

Computer Science - Cyber/Information Security Option Transferring to OSU-IT and Colleges With Similar Patterns (AS)

Associate in Science

Minimum of 62 credit hours

Keeping national secrets safe as well as protecting individuals and companies from criminals who seek to steal identities and destroy documents is becoming more important every day. You could enter the in-demand profession of cyber security specialist with an associate degree in Cyber Information Security from Oklahoma City Community College. The curriculum in this program is specifically designed to give you an introduction to the cyber/information security area and provide the foundational skills you need to transfer to a four-year college or university. Because of the increasing threats to computerized data and information, the need for cyber information security specialists is at an all-time high. These cyber information security specialists protect computer users from hackers and electronic fraud, viruses and worms and more. Oklahoma City Community College has been recognized as a National Center of Academic Excellence in Information Assurance (CAE2Y) by the Department of Homeland Security and the National Security Agency.

Course Sequence

Course ID	Course Name	Credits	Type	Min Gd
Suggested Freshman 1st Semester				
SCL 1001	SUCCESS IN COLLEGE AND LIFE	1	Life Skills	
CS 1103	INTRODUCTION TO COMPUTERS AND APPLICATIONS	3	Major	C
CS 2713	PRINCIPLES OF INFORMATION SECURITY	3	Major	C
ENGL 1113	ENGLISH COMPOSITION I	3	Gen Ed	
MATH 1513	COLLEGE ALGEBRA FOR BUSINESS, LIFE SCIENCES AND SOCIAL SCIENCES	3	Gen Ed	
POLSC 1113	AMERICAN FEDERAL GOVERNMENT	3	Gen Ed	
Suggested Freshman 2nd Semester				
CS 1143	BEGINNING PROGRAMMING	3	Major	C
CS 1413	COMPUTER HARDWARE	3	Major	C
CS 2743	ENTERPRISE SECURITY MANAGEMENT	3	Major	C
ENGL 1213	ENGLISH COMPOSITION II	3	Gen Ed	
PHYS 1014	PHYSICAL SCIENCE	4	Gen Ed	
Suggested Sophomore 1st Semester				
CS 2163	JAVA	3	Major	C
CS 2303	NETWORKING TECHNOLOGIES	3	Major	C
MATH 2013	INTRODUCTION TO STATISTICS	3	Gen Ed	
HIST 1483	U.S. HISTORY TO THE CIVIL WAR	OR	Gen Ed	
HIST 1493	U.S. HISTORY SINCE THE CIVIL WAR	3	Gen Ed	
PHIL 1213	INTRODUCTION TO ETHICS	3	Gen Ed	
Suggested Sophomore 2nd Semester				
CS 1333	DATABASE MANAGEMENT APPLICATIONS	OR	Major	C
CS 2173	ORACLE	OR	Major	C
CS 2443	SQL SERVER	3	Major	C
BIO 1114	GENERAL BIOLOGY (Non Majors)	4	Gen Ed	
PHIL 1603	INTRODUCTION TO LOGIC	3	Gen Ed	
PSY 1113	INTRODUCTION TO PSYCHOLOGY	OR	Gen Ed	
SOC 1113	INTRODUCTION TO SOCIOLOGY	3	Gen Ed	
ELEC	ELECTIVE	2	Gen Ed	

Course Grouping

Major Courses: (24 credit hours) Computer Science: CS 1103, CS 1143, CS 1413, CS 2163, CS 2303, CS 2713, CS 2743, CS 1333 or CS 2173 or CS 2443

General Education Courses: (37 credit hours)

Biological Science: BIO 1114

English: ENGL 1113, ENGL 1213

History: HIST 1483 or HIST 1493

Mathematics: MATH 1513, MATH 2013

Philosophy: PHIL 1213, PHIL 1603

Physical Science: PHYS 1014

Political Science: POLSC 1113

Social Sciences: PSY 1113 or SOC 1113

Two credit hours of General Education Electives

Life Skills Courses: (1 credit hour) Life Skills: SCL 1001

Support Courses: None

Program Notes

Notes: This program is designed for students planning to continue their education at a four-year college or university. See the front general section for information and requirements about University Parallel/Transfer Programs.

Must have a grade of "C" or higher in all Computer Science courses.

Degree Program Course Descriptions

BIO 1114 - GENERAL BIOLOGY (Non Majors)

Prerequisites: ENGL 0203 or adequate placement score or by meeting determined placement measures; MATH 0103 or adequate math placement test score.

