COURSE SYLLABUS: CPSC3555 – SELECTED TOPICS IN COMPUTER SCIENCE – SPRING 2015
SECURITY CHALLENGES

INSTRUCTOR NAME - Dr. Yeşem Peker, Aurelia Smith
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PHONE - 706 507 8187
OFFICE HOURS AND LOCATION- MWF 10AM-12:00PM  TTH 11AM-12:00PM, 1:30-2:30PM and by appointment@CCT422
MEETING TIME AND PLACE – MW 12:00-12:40PM (course ends on March 22, 2015)

COURSE INFORMATION

COURSE CRN NUMBER/TITLE CPSC3555 – Selected Topics in Computer Science – Security Challenges (CRN 23234)
CREDIT HOURS/PREREQUISITES (1 credits). CPSC 2108 with a grade of "C" or better

COURSE DESCRIPTION: Students will learn about security concerns in computer systems and become familiar with tools to test and defend a computer system. Focus of the course will be hands-on activities.

TEXTBOOK AND MATERIALS
Penetration Testing by Georgia Weidman, ISBN: 978-1-59327-564-8

LEARNING OUTCOMES

Course Objective: Upon completion of this course, students will
• demonstrate basic skills in using shell and networking commands/tools in platforms such as Linux and Windows
• demonstrate an understanding of fundamental concepts of computer and network security
• demonstrate basic skills in defending a computer against a variety of security attacks
• apply critical thinking skills in attacking and defending a computer and/or network of computers

COURSE LEARNING OUTCOMES
• Students will demonstrate knowledge of basic shell and networking commands in linux and windows cmd line.
  o Strategies and Actions used to produce the outcome:
    ▪ Study the relevant material from the textbook
    ▪ Completing relevant labs
  o Program Objectives covered: 2
  o Assessment Methods: In class activities, demonstrations ,labs

• Students will demonstrate basic knowledge of attacks to a computer and/or to a network of computers and apply critical thinking skills to attack computers in a restricted environment
  o Strategies and Actions used to produce the outcome:
    ▪ Study the relevant material from the provided resources
    ▪ Completing the relevant labs
Program Objectives covered: 2,3,4
Assessment Methods: In class activities, demonstrations, labs

- Students will demonstrate basic knowledge of defending a computer and a network of computers and apply critical thinking skills to defend computers in a restricted environment
  - Strategies and Actions used to produce the outcome:
    - Study the relevant material from the provided resources
    - Completing the relevant labs
  - Program Objectives covered: 2,3
  - Assessment Methods: In class activities, demonstrations, labs

CS Program Objectives:
Our graduates will have achieved:
1) A broad general education assuring an adequate foundation in science and mathematics relevant to computing.
2) A solid understanding of concepts fundamental to the discipline of computer science.
3) Good analytic, design, and implementation skills required to formulate and solve computing problems.
4) The ability to function and communicate effectively as ethically and socially responsible computer science professionals.

COURSE ASSESSMENT
LEARNING ACTIVITIES
1. The class will meet for one seventy-five-minute lecture/discussion period each week. Class times will focus on the readings that need to be completed before class.
2. Each student is expected to attend all class lectures, to read the textbook chapters and to make notes. Students will be expected to participate in classroom discussions, both in class and online. This means you MUST read the book before coming to class. Each class will have a hands-on activity to assess your understanding from the readings and practical assignments (labs).
3. Students must have access to computers for doing assignments.
4. The ACM recommends the following: “As a general guideline, the amount of out-of-class work is approximately three times the in-class time. Thus, a unit that is listed as requiring 3 hours typically entails a total of 12 hours (3 in class and 9 outside).” Students will be expected to spend this time outside class reading the book, online materials and other materials; writing solutions to homework exercises and programming projects.

COURSE EVALUATION

<table>
<thead>
<tr>
<th>GRADED LEARNING ACTIVITIES</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly lab assignments</td>
<td>30</td>
</tr>
<tr>
<td>In class assessments (demonstration of the weekly assigned tutorials)</td>
<td>30</td>
</tr>
<tr>
<td>In class labs</td>
<td>30</td>
</tr>
</tbody>
</table>
Participation (not just attendance!)  

