ITM 455 Information Security - Course Syllabus - Spring 2016

Time: Tues, 6:00-8:45 pm  
Location: MBEB 3016 & Blackboard
Class Schedule

Professor: Dr. Sharon Tabor, PhD  
Email: stabor@boisestate.edu
CISSP  
Office: MBEB 3104  
Hours: Tues: 2:30-5:30 pm, email, or appt
Phone: 426-4344

Course Description & Prerequisites
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Course Description: Increasing levels of both internal and external threats to organizational networks, computers, and data motivate the need in organizations of all sizes for:

- security policies, implemented in a cost effective and performance targeted methods
- effective identification and authentication systems with controls for both local and remote users
- secure E-business transactions and protection of digital data from hackers and denial of service attacks
- solid programming code, with fewer flaws and weaknesses in the development process
- appropriate levels of integrity and privacy of our data resources

This course provides an introductory level exploration of security issues, challenges, and technical solutions to ITM majors. Students will explore the need for and effectiveness of security policies, identify key security threats and legal issues, consider secure coding practices, and implement common security tools in hands-on lab exercises. Upon completion, the student will have a better understanding of software, computer, and network security issues and be better prepared for future roles as IT professionals in an increasingly insecure world.

Prerequisites: ITM 305/305L (IT & Network Essentials), experience with current Windows operating systems, plus familiarity with scripts, management consoles, and command line instructions.

BSU Statement of Shared Values

Boise State University upholds the following values as the foundation for a civil and nurturing environment. Campus community members and all who are part of COBE are expected to adhere to the following values.
• **Academic Excellence** – engage in our own learning and participate fully in the academic community’s pursuit of knowledge.
• **Caring** – show concern for the welfare of others.
• **Citizenship** – uphold civic virtues and duties that prescribe how we ought to behave in a self-governing community by obeying laws and policies, volunteering in the community, and staying informed on issues.
• **Fairness** – expect equality, impartiality, openness and due process by demonstrating a balanced standard of justice without reference to individual bias.
• **Respect** – treat people with dignity regardless of who they are and what they believe. A respectful person is attentive, listens well, treats others with consideration and doesn’t resort to intimidation, coercion or violence to persuade.
• **Responsibility** – take charge of our choices and actions by showing accountability and not shifting blame or taking improper credit. We will pursue excellence with diligence, perseverance, and continued improvement.
• **Trustworthiness** – demonstrate honesty in our communication and conduct while managing ourselves with integrity and reliability.

In addition to the BSU values listed above, this class will be run under the **rules of civility**, a seemingly lost art in our fast-paced, high tech/low touch world. This means we will all be polite to one another, respect each others' opinions, learn to accept and give praise, and practice a variety of elements of civilized behavior. For further information on this important aspect of your future career success, please see the website of Dr. P.M. Forni, Johns Hopkins University: [http://jhu.edu/civility](http://jhu.edu/civility).

**Instructional Method:** This class is offered in an active learning format which means students should read assigned chapters &/or view materials before class and come prepared to participate. Class meetings will include short lecture overviews, topic discussion, small group collaborative learning exercises, as well as technical hands-on labs. Lab exercises should be done in MBEB 3016 during scheduled lab periods to achieve desired results. If a lab session is missed, it is the student’s responsibility to make up the lab during open lab hours; note that some functions may not work outside our lab environment on varying computing equipment.
Learning Objectives: Upon completion of this course, each student should be able to apply conceptual knowledge and have basic technical skills to accomplish the following objectives. Note that these primary objectives relate to the overall framework that we will explore, and more detailed objectives will be noted on each session's topic notes. Listed learning objectives here & on course notes will be the foundation for course exams.

- Define and understand the scope of the security problem in today's business environment
- Recognize both business and technical issues related to computing risk, threats, and vulnerabilities
- Identify and implement sufficient security controls to enable secure commerce & communication
- Investigate defense-in-depth strategies using technologies such as access controls, intrusion detection, & firewalls
- Analyze hacking threats and attacks and determine appropriate methods to combat them
- Understand basic elements of cryptography as a defense mechanism & explore encryption systems
- Explore forensics techniques to uncover security violations or system trespass
- Develop, analyze, and implement security policies and best practices to achieve CIA (confidentiality, integrity, and availability)
- Recognize legal, social, & ethical aspects of network security, privacy, and data integrity
- Apply security concepts in assigned lab activities where you will explore and demonstrate your understanding of security best practices, technical tools and techniques to secure data on our networks, at rest, and in transit.

