

CSSS - Cybersecurity

<i>Global Citizenship Program Knowledge Areas (....)</i>	
ARTS	Arts Appreciation
GLBL	Global Understanding
PNW	Physical & Natural World
QL	Quantitative Literacy
ROC	Roots of Cultures
SSHB	Social Systems & Human Behavior

<i>Global Citizenship Program Skill Areas (....)</i>	
CRI	Critical Thinking
ETH	Ethical Reasoning
INTC	Intercultural Competence
OCOM	Oral Communication
WCOM	Written Communication
** Course fulfills two skill areas	

CSSS 4510 Cybersecurity Capstone Project (3)

Project-based instruction and teamwork will be utilized to reinforce cybersecurity skills. Students will complete an assigned project as a comprehensive assessment of knowledge and skills in cybersecurity. The project activities include research into security problems and planning and designing and implementing security solutions for a user organization. **Prerequisite:** CSSS 3510.

CSSS 2410 Cybersecurity and Internet Architecture (3)

This course will introduce students to the field of cybersecurity and internet architecture. The application, physical, link, network and transport layers of the protocol stack are presented. Students will study technologies, processes and practices designed to protect networks, computers, programs, and data from attacks. Cybersecurity issues such as malware (worms, phishing, trojans, and viruses) and other vulnerabilities will be presented.

Prerequisites: COSC 2610 and COSC 2670.

CSSS 2510 Cyber Attacks and Defense (3)

The course provides students with insight on common cyber-attacks and the techniques for identifying, detecting and defending against cybersecurity threats. The course will cover firewalls, intrusion detection/prevention, authentication, ciphers, cryptography, etc. The course presents emerging technologies such as virtualization, cloud computing, and multimedia protocols. This course also discusses critical infrastructures and how to protect them. **Prerequisite:** CSSS 2410.

CSSS 3510 Writing Secure Code (3)

This course will provide an overview of some of the key issues of secure coding. Students will learn the basics of building secure software that prevents security vulnerabilities that are often exploited by hackers. Topics covered include buffer overflows, un-validated input, race conditions, access-control problems, authentication or authorization weaknesses, and cryptographic practices. Students will also learn best practices that, if followed, will help avoid most security vulnerabilities. The course explores the good and bad security traits of many of the top programming languages such as C, C++, C#, Java, Python, PHP, and Ruby. **Prerequisites:** CSSS 2510 and COSC 3100.