<table>
<thead>
<tr>
<th>Participation</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>100</td>
</tr>
</tbody>
</table>

**Note:** For every class you miss, you will be assessed a penalty of **2 points** out of 100. You may be dropped from the course for more than **four (4)** absences. (Read the Course Attendance Policy below for details.)

**From the Study Guide:** “Study actively. Ask yourself questions, review your notes regularly, create concept maps, and discuss key concepts with peers and your instructor. **FACT:** Association is a key to memory and cognitive research has shown that you will remember 10 percent of what you read, 20 percent of what you hear, 30 percent of what you see, 50 percent of what you hear and see together, 70 percent of what you say, and 90 percent of what you do!”

Course grades will be assigned according to the following scale:

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Final Grade</th>
<th>Criteria</th>
</tr>
</thead>
</table>
| 90-100%          | A           | • fulfills or exceeds all of the assigned content requirements.  
                   |             | • knowledge of the subject is accurate throughout  
                   |             | • exhibits convincing range and quality of knowledge, having done appropriate research, if applicable. |
| 80-89%           | B           | • fulfills all of the important assigned content requirements  
                   |             | • knowledge of the subject is accurate throughout except in minor details.  
                   |             | • seems informed on the subject, having done appropriate research, if applicable |
| 70-79%           | C           | • fulfills most of the important assigned content requirements.  
                   |             | • knowledge of the subject is generally accurate, though flawed  
                   |             | • exhibits limited range or quality of knowledge, having done limited appropriate research, if applicable. |
| 60-69%           | D           | • fulfills some of the important assigned content requirements  
                   |             | • knowledge of the subject is generally accurate, though flawed  
                   |             | • exhibits limited range or quality of knowledge, having done minimal appropriate research, if applicable. |
| 59% and below    | F           | • fails to address the important requirements of the course.  
                   |             | • knowledge of the subject is generally inaccurate and/or lacks range or quality |
ADMINISTRATIVE POLICIES AND ACADEMIC RESOURCES

CSU DISABILITY POLICY
If you have a documented disability as described by the Americans with Disabilities Act (ADA) and the Rehabilitation Act of 1973, Section 504, you may be eligible to receive accommodations to assist in programmatic and/or physical accessibility. We recommend that you contact the Office of Disability Services located in Schuster Student Success Center, Room 221, 706-507-8755 as soon as possible. Students taking online courses can contact the Office of Disability services at http://disability.columbusstate.edu/. The Office of Disability Services can assist you in formulating a reasonable accommodation plan and in providing support. Course requirements will not be waived but accommodations may be able to assist you to meet the requirements. Technical support may also be available to meet your specific need.

ACADEMIC INTEGRITY
All students are expected to recognize and uphold standards of intellectual and academic integrity. As a basic and minimum standard of conduct in academic matters that students be honest and that they submit for credit only the products of their own efforts. Both the ideals of scholarship and the need for fairness require that all dishonest work be rejected as a basis for academic credit. They also require that students refrain from any and all forms of dishonorable or unethical conduct related to their academic work.

Students are expected to comply with the provisions of Section III, "Student Responsibilities," of the Columbus State University Student Handbook. This specifically includes the sections on "Academic Irregularity," and "Conduct Irregularity." In particular, the Columbus State University Student Handbook states:

“No student shall give or receive assistance in the preparation of any assignment, essay, laboratory report, or examination to be submitted as a requirement for any academic course in such a way that the submitted work can no longer be considered the personal effort of the student submitting the work.”

Examples of Academic Dishonesty include but are not limited to: Plagiarism (see definition below), giving or receiving unauthorized assistance on exams, quizzes, class assignments or projects, unauthorized collaboration, multiple submissions (in whole or part) of work that has been previously submitted for credit.

Plagiarism is any attempt to represent the work or ideas of someone else as your own. This includes purchasing or obtaining papers from any person and turning them in as your own. It also includes the use of paraphrases or quotes from a published source without properly citing the source. All written assignments may be submitted for textual similarity review to Turnitin.com for the detection of plagiarism.

