Syllabi   Course Syllabi

Spring 1-2016

ITS 222E.50: Enterprise Security

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The University Of Montana - Missoula
College Of Technology
Department of Applied Computing and Electronics
Course Syllabus

ITS 222E Enterprise Security

Credits: 3
Prerequisites: ITS210 and ITS212
Last Updated: Spring 2016

Meetings:

This is an online course which does not have face-to-face meetings. New content for the week will be available to students Saturday mornings.

There is no final examination for the course though we will have a unit exam that week. Your semester project will be due on the last day of finals.

Faculty Contact:

Dianne Burke   E-mail: dianne.burke@umontana.edu
Office Hours: 1:00-2:00 p.m. Thursdays by appointment
                                                          AD-16A, Missoula College Campus
                                                          Phone and videoconferences by appt.

Please use your official UM email address for correspondence. University policy prevents staff from responding to personal email accounts (Yahoo, Hotmail, etc.)

When emailing, make sure to send email to the account I listed above. I am also a student here at UM (working on a doctorate in Education Leadership), and occasionally students will send email to my student account. I don't monitor my student account daily, and I don't want to miss important messages. One way to make sure I receive the message is to use the Quickmail interface in the upper right corner of the Moodle shell.

Description, Objectives, and Textbooks

Course Overview:

The *Enterprise Security Seminar* is designed so that you understand the critical components of network security. We will cover physical security and devices as well as software and organizational components. By the end of the course you will know the appropriate strategies to implement to prevent security breaches, and you will demonstrate this knowledge by designing a comprehensive network security plan. This course covers the material recommended as preparation for the CompTIA Security + certification examination. Students with at least a B average in the course will have the option to purchase examination vouchers through the department (which is usually around 50% of the standard 'retail' price for the exam).

As we work through the course material, you'll notice that all exercises and assignments are geared toward practical skills you'll need as a Network Manager. I consider this the capstone course for those of you working on your Network Management degree, so the orientation is heavily focused on scenarios you'll face in the real world. As you'll see, the Semester Project is a scaled-down, though comprehensive, survey of common management tasks.

As a capstone class for networking students, I expect high-quality, client-ready work from you. Treat this like a real job. Assignments have a due date and work needs to be turned in appropriately. In some of my other classes, such as ITS 210 and CSCI215e, I let you skip some assignments without penalty. In *Enterprise Security Seminar*, you should turn in every assignment and turn it in on time.

As a final note, this is not a skills class. You will not implement any security structures on routers, firewalls, servers, desktops, or mobile devices. If you are interested in honing your technical skills in security, our Network and Information Security (NIS) program could be of interest. The NIS program is a 4-course, 16-credit series where students examine security topics in depth and earn a professional certificate. Please contact me if you'd like more information on this program.

Course Objectives:

Upon completion of this course a student will:

1. Identify potential risks to your network, such as access and denial of service attacks; modification and repudiation attacks; malicious software attacks; and social engineering.

2. Understand common remote access options and components, including virtual private networks; and tunneling and point to point protocols.

3. Describe network and host-based intrusion detection mechanisms and vulnerabilities.

4. Explain the concept of hardening in relation to the OS, hardware, and applications.

5. Define the core components of physical network security and the importance of corporate security policies.

6. Understand the basic premise of cryptography and public key infrastructure.

7. Develop a comprehensive disaster recovery plan for a small business.

8. Develop a comprehensive network security plan for a small business.

Required Text:

CompTIA Security + Study Guide. Sixth Edition. 2014. Emmett Dulaney and Chuck Easttom. Published by Sybex. ISBN: 978-1-118-87507-0.

A note about the textbook: Make sure to get the sixth edition of the text, which references Exam SY0-401 on the cover. The sixth edition is a complete re-write of the book for exam 401. You cannot use earlier editions of this book, which came out in 2009 and 2011.

Course Structure, Assessment, and Grading

The text contains 12 chapters, with varying modules to help you learn the material. Across the modules, students will read the textbook material and listen to an online lecture where I will cover 'real-world' information on the subject matter. Each chapter will usually have an online reading or research assignment as well as a homework assignment.