4 Credits An introductory lab-based course that is designed to provide non-biological science major with the necessary background needed to effectively understand scientific information. Students investigate the properties of life to include: organization, energy use, evolution, maintenance of homeostasis, reproduction, growth, and development. Ecological concepts are discussed which enables students to have a better understanding regarding the impact that humans have on the natural world. Laboratory work is an integral and required part of this course.

CS 1103 - INTRODUCTION TO COMPUTERS AND APPLICATIONS

Prerequisites: Math 0103 or adequate math placement test score; ENGL 0203, adequate placement score, or by meeting determined placement measures

3 Credits This hands-on course affords students a basic understanding of computers and their application. Upon completion of this course, the student will be able to demonstrate the ability to use a computer operating system, an office suite, productivity tools, as well as the Internet at an introductory level. Advanced Standing is available.

CS 1143 - BEGINNING PROGRAMMING

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures; Math 0303 or adequate math placement test score or by evaluation. § Criteria for evaluation is in division office.

3 Credits Designed for Computer Science majors, this course affords students a basic understanding of computer programming. Students will utilize accepted programming concepts and perform number system conversions and arithmetic. In addition, they will design and code structured modular programs using design tools such as hierarchy charts, flowcharts, and pseudocode.

CS 1333 - DATABASE MANAGEMENT APPLICATIONS

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures; Math 0203 or adequate math placement test score.

3 Credits The student will use a selected database management program to create and edit database files. The student will also

search, organize, and build reports, forms, and templates with the database files.

CS 1413 - COMPUTER HARDWARE

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures; Math 0203 or adequate math placement test score, prerequisite or co-requisite CS 1103

3 Credits Students will learn the following through class lectures and hands-on projects: identification, configuration, maintenance, troubleshooting, and repair of PC hardware including mainboards, BIOS, processors, memory, storage devices, peripherals, and printers. Other IT-related issues such as networks, safety and environmental concerns, customer relations, and professionalism are also presented. A+ Certification Preparation Course.

CS 2163 - JAVA

Prerequisites: Math 0303 or adequate math placement test score, CS 1143 or by evaluation. § Criteria for evaluation is in division office.

3 Credits Student will develop object-oriented Java applications and applets, which demonstrate comprehension of fundamental programming structures, object-oriented programming, graphics, event handling, interface components, programming for the Internet, data structures, and exception handling.

CS 2173 - ORACLE

Prerequisites: Math 0303 or adequate math placement test score, CS 1143.

3 Credits Using Oracle as a platform, students will learn relational database concepts, sound database design and development techniques, and SQL commands. Topics include how to create and modify database tables; retrieve data from database tables; use subqueries to retrieve data; use table constraints, sequences, indexes, synonyms, views and functions; create users and assign privileges to users; create printable reports through SQL*Plus commands; practice SQL statement tuning.

CS 2303 - NETWORKING TECHNOLOGIES

Prerequisites: Math 0203 or adequate math placement test score, co-requisite CS 1103 or by evaluation.

3 Credits Students will learn how to install, configure, and troubleshoot basic networking hardware, protocols, and services and to describe the features and functions of networking components. A foundational knowledge in the important areas of media and topologies, protocols and standards,

network implementation, and network support will be developed using a combination of lectures and interactive assignments. Network + Certification Preparation Course.

CS 2443 - SQL SERVER

Prerequisites: Math 0303 or adequate math placement test score, CS 1143 or by evaluation. § Criteria for evaluation is in division office.

3 Credits Students will learn terms, concepts and features needed to work with most relational databases. Using SQL Server databases and tools, they will learn concepts on how to design a database, retrieve data from and manipulate data in a database. They will also learn SQL programming and will be able to work with database features that will include views, stored procedures, functions, triggers and others.

CS 2713 - PRINCIPLES OF INFORMATION SECURITY

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures; Math 0203 or adequate math placement test score.

3 Credits Students will complete a comprehensive overview of network security, with an introduction to a variety of security problems faced by the computing industry. This course is mapped to the CompTIA Security+ Certification Exam. The course covers topics in general security concepts, communication security, infrastructure security, cryptography basics, and operational/organizational security.

CS 2743 - ENTERPRISE SECURITY MANAGEMENT

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures; Math 0203 or adequate math placement test score.

3 Credits Students will learn the managerial aspects of computer security and risk management for enterprises. Topics include accreditation, procurement, extension and operation principles for secure enterprise information systems. Additional topics are security policy and plan development, contingency, continuity and disaster recovery planning, and incident handling and response.

ELEC - ELECTIVE

Prerequisites:

3 Credits Elective

ENGL 1113 - ENGLISH COMPOSITION I

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures

3 Credits The student will write well-developed compositions which demonstrate the principles of unity, coherence, and organization and which contain specific details and vivid language. The students will locate library material and incorporate researched materials into compositions.