Please be aware that anyone caught cheating or plagiarizing in this class will receive a “0” for the assignment/exam and may receive a “0” for the course.

STUDENT COMPLAINT PROCESS
Information and resources for student complaints and academic appeals are located at the following link on the Columbus State University website http://aa.columbusstate.edu/appeals/.

COURSE ATTENDANCE POLICY
Class attendance is the responsibility of the student, and it is the student's responsibility to independently cover any materials missed. Class attendance and participation may also be used in determining grades. It is your responsibility to sign a roll sheet for every class meeting. For every class you miss, you will be assessed a penalty of 2 points out of 100. At my discretion, I may drop you from the course for more than four (4) absences. Missing an exam or assignment is considered an absence. Missed classes caused by participation in documented, formal, University-sponsored events will not count as absences provided you notify me of such anticipated absences in advance and as soon as possible.
You are responsible for all class work missed, regardless of the reason for the absence(s). Late assignments will not be accepted, so if you are absent on the day an assignment is due, it is your responsibility to make alternate arrangements. No makeup exams or in-class assignments will be given, so please make sure you are present for all exams/in-class assignments. Refer to the CSU Catalog (http://ace.columbusstate.edu/advising/a.php#AttendancePolicy) for more information on class attendance and withdrawal.

Electronic Devices and Academic Integrity: All cell phones and pagers must be turned off prior to entering the classroom or lab. The use of any electronic device during a test or quiz is prohibited. This includes cell phones, handheld calculators, iPhones, Android phones, PalmPilots, Blackberrys, PocketPCs, and laptops. Any use of such a device during a test or quiz will be considered a breach of academic integrity.

TECHNICAL RESOURCES

HARDWARE REQUIREMENTS
How do I know if my computer will work with D2L?

SOFTWARE REQUIREMENTS
An- office suite such as Microsoft Office or Open Office
- To open PDF files you might need Acrobat Reader
- Browser Plugins (Pdf files, QuickTime files, Mp4 files) can be usually be obtained at the browsers website.
  
  Google Chrome
  Firefox
  Safari
  Internet Explorer (Caution: IE is often problematic for D2L-CougarVIEW)

If you need technical support or need assistance configuring your computer, you can refer to the link located in the "Support Resources" widget located on your "My Home" and your "Course Home" pages. If you cannot solve your problem after reviewing the knowledge base help pages, you can call help center 24-7 and talk to a Help Center agent. The number is 1-855-772-0423.

How to Access the Course

You can access the course through CougarView at: http://colstate.view.usg.edu/
Use your school credentials to access the site. If CougarView will not let you in, visit the GeorgiaVIEW D2L Help Center or call the CSU Help Desk at 706-507-8199. If you are still having problems gaining access a day or so after the class begins, please e-mail me immediately.

Once you've entered CougarView, you will see a list of courses you have access to. The CPSC 3555 course is listed as "Selected Topics in Computer Science". Next to this, you should see my name as the instructor. You may also see new discussion postings, new calendar postings, and new mail messages. Clicking on the name of the course will take you to the course's home page. If you do not see the "Selected Topics in Computer Science" course in the list, please e-mail me immediately.

Once you have clicked on the course's name and accessed the particular course itself, you will find a home page with links to other sections and tools, and a menu on the left-hand side. Feel free to explore the areas in the course.

It is your responsibility to frequently look at the course site in CougarView to keep your knowledge of class activities current. I may occasionally forget to announce details in class, but they may have been already posted in CougarView. If so, you will still be held responsible for them. For example, assignment due dates, corrections of errors, announcements, exam dates, changes to policies, and so on.

Getting help
Student assistants in the public Computer Center labs / Library can help you with basic computer-related problems such
as logging on to the network, saving your work, etc., but they are not obligated to help you with your assignments. There are several tutors in the School of Computer Science lab (CCT450) who can help you with the assignments. Their schedule is posted in the Computer Science School. You can always contact me during my posted office hours, by e-mail, or by appointment.