A large component of your participation will involve the discussion forum, where you will exchange information and ideas with your classmates. You'll also work collaboratively on projects, using the discussion forum as a repository for ongoing work.

Throughout the course, students will work on a five-phase Semester Project, both collaboratively and independently. This work will commence early in the semester, and each of the five phases build upon the previous work.

Course Schedule:

Instead of following the textbook from beginning to end, I've grouped chapters into 3 units:

Unit I: Hardware and Communications

Chapter 3 – Understanding Devices and Infrastructure
Chapter 7 – Host, Data, and Application Security
Chapter 5 – Protecting Wireless Networks

Unit 2: Software Protections and Exposures

Chapter 4 – Access Control, Authentication, and Authorization
Chapter 6 – Securing the Cloud
Chapter 9 – Malware, Vulnerabilities, and Threats
Chapter 8 – Cryptography
Chapter 10 – Social Engineering and Other Foes

Unit 3: Risk Assessment, Policy, and Business Continuity

Chapter 1 – Measuring and Weighing Risk
Chapter 11 – Security Administration
Chapter 12 – Disaster Recovery and Incident Response
Chapter 2 – Monitoring and Diagnosing Networks

Evaluation Procedures:

During the semester you'll be graded in 4 areas: online participation; homework assignments; tests; and your semester project.

Grades will be assessed as follows:

Assessment:	Weight:
Discussion Forums	16.5%
Chapter Homework/Written Assignments	16.5%
Examinations	33.0%
Semester project – Comprehensive Security Plan	33.0%

Grading Scale:	Letter Grade:
90-100%	A
80-89%	B
70-79%	C
60-69%	D

Participation and Grading Criteria:

Online Participation:

This is worth 16.5% of your grade. In each unit, there will usually be a discussion topic. For full credit, I would like you to make an initial post to the forum, answering the question or discussing the issue I've presented. After everyone has made an initial post, you'll respond to the posts of three of your classmates, either asking questions or commenting on their post. The point of the forum is for you to exchange ideas and information with your fellow students. Please post in a positive, contributory manner.

Homework and written assignments:

This is also worth 16.5% of your grade. Many of the 12 chapters will have a homework assignment that is taken from the questions at the end of the chapter. The work you do on the homework assignments will be extremely helpful to you if you take the certification exam.

Most chapters will have a written assignment where I ask you to research or investigate something. Your deliverable will be a written report, suitable for turning in to your boss. In the real world you will be expected to generate written reports, and this component of your homework gives you practice in this area.

Tests:

This category is worth 33%. We'll have 3 tests worth 50 points each. Many test questions will be multiple choice, similar to your chapter review questions. As you might expect, there will also be essay questions as well as an occasional short answer. I have some sample questions with answers in the Exams section. There will be opportunities for extra credit on each exam. There is no final exam in the class. We will have our exam covering Unit 3 during finals week.

Semester Project:

This category is also worth 33% of your grade. During the semester you will put together a comprehensive security plan for a small business. This will be done in phases, 5 in all. I will provide a rough outline of the areas you should address, and you'll fill in the rest. We'll have several checkpoints during the semester to make sure you're on the right track. Detailed information on the project is in the initial Semester Project section (week 2) and in Weeks 5, 12, 13, and 15.

The first three phases of the semester projects will be done with partners You will be graded on how well you actually did on the assignment and your level of interaction/participation with your group members.

Due Dates/Times:

I use the Moodle calendar to specify due dates. Make sure to browse the calendar. I've set all of the due dates before the semester starts so you know exactly what your workload is before we begin. If there are any changes after the semester starts, I'll make sure to include that in my weekly announcements at the top of the course shell.

All exams are to be taken on the assigned date and time unless *prior* arrangements are made. Assignments are due by the indicated date and time. Late work is not accepted.

Asking Questions and Communicating with me:

I am always available to answer questions, but I would like you to use your classmates as a resource, too. I subscribe to the rule of "Ask 3, then me," which means I'd like you to check with 3 of your classmates and if none of you know the answer, then ask me. If you have a question about course content or instructions, please post to the Student Q&A forum located on the main page of the course shell. If no one in the class can answer the question after 24 hours, I'll weigh in. The guideline for posting to the Q&A

forum is this: if you'd raise your hand in class to ask the question, post it to the forum. Note that if you're reporting errors in the course shell or broken links, I'll take care of those items immediately.