ENGL 1213 - ENGLISH COMPOSITION II

Prerequisites: ENGL 1103 or ENGL 1113 taken within the last year, with strong encouragement for immediate continuation.

3 Credits In this advanced writing course, students will create essays that explore and evaluate a variety of issues and perspectives suggested by fiction, poetry, drama, essays, and other types of cultural texts. Students will refine and augment the writing techniques they learned in ENGL 1113 or ENGL 1103 to develop well-reasoned, well-structured arguments in a clear, fluid, and engaging prose style.

HIST 1483 - U.S. HISTORY TO THE CIVIL WAR

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures

3 Credits After analyzing events in American history from 1400 to 1870 in such areas as revolution, geographic and social mobility, political reform, government precedents and war, the student will be able to identify patterns of present day mobility, describe governmental operations in his society and help resolve conflict in society based on the students search for change, precedents, and conflict in the American past.

HIST 1493 - U.S. HISTORY SINCE THE CIVIL WAR

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures

3 Credits After analyzing events in American history from 1870 to the present in such areas as political reform, industrialization, urbanization, ethnic acculturation and war, the student will be able to identify meaningful changes in his society, identify equal rights in that society, and help resolve conflict in this society based on the students search for change, equal rights and conflicts in the American past.

MATH 1513 - COLLEGE ALGEBRA FOR BUSINESS, LIFE SCIENCES AND SOCIAL SCIENCES

Prerequisites: MATH 0403 or adequate math placement test score; ENGL 0203, adequate placement score, or by meeting determined placement measures

3 Credits The student will demonstrate an understanding of the general concepts of relation and function and specifically of

polynomial, exponential, and logarithmic functions; the ability to solve systems of equations by utilizing matrices and determinants; and the ability to solve practical problems using algebra.

MATH 2013 - INTRODUCTION TO STATISTICS

Prerequisites: MATH 0403 or adequate math placement test score; ENGL 0203, adequate placement score, or by meeting determined placement measures

3 Credits The student will solve problems applying the concepts of random sampling, elementary probability, testing hypotheses, descriptive measures, chi-square, regression and correlation, and analysis of variance.

PHIL 1213 - INTRODUCTION TO ETHICS

Prerequisites: ENGL 1113

3 Credits Students will demonstrate their understanding of the relationship between philosophy and ethics; the language, concepts and traditions of ethics; and selected theories of ethics. The students will then use descriptive, normative and metathetical approaches to analyze selected contemporary ethical issues.

PHIL 1603 - INTRODUCTION TO LOGIC

Prerequisites: ENGL 1113

3 Credits Students will recognize genuine arguments in natural language, translate them into appropriate form for logical analysis, and use traditional and modern methods to determine their validity. Students also will recognize and refute various informal fallacies.

PHYS 1014 - PHYSICAL SCIENCE

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures and Math 0203 or adequate math placement test score.

4 Credits Students will develop an appreciation for concepts, methods, and applications of the natural sciences in their everyday lives. Students will be able to demonstrate their familiarity with some of the basic principles of chemistry, physics, geology, astronomy, and other physical sciences by (1) indicating how disciplines can work together in the solution of common problems (2) utilizing physical science methods in their daily lives, describing physical phenomena and predicting the results of common occurrences, and (3) demonstrating the ability to utilize scientific methodologies in a laboratory setting.

POLSC 1113 - AMERICAN FEDERAL GOVERNMENT

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures

3 Credits A study of the principles, structure, processes and functions of the United States federal government.

PSY 1113 - INTRODUCTION TO PSYCHOLOGY

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures

3 Credits A survey of the major areas of study in psychology such as motivation, learning, physiology, personality, social psychology, abnormal behavior, perception, memory, cognition/thought, and treatment.

SCL 1001 - SUCCESS IN COLLEGE AND LIFE

Prerequisites: ENGL 0106 or adequate reading/writing assessment scores

1 Credit Students will learn best practices for academic, career, and personal success. Students will discover their individual strengths, interests, and values to create a personalized plan; select and utilize resources that are applicable to their growth and success; and engage as active and responsible members of the academic community. This course should be taken during a student's first semester of college work at Oklahoma City Community College and is a required course in degree plans to satisfy the Life Skills requirement.

SOC 1113 - INTRODUCTION TO SOCIOLOGY

Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures

3 Credits The student will identify the sociological dimensions of human behavior by analyzing the concepts of society, culture, socialization, institutions, social stratification and social change.