**University Writing Center (UWC)** Students can receive free academic support from the University Writing Center (UWC). UWC offers peer consultations on writing across the curriculum. For more information, call 706-568-2483, visit http://writingcenter.columbusstate.edu/index.php, or visit https://ace.columbusstate.edu/tutorialservices.php.

**Discussion Etiquette**
CSU is committed to open, frank, and insightful dialogue in all of its courses. Diversity has many manifestations, including diversity of thought, opinion, and values. Students are encouraged to be respectful of that diversity and to refrain from inappropriate commentary. Should such inappropriate comments occur, I will intervene as I monitor the dialogue in the discussions. I will request that inappropriate content be removed from the discussion and will recommend university disciplinary action if deemed appropriate. Students as well as faculty should be guided by common sense and basic etiquette. The following are good guidelines to follow:

- Never post, transmit, promote, or distribute content that is known to be illegal.
- Never post harassing, threatening, or embarrassing comments.
- If you disagree with someone, respond to the subject, not the person.

Never post content that is harmful, abusive; racially, ethnically, or religiously offensive; vulgar; sexually explicit; or otherwise potentially offensive.

**Student Responsibilities**
As a student in this course, you are responsible to:
- manage your time and maintain the discipline required to meet the course requirements,
- come to class prepared to ask questions to maximize your understanding of the material,
- complete all readings,
- complete all assignments,
- complete all quizzes and exams,
- actively participate in discussions,
- read any e-mail sent by the instructor and respond accordingly.

“I didn’t know” is **NOT** an acceptable excuse for failing to meet the course requirements. If you fail to meet your responsibilities, you do so at your own risk.

**Instructor Responsibilities**
As your instructor in this course, I am responsible to:
- lead the class discussion and answer students’ questions,
- post weekly lessons outlining the assignments for the week,
- read all responses to discussion questions and comments to responses,
- actively participate in discussions when necessary,
- grade assignments, quizzes, and exams, and post scores within one week of the end of the week in which they are submitted, and
- read any e-mail sent by the you and respond accordingly within 48 hours.

Although I will read every posted discussion question and response, I will not necessarily respond to every post.
**Student Portfolio**

Students are encouraged to keep and maintain a portfolio of all of their work (assignments, projects, etc.) throughout their academic program. It is recommended that you keep a copy on your personal H: drive at CSU and back it up regularly on your own portable media or in the cloud.
<table>
<thead>
<tr>
<th>WEEK</th>
<th>DATE</th>
<th>TOPIC</th>
<th>READING/ASSIGNMENT/LAB</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan. 12-18</td>
<td>Introduction to the course</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Installing machines in VMWare</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Jan. 19-25</td>
<td>Linux</td>
<td>SANS Cyber Aces Linux Tutorial</td>
</tr>
<tr>
<td>3</td>
<td>Jan. 26-Feb. 1</td>
<td>Windows</td>
<td>SANS Cyber Aces Linux Tutorial</td>
</tr>
<tr>
<td>4</td>
<td>Feb. 2-8</td>
<td>CSSIA Security+ Labs</td>
<td>SANS Cyber Aces Networking Tutorial CSSIA Security+ Labs</td>
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<tr>
<td>5</td>
<td>Feb. 9-15</td>
<td>NICE Challenge Project</td>
<td>SANS Cyber Aces Web Scripting Tutorial CSSIA Security+ Labs</td>
</tr>
<tr>
<td>6</td>
<td>Feb. 16-22</td>
<td>SECCDC Team Packet CSSIA Security+ Labs</td>
<td>SANS Cyber Aces Bash and PowerShell Tutorial NICE Challenge Project</td>
</tr>
<tr>
<td>7</td>
<td>Feb. 23-Mar. 1</td>
<td>NICE Challenge Project</td>
<td>NICE Challenge Project</td>
</tr>
<tr>
<td>8</td>
<td>Mar. 2-8</td>
<td>SECCDC Preliminary Qualification</td>
<td>NICE Challenge Project</td>
</tr>
<tr>
<td>9</td>
<td>Mar. 9-15</td>
<td>NICE Challenge Project</td>
<td>CSSIA Security+ Labs</td>
</tr>
<tr>
<td>10</td>
<td>Mar. 16-22</td>
<td>CSSIA Ethical Hacking Labs</td>
<td>CSSIA Ethical Hacking Labs</td>
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<tr>
<td>11</td>
<td>Mar. 23 – 29</td>
<td>Spring Break – Class ends</td>
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ACM Code of Ethics and Professional Conduct

