

## Computer Science - Computer System Support (AAS)

### Associate in Applied Science

Minimum of 61 credit hours

Do you have a natural curiosity about how computers and their programs work? Do you like to put your knowledge to good use helping others? Are you a good communicator, or would you like to become one? Then, a career as a computer systems support specialist would be a good choice for you! At Oklahoma City Community College, you can earn an associate degree in applied science or a certificate of mastery in computer science with a computer systems support option. Either program option will get you out of school quickly and into the job market. Just talk with a faculty advisor about which would be the best choice for your lifestyle and career goals. OCCC provides a strong foundation in computer science and is a National Center of Academic Excellence in Information Assurance.

### Course Sequence

Course ID	Course Name	Credits	Type	Min Gd
<b>Suggested Freshman 1st Semester</b>				
SCL 1001	Success in College and Life	1	Life Skills	
CS 1103	Introduction to Computers and Applications	3	Gen Ed	C
CS 1153	Introduction to Computing Technologies	3	Major	C
ENGL 1113	English Composition I	3	Gen Ed	
HIST 1483	U.S. History to 1877	OR	Gen Ed	
HIST 1493	U.S. History 1877 to Present	3	Gen Ed	
MATH 1503	Contemporary Mathematics	3	Gen Ed	
<b>Suggested Freshman 2nd Semester</b>				
CS 1333	Database Management Applications	3	Major	C
CS 1353	Computer Operating Systems	3	Major	C
CS 2183	Linux	3	Major	C
CS 2713	Principles of Information Security	3	Major	C
ENGL 1213	English Composition II	OR	Gen Ed	
ENGL 1233	Technical Writing for the Workplace	OR	Gen Ed	
COM 1123	Interpersonal Communications	OR	Gen Ed	
COM 2213	Intro to Public Speaking	3	Gen Ed	
<b>Suggested Sophomore 1st Semester</b>				
CS 1413	Computer Hardware	3	Major	C
CS 2283	Introduction to Virtualization	3	Major	C
CS 2303	Networking Technologies	3	Major	C
POLSC 1113	American Federal Government	3	Gen Ed	
CS	Computer Science Elective	3	Support	C
<b>Suggested Sophomore 2nd Semester</b>				
CS 2153	Supporting Windows Operating Systems	3	Major	C
CS 2403	Computer Support Services	3	Major	C
CS 2503	Network Administration	3	Major	C
CS 2763	Network Security	3	Major	C
CS	Computer Science Elective	3	Support	C

### Course Grouping

Major Courses: (36 credit hours):

Computer Science: CS 1153, CS 1333, CS 1353, CS 1413, CS 2153, CS 2183, CS 2283, CS 2303, CS 2403, CS 2503, CS 2713, CS 2763

General Education Courses: (18 credit hours)

Communications: ENGL 1213 or ENGL 1233 or COM 1123 or COM 2213

Computer Science: CS 1103

English: ENGL 1113

Mathematics: MATH 1503

History: HIST 1483 or HIST 1493

Political Science: POLSC 1113

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

Support Courses: (6 credit hours) Computer Science electives

### Program Notes

Notes: This Technical and Occupational program is designed to prepare students to enter the job force following completion. See Technical and Occupational Programs in the general information section of the catalog.

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

## Degree Program Course Descriptions

### COM 1123 - Interpersonal Communications

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

3 Credits The student will be able to identify why certain things happen as they do when two or more individuals come together to communicate for a specific purpose. The student must attest to his or her ability to understand the principles of interpersonal communication with emphasis on dyads, small groups, analysis of communication models and nonverbal communication, applying understanding to the major types of interpersonal communication problems in the work environment and in daily human relations.

### COM 2213 - Intro to Public Speaking

*Prerequisites: ENGL 0106 or adequate placement score*

3 Credits Given the principles of effective listening and speaking, the student will assimilate those skills into his or her physical and psychological worlds. After being exposed to public, business and professional speaking, the student will apply the principles of invention, organization, style, and delivery through practical exercises and will use the principles of rhetorical criticism in discussing speeches delivered in class.

### CS - Computer Science Elective

3 Credits Computer Science elective

### 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. This course satisfies the computer proficiency requirement.

### CS 1153 - Introduction to Computing Technologies

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

3 Credits Students will learn fundamental concepts of hardware and software prior to learning tools of support technicians. Topics will include the computer architecture, the instruction execution cycle, I/O and storage.

in addition, students will learn basics of digital electronics, how to perform mathematical operations and conversions on multiple numbering systems, develop fundamental problem-solving skills for troubleshooting, and investigate career opportunities within the information technology industry. This course satisfies the computer proficiency requirement.

### 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. This course satisfies the computer proficiency requirement.

### CS 1353 - Computer Operating Systems

*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 important areas through a combination of lectures and hands-on projects: installing, maintaining and optimizing Windows operating systems, troubleshooting Windows and applications, connecting to and setting up a network, Windows resources on a network, computer security strategies, mobile devices, and client-side virtualization. A+ Certification Preparation Course. This course satisfies the computer proficiency requirement.

