

# NETWORKING, SECURITY AND SYSTEM ADMINISTRATION - ENTERPRISE SYSTEM ADMINISTRATION ASSOCIATE IN SCIENCE AND CERTIFICATE OF ACHIEVEMENT



See *Business Office Technology for specific Microsoft applications (Word, Excel, PowerPoint, etc.)*.

## Networking, Security and System Administration

These degree programs prepare students for careers in computer networking or system administration and related fields. Upon completion, students may find entry level positions as computer support technicians, junior network administrators, junior system administrators, hardware technicians, data/voice/video cabling technicians, network project managers, designers/estimators or technical support personnel. The major prepares students to work as team members in an information technology group which designs, evaluates, tests, installs and maintains corporate networks. Preparation for the following industry certifications: A+, Network+, Security+, Linux+, Microsoft Certified Technician (MCT) in Windows and Windows Server (active directory, network infrastructure and applications infrastructure), Linux Profession Institute Certification Level 2, Certified Wireless Network Administrator (CWNA), Cisco Certified Network Associate (CCNA), Certified Ethical Hacking (CEH).

## Career Opportunities

Communications Specialist  
Computer Game Programmer  
Computer Hardware Specialist  
Computer Help Desk Technician  
Computer Maintenance Technician  
Computer Software Technician  
Computer Support Specialist  
Computer Systems Analyst<sup>1</sup>  
Computing Analyst<sup>1</sup>  
Cyber Security Specialist  
Database Manager<sup>1</sup>  
Information Specialist  
Information Systems Programmer<sup>1</sup>  
LAN/WAN Manager  
Manufacturer's Representative  
Network Administrator  
Network Analyst<sup>1</sup>  
Network Consultant  
Network Control Technician  
Network Training and Support Specialist  
Programmer Analyst<sup>1</sup>

Sales and Service  
Scientific Programmer<sup>1</sup>  
Software Consultant  
Software Developer<sup>1</sup>  
Systems Analyst<sup>1</sup>  
Systems Programmer<sup>1</sup>  
Technical Support Representative  
Telecommunications Programmer<sup>1</sup>  
Telecommunications Technician  
Telecommunications Technical Engineer<sup>1</sup>  
Training Specialist  
Web Designer  
Web Developer

<sup>1</sup> Bachelor Degree or higher required.

## Similar Course List

The following Cuyamaca and Grossmont College courses are considered similar enough to be accepted in the major for local computer science degrees in the district. Modification of Major forms are not required.

Cuyamaca Course	Similar Grossmont Course
CIS-140	CSIS-180
CIS-190	CSIS-112
CIS-191	CSIS-113
CIS-211	CSIS-132
CIS-213	CSIS-133
CIS-215	CSIS-135
CS-119	CSIS-119
CS-181	CSIS-296
CS-182	CSIS-293
CS-281	CSIS-297
CS-282	CSIS-294

## Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Install, configure, upgrade, test, and troubleshoot a personal computer (hardware, system software, and networking hardware and software) and Linux and Windows servers (directory services, networking, print services, server security, remote access, DNS, DHCP, web server, file server, mail server, FTP server, file systems, partitions, logical volumes, server/network performance, and data backup and recovery).

## Associate in Science Degree Requirements

Code	Title	Units
<b>Core Curriculum</b>		
CIS-120	Computer Maintenance and A+ Certification	3
CIS-121	Network Cabling Systems	3
CIS-125	Network+ Certification	3
CS-119	Program Design and Development	3
CS-119L	Program Design and Development Lab	1

### Area of Emphasis

CIS-190	Windows Operating System	3
CIS-191	Linux Operating System	3
CIS-290	Windows Server-Installing and Configuring	2
CIS-291	Linux System Administration	3
CIS-293	Windows Server-Administering	2
CIS-294	Windows Server-Advanced Configuration	2
Select four of the following:		10-12
CIS-140	Databases	
CIS-162	Technical Diagramming Using Microsoft Visio	
CIS-170	Internet of Things (IoT) - Connecting Things	
CIS-172	Internet of Things (IoT) Security	
CIS-261	NSSA Degree Capstone	
CIS-263	Fundamentals of Network Security	
CIS-264	Ethical Cybersecurity Hacking	
CIS-265	Computer Forensics Fundamentals	
CIS-295	VMware Certified Professional	
<b>Total Units</b>		<b>38-40</b>

Plus General Education Requirements (<https://catalog.gcccd.edu/cuyamaca/degree-requirements-transfer-information/>)

## Certificate of Achievement

Students who complete only the courses required for the major including an area of emphasis qualify for a Certificate in Networking, Security and System Administration - Enterprise System Administration. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.