In addition, this course addresses the following College of Business & Economics Core Learning Objectives:

<table>
<thead>
<tr>
<th>Students in this class will learn or practice the following COBE Core Curriculum concepts, methods, and skills:</th>
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<tbody>
<tr>
<td><strong>1. Understand and apply analytical and disciplinary concepts and methods related to business and economics:</strong></td>
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<td>1.5. Information Technology Management</td>
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<td><strong>2. Communicate effectively:</strong></td>
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<tr>
<td>2.1. Communicate effectively: Write reports and documents that are clear, concise, and compelling</td>
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<tr>
<td>2.2. Communicate effectively: Give oral presentations that use effective content, organization, and delivery</td>
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<td><strong>3. Solve problems, including unstructured problems, related to business and economics</strong></td>
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<td><strong>4. Use effective teamwork and collaboration skills</strong></td>
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<td>5. Demonstrate appropriate principles of responsible business practices:</td>
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<td>5.1 Resolve issues related to Individual Responsibility (Business Ethics)</td>
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<td>5.2 Resolve issues related to Corporate Social Responsibility</td>
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<td>5.3 Resolve issues related to Leadership Responsibility (Corporate Governance)</td>
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Outcome Assessment:

Exams will measure your understanding of key security concepts, issues, technologies, and terms. Exams will be a combination of multiple-choice, short answer, and short essay covering both business and technical fundamentals of information security. Exams will be taken on lab PCs only during scheduled class time.

If you know you will miss a scheduled exam period for a valid reason (business travel, validated medical issue or other approved absence) please contact the professor and arrange to take your exam early. Note: Any content from readings, class lectures, and in-class labs/activities are viable topics for exams. Topics of key importance will be emphasized in Quizlet study decks to help prepare for exams. A cumulative take-home final/challenge lab is scheduled for this course instead of a traditional final exam.

Small Group Activities, Blog, and Labs: Both in-class and online activities will keep you engaged and contribute to learning; discussion questions will demonstrate your understanding of key concepts and how they apply in the business world, as well as share your experiences and hone your ability to defend a position. Technical lab exercises will demonstrate the use of the tools and techniques of computer and network security. Lab exercises will contribute to basic skills acquisition, but must be supplemented with independent study and practice. A weekly blog will help you stay on top of current news and security issues and share your findings with your peers. Podcasts from a variety of sources will support in-class topics.

A small group semester project demonstrates knowledge acquisition through the exploration of specific security topic or security challenge in your job or other organization. Project alternatives includes a carefully researched written research paper, or a written summary with short video demo or simulation.

Participation includes "active" attendance at class meetings and during small group activities, as well as assigned and informal online discussion and lab assignments. Peer evaluations from group activities will count as one-half of the participation points awarded in the course. Students who skip labs or other assignments will lose both the assignment points and the professor’s share of participation points. It is your job to make sure I know who you are by the end of the semester, which means attending class and being an active member of the class.

Expectations for Students: High standards of ethical student conduct and academic honesty will be expected and enforced. Students should make sure to perform individual assignments without unauthorized assistance and take care to cite references and outside sources for written work as appropriate. In particular, students should be aware that copying ideas or material from the Internet and representing them as their own constitutes plagiarism and can result in course failure. We will cover examples of correct and incorrect use of online sources early in the semester, and failure to reference sources in written work will result in a failing grade. The Student Code of Conduct, includes information on academic dishonesty and describes the reporting and the Conduct hearing processes, can be found at: http://deanofstudents.boisestate.edu/student-code-of-conduct/.
Assignments in this course are not created for "busy work," but rather to enforce key learning concepts and help you develop marketable technical skills. If you are not in attendance during an in-class activity, your name should not be included on group work.

It is not acceptable to disrupt class meetings by being late, or leaving class during lecture or discussion. A break will be scheduled at the class mid-point. Repeated absences or lateness may result in a loss of points.

**Note**, *WikiPedia is not a reliable reference for written work in this course.*

As noted above, active attendance and participation in all activities is critical for success in this course. Other suggestions for success include:

- Log in to the Blackboard™ class site regularly & review scheduled activity
- Come to class sessions and labs
- Keep up with assigned readings/podcasts/videos, and complete activities assigned
- Contribute to group activities (in-class and online)
- Communicate questions or concerns about class assignments or projects to the class forum
- Make arrangements for any exam or assignment conflicts
- Notify the professor if you require any accommodation or assistance under the ADA

**Safe computing**: As future technical professionals, it is expected that all students will apply the basic tools and protection techniques we learn about this semester to their own systems. All students accessing University networks should already be using virus protection and have current patches; additional controls include strong passwords, a personal firewall, email controls, and ethical practices. Please read and agree to the **White Hat Ethical Use Policy** linked at the bottom of this document. Submit in class, 2nd week.

**Writing Standards**: All prepared work should be typed, spell and grammar-checked and include appropriate references! We hear consistently from hiring organizations that good communication is one of the most important skills a new graduate can have. The **COBE Writing Styles Guide** lays out a set of basic writing standards that will be used across the curriculum in the College of Business and Economics, and will be the standard we use in this class. Please take the time to do your best work, as what you put your name on reflects who you are to the outside world.

