

**Columbus State Community College**

**Workforce Innovation Information Technology**

**Course Syllabus**

**Fall Semester 2018 - Cohort 1**

**COURSE: WIIT-7420 — CyberSecurity Fundamentals II**

# Faculty Information

**Instructor Name:** Mr. Kent King, Mr. Tim Oroszi **Email**: [kking83@cscc.edu](mailto:kking83@cscc.edu)

**Office:** **Phone:**

**Office Hours:**

**CLASS MEETS: Tuesday at**

**PREREQUISITES:** WIIT-7410 Cyber I

**DESCRIPTION OF COURSE:**

WIIT-7420 completes the SSCP field of study for students to learn foundational cyber security concepts, terminology and implementation. Students will learn the practical knowledge and skills necessary to become comfortable with basic concepts, technologies, risks and controls. This course prepares the student for the Systems Security Certified Practitioner (SSCP) certification from ISC2. The course of study will focus on a Common Body of Knowledge including:

* Cryptography
* Systems and Applications Security
* Fundamentals of Physical Security

Students will take an active part in the course by applying hands-on knowledge completing various quizzes and assignments.

**STUDENT LEARNING OUTCOMES**

*Upon successful completion of this course, the student should be able to:*

* Describe basic cryptographic systems; e.g., symmetric vs. asymmetric algorithms
* Identify the uses and principles of public key cryptography
* Evaluate the risks and challenges of crypto-key management
* Outline secure network protocols: SSL, TLS, HTTPS, etc.
* Demonstrate concepts of secure software development and OWASP
* Discuss the Software Development Lifecycle (SDLC)
* Explain code signing
* Assess malicious software risks and mitigation
* Critique methods of detecting and preventing malicious software
* Discuss physical security systems and the integration with online security tools

**COURSE MATERIALS REQUIRED**

**Access to CSCC online materials**

**TEXTBOOK**

**Required Digital Text:** **TDB**

**GENERAL INSTRUCTIONAL METHODS**

**ASSESSMENT**

Columbus State Community College is committed to assessment (measurement) of student achievement of academic outcomes. This process addresses the issues of what you need to learn in your program of study and if you are learning what you need to learn. The assessment program at Columbus State has four specific and interrelated purposes: (1) to improve student academic achievements; (2) to improve teaching strategies; (3) to document successes and identify opportunities for program improvement; (4) to provide evidence for institutional effectiveness. In class you are assessed and graded on your achievement of the outcomes for this course. Students will receive a letter grade of either P - Pass, or, F - Fail in the course. Students must obtain 70% or higher to pass the course with a letter grade of “P”.

**STANDARDS AND METHODS FOR EVALUATION**

**Tests and lab exercises will have the following weights:**

|  |  |
| --- | --- |
| **Item** | **Points** |
| Online Quizzes | 100 |
| Assignments 2@25 pts ea | 50 |
| SSCP Sample Test | 50 |
| **Total Points** | **200** |

**GRADING SCALE**

|  |  |  |
| --- | --- | --- |
| **Points** | **Percentage** | **Grade** |
| 140 – 200 points | 70 - 100% | P |
| 000 – 139 points | 0 – 69% | F |

**SPECIAL COURSE REQUIREMENTS**

**Attendance Policy**

Frequent attendance is a must for a successful student. Students are expected to attend and prepare for each class by reading and studying the course assignments in advance of scheduled classes.

**Assignment Policy**

Assignments are expected to be completed in a timely manner and students are expected to work on these assignments outside of the regularly scheduled class hours.

**Due dates for online quizzes and assignments are listed on the course syllabus.**

**Final Exam**

The Final Exam will be an online sample SSCP certification test. While the sample test will not be scored as part of the course, students are strongly encouraged to take the test “closed book”. This will provide the student with valuable information for areas of study to better insure passing the SSCP.