### 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. This course satisfies the computer proficiency requirement.

### CS 2153 - Supporting Windows Operating Systems

*Prerequisites: Math 0203 or adequate math placement test score, CS 1353 or by evaluation. § Criteria for evaluation is in division office.*

3 Credits Students will learn the procedures for installing, configuring and maintaining a Windows Operating System in a business environment. Real-world examples and interactive activities are used to reinforce key concepts such as: managing files and folders, printers, storage devices and display devices; desktop user environments; user profiles and networking. Preparatory course for certification through Microsoft. This course satisfies the computer proficiency requirement.

### CS 2183 - Linux

*Prerequisites: Math 0203 or adequate math placement test score, CS 1103 or by evaluation. § Criteria for evaluation is in division office.*

3 Credits This course is an introduction to the Linux operating system for users. It is designed for those with a DOS/Windows operating system background with little or no knowledge of Linux. Topics include the development of Linux; basic Linux operating system concepts; a comparison of Linux to MS Windows; frequently used Linux programs and utilities, shells, editors, and tools; X window GUI and applications; Linux and the internet; setting up Apache web server software; basic HTML and CGI programming for Linux; use of virtual machine software to create virtual machines of guest operating system on top of host operating system. A+ Certification Preparation Course. This course satisfies the computer proficiency requirement.

### CS 2283 - Introduction to Virtualization

*Prerequisites: CS 1353 or by evaluation § Criteria for evaluation is in division office.*

3 Credits This course covers fundamental concepts and practical knowledge of virtualization technology. Students will learn to install and configure virtualization software, manage virtual networking and storage, deploy, manage, and migrate virtual machines, manage user access to the virtual machine infrastructure, monitor resource usage, increase scalability, apply patches, and manage higher availability and data protection. Students will gain hands-on experience through using virtualization software platforms.

### 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. This course satisfies the computer proficiency requirement.

### **CS 2403 - Computer Support Services**

*Prerequisites: ENGL 1113; Math 0203 or adequate math placement test score and 9 credit hours of Computer Science courses.*  
3 Credits Students will demonstrate their understanding of planning, implementing, and maintaining a support center for both internal and external users of computer hardware and software. The main topics will include: the Help Desk, design of hardware and software specifications, performing a needs assessment, design of evaluation instruments, creation of both technical and non-technical documentation, working with customers in a support role, and ethical standards for the computing professional. This course satisfies the computer proficiency requirement.

### **CS 2503 - Network Administration**

*Prerequisites: CS 1353*  
3 Credits The students will use a network operating system to create and manage a local area network. The topics to be covered include creating and administering user and group accounts, managing network resources and administering permissions for files and folders, setting up and administering the printing environment, using the auditing functions, backing up and restoring files and folders. Preparatory course for certification through Microsoft. This course satisfies the computer proficiency requirement.

### **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. This course satisfies the computer proficiency requirement.

### **CS 2763 - Network Security**

*Prerequisites: CS 2713 and (CS 2303 or CS 2503)*  
3 Credits Students will participate in a comprehensive study of current and

developing communications systems and networks. These include host-based and network-based intrusion detection, anomaly and misuse detection, and network security appliances including firewalls and access control devices. Topics are covered with all networks in mind, including the Internet, PSTN, ATM, Frame Relay Networks, etc. This course satisfies the computer proficiency requirement.

### **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.

### **ENGL 1233 - Technical Writing for the Workplace**

*Prerequisites: ENGL 1113 or ENGL 1103; MATH 0203 College Prep Math II or adequate Math Placement Test Score*  
3 Credits This course will expose students to technical communication and will allow students to practice professional methods of writing in the workplace. In addition to constructing technical documents appropriate for use in professional and job-related environments, students will learn about rhetorical methods for presenting technical information in ethical and formal prose designed for clear and effective communication with employers and colleagues. This course will equip the student with written and oral communication skills necessary for sharing information and discussing content in professional settings; developing an awareness of technical genres; utilizing technological platforms for constructing documents; using visuals and graphics professionally; writing professional correspondence; constructing reports; designing project proposals, and composing instructions..

### **HIST 1483 - U.S. History to 1877**

*Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures*  
3 Credits After analyzing events in American history from 1400 to 1877 in such areas as revolution, geographic and social mobility, political reform, government precedents and war, students will be able to identify patterns of present day mobility, describe governmental operations in their society and help resolve conflict in society based on the student's search for change, precedents, and conflict in the American past. A general education requirement.

### **HIST 1493 - U.S. History 1877 to Present**

*Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures*  
3 Credits After analyzing events in American history from 1877 to the present in such areas as geographic and social mobility, political reform, government precedents and war, students will be able to identify patterns of present day mobility, describe governmental operations in their society and help resolve conflict in society based on the student's search for change, precedents, and conflict in the American past. A general education requirement.

### **MATH 1503 - Contemporary Mathematics**

*Prerequisites: MATH 0403 or adequate math placement test score. Pre or Co-requisite ENGL 1113 or ENGL 1103*  
3 Credits A study of the mathematics needed for critical evaluation of quantitative information and arguments (including logic, critical appraisal of graphs and tables); use of simple mathematical models, and an introduction to elementary statistics. This course satisfies the computer proficiency requirement.

### **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.

### **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.