All reports submitted in this class should use single-spacing, block paragraph style with double spacing between paragraphs. 20% of your grade for any writing assignment will be based on meeting the standards in the GUIDE plus any specific amendments added for our class. A current copy of the Guide is available at: [http://cobe.boisestate.edu/students/writing-styles-guide/](http://cobe.boisestate.edu/students/writing-styles-guide/) & under Course Resources on Blackboard.


**Required Readings** - see links to articles/web materials on the course schedule in Blackboard; content from these readings may appear on the exams.
Grading & Course Policies: This course will use the plus/minus grading system, following the ranges listed below. This is the estimated breakdown of points (some refinement may occur over the semester). All course activities must be completed for successful progress in the course. Lack of attendance or participation in this course will result in the student being dropped. All components of this course must be completed to receive a passing grade.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Points</th>
<th>Grade Scale</th>
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<tbody>
<tr>
<td>Exams (2)</td>
<td>200</td>
<td>A+</td>
<td>97-100</td>
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<tr>
<td>Challenge Lab/Take-Home Final</td>
<td>100</td>
<td>A</td>
<td>93-96.999</td>
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<tr>
<td>Activities &amp; In-Class</td>
<td>135</td>
<td>A-</td>
<td>90-92.999</td>
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<tr>
<td>Lab Exercises (4@50)</td>
<td>200</td>
<td>B+</td>
<td>87-89.999</td>
</tr>
<tr>
<td>Online Blog (10@10; 1 @ 25)</td>
<td>125</td>
<td>B</td>
<td>83-86.999</td>
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<tr>
<td>Semester Project</td>
<td>100</td>
<td>B-</td>
<td>80-82.999</td>
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<tr>
<td>Participation Points</td>
<td>40</td>
<td>C+</td>
<td>77-79.999</td>
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<td>C</td>
<td>73-76.999</td>
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<tr>
<td></td>
<td></td>
<td>C-</td>
<td>70-72.999</td>
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<tr>
<td>Total:</td>
<td>900</td>
<td>D+</td>
<td>67-69.999</td>
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</table>

Assignments, MakeUp Exams, & Late Submissions:

- All assignments should be completed and submitted in this class; skipping the take-home final will incur a penalty beyond the lost points.
- Assignments are due on the time/date specified, using submission instructions within Blackboard™. Late assignments will be accepted at the discretion of the professor, and reduced in value one letter grade for each day they are late unless there is a valid reason or pre-approval. Blackboard submissions should be named with your first initial, last name + assignment # (jstudent_A2); lab file answers only should be submitted.
- Exams will be taken in class during the time posted in the schedule on lab computers only. If you have a conflict with the scheduled exam date, you should arrange with the professor to take it early. Makeup exams after the schedule date are at the discretion of the professor, and only for valid reasons.
- Online discussions or blog postings may be done offline and pasted into forums, & should include summary of readings, as well links for ease of reading by all. No file attachments in the discussion or blog areas, please.

Posting of Grades: grades will be posted periodically to the class Blackboard™ site as a courtesy to assist you in tracking your cumulative points. Please bring any errors or questions to the professor's attention as soon as possible, ideally within one week of the activity. Do not wait until the last week of class and expect a positive resolution.

Feedback - two-way feedback is encouraged. Since security is a rapidly changing field, your constructive comments and suggestions for course improvement will be welcome. Examples of security issues or solutions from the workplace are always welcome contributions.
Course Technologies - this course uses a variety of tools and technologies to demonstrate security controls and activities. While the professor has made every attempt to test the technology we use, it is inevitable that some may not behave well for us, particularly with constant operating system upgrades. This is part of the reality of a career in IT, and your patience and assistance in working through the glitches is welcome.

Learning Accommodations: Students with disabilities needing accommodations to fully participate in this class should contact the Disability Resource Center (DRC). All accommodations MUST be approved through the DRC. Please stop by Administration 114, call 208-426-1583, or email DRCinfo@boisestate.edu to make an appointment with a disability specialist. To learn more about the accommodation process, visit the DRC website: http://drc.boisestate.edu. Discuss accommodation requirements with the professor early in the semester. Accommodations for some activities, such as group labs, may not be feasible.

Expectations for the Professor: Students may expect the professor to:

- Communicate requirements clearly and clarify when necessary
- Be available by email (less than 24 hour response during the week) and in person during office hours
- Assign worthwhile activities that will increase or support your learning experience
- Answer questions about activities and assignments, and provide prompt feedback
- Drop in and out of online discussions while under progress
- Be knowledgeable about subject matter presented -
  - Note: The professor does not claim to be an expert in all of the topics and technologies explored in this class, but holds both academic and professional security credentials, is active in the local security community, and is past president and board member of the local chapter of ISSA.

Important: Computer and network security flaws and tools demonstrated or discussed in this course are for illustrative and educational purposes only. Unauthorized exploitation of such flaws on campus or on any other public or private network may be considered illegal trespass and be subject to prosecution or expulsion.

Student Info & White Hat Ethics Form - Please review this student form, sign, and submit it to the professor on the first day of class.

Last updated: 1/06/2016