Program Syllabus Y100300 Applied Cybersecurity

CTS0018 Cybersecurity Associate
CTS0089 Information Security Administrator

General Course Information

Instructor: William Kratzer
Office: Cybersecurity Classroom
Office Hours: 8:00 a.m. – 3:00 p.m. Mon – Thurs, Fridays by Appointment
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Classroom: Building 5-002 Marion Technical Institute: Cybersecurity Lab
Class Times: 8:00 a.m. – 3:00 p.m. Mon – Thurs

Course Perquisites

CTS0059 or Equivalent Knowledge demonstrate by Testing

Course Description

This course covers and reinforces all of fundamentals of basic networking and network security that students have previously learned in the Technology Support Services training. It provides students with a solid understanding of security principles related to malware and social engineering attacks, the various types of application and network attacks, basic and advanced cryptography,
business continuity and risk mitigation. It teaches all of the necessary objectives for passing the CompTIA Security+ certification.

Along with this course, the students will be simultaneously trained for the CompTIA Network+ certification. During the Technology Support Services training, the students received over 60% of the training they need to pass the Network+ certification. The Network+ training during this phase will reinforce what has already been learned and provide students with the technical skills and industry know-how required for installing, configuring, and troubleshooting computer networks.

**Course Objectives**

This course provides an introduction to the fundamentals of network security, including compliance and operational security; threats and vulnerabilities; application, data, and host security; access control and identity management; and cryptography. The course covers new topics in networking and network security as well, including psychological approaches to social engineering attacks, Web application attacks, penetration testing, data loss prevention, cloud computing security, and application programming development security. Students will also engage in activities that link to the Information Security Community Site.

**Course Content**

Specific topic coverage for the Security + includes:

**Security and Its Threats**
1. Introduction to Security
2. Malware and Social Engineering Attacks

**Cryptography**
3. Basic Cryptography
4. Advanced Cryptography and PKI

**Network Attacks and Defenses**
5. Networking and Server Attacks
6. Administering a Secure Network
7. Network Security Fundamentals
8. Wireless Network Security

**Device Security**
9. Client and Application Security
10. Mobile and Embedded Device Security
Identity and Access Management
11. Authentication and Account Management
12. Access Management

Risk Management
13. Vulnerability Assessment and Data Security
14. Business Continuity
15. Risk Mitigation

Specific topic coverage for the Network + includes:

1. Introduction to Networking
2. How Computers Find Each Other on Networks
3. How Data is Transported Over Networks
4. Structured Cabling and Networking Elements
5. Network Cabling
6. Wireless Networking
7. Cloud Computing and Remote Access
8. Network Risk Management
9. Unified Communications and Network Performance Management
10. Network Segmentation and Virtualization
11. Wide Area Networks
12. Industrial and Enterprise Networking

Specific topic coverage for the Information Security Administrator includes:

1. Instructor provided Material on Information Security Administration
2. Advanced research topics in applied cybersecurity
3. Security Analysis and Hardening Exercises

Additional special topics are provided by the instructor to enhance and solidify understanding of the topics listed above. Students will learn to conduct effective Internet research to find various technical and security resources. Critical and analytical thinking is emphasized.

Course Textbook and Materials


Instructor provided materials and notes for Information Security Administrator

Minimum 500GB USB external hard drive is recommended for the storage of instructor-provided course material and virtual machines.

The student should have a personal computer or access to a personal computer to complete various homework assignments

Notebook, pencils and pens for note taking

**Grading Criteria and Scale**

Throughout the course students will be given quizzes on the lecture material. There will be a Midterm and Final Exam. The average of all quizzes and homework, combined with the grades from the midterm and final will comprise the final course grade. The grading scale is as follows:

<table>
<thead>
<tr>
<th>Grading Scale</th>
<th>Grade</th>
<th>Percentage of Final Grade</th>
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</thead>
<tbody>
<tr>
<td>90 - 100%</td>
<td>A</td>
<td>Quizzes 10%</td>
</tr>
<tr>
<td>80 - 89%</td>
<td>B</td>
<td>Midterm Exam 40%</td>
</tr>
<tr>
<td>70 - 79%</td>
<td>C</td>
<td>Final Exam 40%</td>
</tr>
<tr>
<td>60 - 69%</td>
<td>D</td>
<td>Homework 10%</td>
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<tr>
<td>0 - 59%</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
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Course Policies

Mobile phones, iPods and other electronic devices will be turned off or put on silent during course lectures.