Of course, questions about grades or anything concerning personal information should go straight to email. The analogy for a face-to-face class would be if you'd want to ask the question in the hall or away from other students, send an email.

I monitor the Q&A forums daily and I check email at least once a day in the evening. I will respond within 24 hours, though if I'm online I often respond immediately. Students have pretty good luck catching me online at 10:00 p.m. ☺

Additional Course Information

Naming and Submitting Assignments:

Assignments should be written using MS Word, any version. Each written assignment should contain your name and section in the upper right corner of your paper. Save and name your documents using the following convention:

Lastname Firstname ITS222 Ax.y assignment name (where Ax.y is the assignment, such as A1.1, A2.3, etc. and assignment name is the assignment name).

Students frequently contact me explaining that they uploaded the wrong assignment or need to go back and correct something. If this happens, you can go into the Moodle shell and delete your submission, then upload the corrected version. This is available to you any time before the assignment deadline.

Specification for writing assignments:

Writing assignments should use complete sentences, correct grammar, and correct spelling. At this point in your education/preparation, you should be able to write effectively. IMPORTANT: If you use any reference materials to do your assignment, include the reference. This can be a link to an online source or a regular citation to a paper reference. Give me enough information so I can verify your references.

Professionalism:

All work performed in the course should be completed in a professional manner and be of business quality. Think of this semester as a dry run for your life in the business world. In addition to doing your 'job' correctly and on time, demonstrate professionalism through your attention to detail and in particular, through your efforts in all written communications. Use complete sentences, avoid slang and texting shorthand (no lols, please), and use proper grammar. Employers often ask for writing samples or give you a writing test as part of the application/interview process, so use your assignments as an opportunity to practice this skill.

Changes to Syllabi:

I reserve the right to modify syllabi and assignments as needed based on faculty, student, and/or environmental circumstances. If changes are made to the syllabus, amended copies will be dated and made available to the class. I will make every effort to limit any changes after the start of the semester.

Online Information:

For online sections, the course is offered entirely online through UMOnline. Audiocasts will be used to supplement reading materials. An Internet connection with reasonable (DSL) bandwidth is recommended.

Class materials will generally be available at the start of each week. Expect lessons to consist of a mixture of reading material, review questions, discussion boards , audiocasts, webcasts, and research activities.

Technical support is available through http://umonline.umt.edu and by telephone at 406.243.4357 for the IT Central Help Desk and 406.243.6394 for Moodle-specific questions.

University Regulations

Academic Conduct:

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at: http://www.umt.edu/vpsa/policies/student_conduct.php

Using the Web to research materials and concepts is an integral part of learning in the twenty-first century. Studying with other students is a productive method of learning. A certain amount of collaborating on concepts with other students and using resources found on the Internet in an assignment is recommended. However, copy and paste is not acceptable. It is expected that each student will input his/her assignment into the computer, and each student must be able to explain answers to any assignment turned in. In other words, *type or write your own work, even if you collaborate with others on homework*. Collaboration on exams is strictly forbidden.

Despite this warning, I run into situations every semester where students work together and submit identical work. Please don't do this to yourself.

Plagiarism:

Plagiarism will not be tolerated. If I suspect plagiarism, I will notify both the student(s) and the department chair as I investigate the situation. Assignments involving plagiarism will receive a 0.

That said, I encourage research from a variety of sources, including discussions with your classmates. Make sure as you complete your assignments that everything is in your own words. Please don't copy material from other students. (Obviously, for projects with an assigned partner you'll turn in collaborative work.)

Disability Accommodations Policy:

Students with documented disabilities will receive appropriate accommodations in this course when requested in a timely manner. Please be prepared to provide a letter from the DSS Coordinator and a description of the requested accommodation after class or by appointment with the instructor. Please submit your requests early in the semester or even before the start of class. I want each student to succeed, and putting accommodations in place as soon as possible helps make that happen.