**Course Email Statement:** <https://mail.cscc.edu/student/index.html>

Check your CSCC email regularly. Your instructor will send course information, give updates, or answer questions through your CSCC email. Students are expected to use their CSCC student email account when communicating with your instructor, not your personal email account.

**INCLEMENT WEATHER OR OTHER EMERGENCIES**

In the event of severe weather or other emergencies that could force the college to close or to cancel classes, such information will be broadcast on radio stations and television stations. Students who reside in areas that fall under a Level III emergency should not attempt to drive to the college even if the college remains open.

Assignments due on a day the college is closed will be due the next scheduled class period. If an examination is scheduled for a day the campus is closed, the examination will be given on the next class day. If a laboratory is scheduled on the day the campus is closed, it will be made up at the next scheduled laboratory class. If necessary, laboratory make-up may be held on a Saturday.

Students who miss a class because of weather-related problems with the class is held as scheduled are responsible for reading and other assignments as indicated in the syllabus. Remember! It is the student’s responsibility to keep up with reading and other assignments when a scheduled class does not meet, whatever the reason.

In the event the college is forced to close during Final Examination Week, exams scheduled for the first missed date will be rescheduled for the next day, in the same location at the same time scheduled. Exams scheduled for a second missed date will be rescheduled.

**Campus Closings/Holidays**

* Tuesday, August 14, 2018 – Fall Semester Cohort 1 2018 Begins
* Monday, Sep 3, 2018 – ***Labor Day (Campuses Closed)***
* Monday, November 12 – ***Veteran’s Day (Campuses Closed)***
* November 21-25, 2018 – ***Thanksgiving Holiday (Campuses Closed)***
* Tuesday, December 4, 2018 – Fall Semester Cohort 1 2018 Ends

**UNITS OF INSTRUCTION**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **WEEK #** | **UNIT OF INSTRUCTION** | **LEARNING OBJECTIVES/GOALS** | **ASSESSMENT METHODS** | **ASSIGNMENTS** | **DUE DATE** |
| **1** | Cryptography | Understand basic cryptography terms and concepts. Describe the difference between symmetric and asymmetric algorithms. Explain public-key cryptography, keys and digital certificates. Understand and describe key management risks and mitigations. Understand key generation and key storage solutions. Describe digital signatures, assurance and non-repudiation. Explain how cryptography works in real-world applications: email, SSL and TLS. Describe basic cryptanalysis methods. | Online quiz | **Lesson 1: SSCP Cryptography**  Assignment 1 – Digital certificate analysis | **Quiz responses due 11/5/18**  **Assignment due 11/7/18** |
| **2** | Systems & Application Security | Review cryptography materials. Understand security monitoring and logging. Discuss detection and monitoring tools, including host and network sensors and intrusion prevention systems (IPS). Describe vulnerability and penetration testing methodologies. | Online quiz |  | **Quiz responses due 11/12/18** |
| **3** | Systems & Application Security | Understand types of software: open source, commercial off-the-shelf (COTS) and software as a service (SaaS). Describe the software development lifecycle (SLDC) and the role of OWASP. Understand how malicious code leverages software weaknesses and poor design. Review types of malware and malware prevention. | Online quiz | **Lesson 3: SSCP Systems & Application Security**  Assignment 2 – Through online research, find a recently announced vulnerability and be prepared to describe the impact and mitigation strategy. | **Quiz responses due 11/26/18**  **Assignment due 11/28/18** |
| **4** | Physical Security & SSCP Review | Share vulnerabilities and discuss with the class. Describe fundamental physical security systems including locks, lighting, cameras and motion detection. Prepare for and discuss the sample SSCP test. |  | **Sample SSCP Exam** | **Test completed by 12/2/18** |
| **5** | Conclusion & Wrap Up | Review and discuss sample test results, identify strengths and weaknesses. Understand testing strategies. Learn how the SSCP and other certifications will fit into a cybersecurity career. Discuss additional cybersecurity opportunities at CSCC. |  |  |  |