Students who are going to be late or absent should notify the instructor by a phone call, text message or email. Failure to give proper notification may result in a zero being given for any quizzes that make take place on that day. With the proper notification you will be allow to take a make-up quiz.

All homework is due on the assigned date. Failure to turn in the required assignment will result in a zero for that assignment. The instructor realizes that there can be certain occurrences that may prevent a student from completing the assignment. Should this happen the instructor will evaluate each case to determine if the student will be allowed to make up the assignment. Again, effective communication with the instructor is necessary.

Behavioral Expectations

Take responsibility for your education.

Instructors are here to create a learning environment – whether or not you learn depends on your willingness to listen, ask appropriate questions, and do the work necessary to pass the course.

Attend class

Students who attend class, listen to the instructor, ask questions, and take good notes are more likely to pass with a higher grade. If you must miss a class, contact your instructor ahead of time to let him or her know that you will not be in class. DO NOT ask the instructor to repeat material you missed because you skipped a class.

Be on time

Walking in late disturbs everyone. At this college and many places of employment, tardiness communicates lack of interest and lack of dependability. If you cannot avoid being late, make sure to be unobtrusive about your entry.

Come to class prepared – turn your work in on time

Complete assigned reading before coming to class. Make sure to bring common classroom supplies such as a pencil, paper, textbook, test materials, etc. along with completed homework. Students
who attempt to complete their assigned homework in classroom at the last minute often earn lower grades and are more likely to miss deadlines.

Do not get up and walk out halfway through the class

It disturbs people and gives the unmistakable impression that you don’t respect the class, the other students or the instructor. The instructor has the right to finish his or her thought at the end of the class period and conclude the class in an orderly fashion without people standing up and walking out.

Unpack before class / pack after

The sound of zippers on backpacks along with the rustling of papers and/or jackets also disrupts the classroom and indicates lack of respect.

Ask appropriate questions

It’s good to ask questions and make comments, but keep them related to the discussion at hand. Dominating class time with too many questions or comments prohibits other students from participating in discussions.

Practice common courtesy

• Remember that in college, as in every other area of life, politeness and respect count.
• Do not have private conversations with your neighbors during class.
• Turn off cell phones and beepers. The noise is distracting to other students.
• Respect all opinions. Others may have different ideas and opinions, they may ask questions that you perceive to be “stupid,” but they deserve the same level of respect from you as you wish from them.

Respect your instructor

Openly challenging the instructor’s knowledge or authority in the classroom is improper. If you have differences with your instructor’s information or teaching methods, you may want to discuss your issues with the instructor outside of the classroom in a non-confrontational manner.

Academic Integrity

MTC expects students to understand and to follow basic standards of honesty and integrity. Some common violations of these basic standards of academic integrity include but are not limited to, plagiarism, cheating on tests and examinations, presenting work completed for one course as original work for another, and other forms of dishonest performance on assignments, as explained below.
Plagiarism means the use of the thoughts, ideas, words, phrases or research of another person or source as one's own without explicit and accurate credit to the original author.

Cheating on examinations of any kind (quizzes, midterms, finals, etc.) includes copying another student's answers, exchanging information, using notes or books unless expressly permitted to do so by the instructor, or gaining access to examinations prior to the actual taking of such examinations.

Other examples of academic dishonesty include, but are not limited to, copying or preparing another person's work; or buying prepared papers.

Assisting anyone to engage in any of the violations described above qualifies as academic dishonesty.

**ANY VIOLATION OF THE ABOVE STANDARDS WILL RESULT IN DISCIPLINARY ACTION BEING TAKEN AGAINST THE STUDENT.**