualified individual with a disability shall, solely by reason of such disability, be excluded from participation in, be denied benefits of, or be subjected to discrimination in University programs. The President, Board of Trustees, Student

Government, Faculty and Staff Senates affirm the University's long standing and continuing commitment to Equal Opportunity for persons with disabilities." – From University of Louisville Undergraduate Catalog, Fall 2008 - Summer 2009.

Tentative Schedule

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Class Meeting | Topic | Reading Materials |
| Tuesday, July 05 | 1 | Introduction to Course & Chapter 1 | Chapter 1; Syllabus |
| Thursday, July 07 | 2 | Need for Security | Chapter 2 |
| Monday, July 11 | 3 | Legal, Ethical, Professional Issues | Chapter 3 |
| Tuesday, July 12 | 4 | Risk Management | Chapter 4 |
| Thursday, July 14 | 5 | Exam 1 & Group Project |  |
| Monday, July 18 | 6 | Risk Management; Planning for Security | Chapters 4 & 5 |
| Tuesday, July 19 | 7 | Security Technology | Chapter 6 |
| Thursday, July 21 | 8 | Security Technology & Special Topic | Chapter 7 |
| Monday, July 25 | 9 | Exam 2 & Group Project |  |
| Tuesday, July 26 | 10 | Cryptography | Chapter 8 |
| Thursday, July 28 | 11 | Physical Security & Implementing Information Security | Chapters 9 & 10 |
| Monday, August 01 | 12 | Security and Personnel | Chapter 11 |
| Tuesday, August 02 | 13 | Information Security Maintenance; Presentations | Chapter 12 |
| Thursday, August 04 | 14 | Presentations; Review & Next steps |  |
| Monday, August 08 | 15 | Exam 4 & Group Project |  |