**THE CODE** represents ACM’s commitment to promoting the highest professional and ethical standards, and makes it incumbent on all ACM Members to:

- Contribute to society and human well-being.
- Avoid harm to others.
- Be honest and trustworthy.
- Be fair and take action not to discriminate.
- Honor property rights including copyrights and patent.
- Give proper credit for intellectual property.
- Respect the privacy of others.
- Honor confidentiality.

And as computing professionals, every ACM Member is also expected to:

- Strive to achieve the highest quality, effectiveness and dignity in both the process and products of professional work.
- Acquire and maintain professional competence.
- Know and respect existing laws pertaining to professional work.
- Accept and provide appropriate professional review.
- Give comprehensive and thorough evaluations of computer systems and their impacts, including analysis of possible risks.
- Honor contracts, agreements, and assigned responsibilities.
- Improve public understanding of computing and its consequences.
- Access computing and communication resources only when authorized to do so.

This flyer shows an abridged version of the ACM Code of Ethics. The complete version can be viewed at: [www.acm.org/constitution/code](http://www.acm.org/constitution/code)
Please return the following information to me at the next class meeting.

Computer Security Class Student Agreement

- I understand that I am taking a class that will teach me computer access techniques that can be used to break into, damage or otherwise alter ("hack") computer systems. I also understand that it is the purpose of the class that this knowledge be used to protect information resources and not to compromise or destroy them or otherwise break any laws or disrupt educational, commercial or other activities. Any access to a system without the administrator/owners permission is illegal.

- The following actions are clearly not ethical:
  - Breaking into a computer system without the permission of the owner or administrator of that computer system.
  - Doing anything that substantially interferes with other user's access to computer-based services (i.e., denial of service attacks).
  - Accessing computer-based information without appropriate authorization.
  - Accessing any computer-based service without appropriate authorization.
  - Unauthorized monitoring of electronic communication.

- I agree that I will not damage, disrupt or access any computer systems or other students work during this class. I also understand that I will be expected to work with other students to test security, but I agree that it will always be done with their knowledge. I addition I will not destroy or damage their work and will let them know what I have accessed on their system. I will cease accessing their system when asked.

- When in doubt, ask your instructor.

- I understand that if I cannot accept these terms, I can drop the class with no academic penalty. Once accepted, their violation entitles the class administrator to administer disciplinary consequences, which may include an 'F' in this course and reporting to university authorities, if I fail to abide by these agreements.

Name (printed): ___________________________ Class: ___________________________

Name (signature): ___________________________ Date: ___________________________

Please return the following information to me at the next class meeting.

CPSC 3555 (CRN 23234) SPRING 2015

Student’s name: _______________________________ (please print)

High School attended: _______________________________

Where can I reach you in case it becomes necessary? **

Email address that you use regularly: _______________________________

Phone number(s): _______________________________

Declaration: I have read, understood and agree to abide by the policies mentioned in the syllabus pertaining to the course. In particular, I agree to abide by the assignment policy/late work policy, attendance policy, academic dishonesty policy, website policy and exam policy.

(You must sign and date below).

Signature: _______________________________ Date: __________________

** Optional information
CPSC 3555 SECURITY CHALLENGES - DURATION OF COURSE AGREEMENT

I understand that the course CPSC3555 – Security Challenges will end on March 22, 2015 and I am responsible for all the material covered in class; work assigned for the course, and all exams/quizzes until March 22, 2015.

Today’s Date:

Student Name:

Student Id:

Student Signature: