

INFORMATION TECHNOLOGY

Associate of Applied Science Degree

Science, Technology, Engineering & Math Pathway
 CCD.edu/IT

- Information Technology
- Computer Information Systems
- Cybersecurity

Information Technology

The Associate of Applied Science in information technology (IT) prepares you to obtain entry-level positions in the IT industry. Upon completing this degree, you will qualify for the CompTIA A+ certification exams and gain experience in networking, computer security and database management. You will enhance your communication skills and obtain exposure to the business environment. You can additionally choose to specialize in a specific IT category by using the nine elective credits to focus on a particular area. Please speak to a faculty member or your academic advisor about this option.

PROGRAM ADMISSION REQUIREMENTS

Meet minimum assessment scores or prerequisites required for general education courses in the program.

Credit Transfer Limitations

To ensure success in the program, courses transferred into the computer information systems or the information technology degree/certificate options or previously taken at CCD should have the following time limits:

Application courses – 5 years
 Programming courses – 5 years
 Networking courses – 5 years
 Certification courses – 3 years
 General education courses – 10 years
 Business courses – 10 years

If you are transferring to CCD with current industry experience, the time limit for applicable courses may be waived upon approval of the program chair.

COURSE MAP

Course	Title	Credits
First Semester		
BUS 1015	Introduction to Business	3
CIS 1018	Introduction to PC Applications	3
BUS 2017	Business Communication and Report Writing	3
MAT 1320	Finite Mathematics: GT-MA1	4
ENG 1031	Technical Writing I: GT-CO1	3
Subtotal		16
Second Semester		
COM 1150	Public Speaking	3
CNG 1024	Networking I: Network +	3
CNG 1025	Networking II: Network +	3
CIS 2040	Database Design and Development	3
MAR 1060	Customer Service	3
Subtotal		15
Third Semester		
CIS 1024	Introduction to Operating Systems	3
CIS 2067	Management of Information Systems	3
PSY 1001	General Psychology I: GT-SS3	3
Choose One Course		3-4
CNG 1016	Microcomputer Hardware	
CNG 1021	Computer Technician I: A+	
Choose One Course		4
CNG 1020	A+ Certification Preparation	
CNG 1022	Computer Technician II: A+	
Subtotal		16-17

Fourth Semester

CSC 1019	Introduction to Programming	3
CNG 1031	Principles of Information Assurance	3
CNG 1032	Network Security Fundamentals	3
ACC 1021	Accounting Principles I	4
Subtotal		13
Total Credits		60-61

COMPUTER INFORMATION SYSTEMS

This Associate of Applied Science degree prepares you to obtain entry-level employment in the computer information systems (CIS) industry. The program prepares you both to be current in industry computer information standards and also to have the business foundation necessary to compete in the workforce.

This degree transfers to Metropolitan State University of Denver's Bachelor of Science degree in computer information systems.

CREDIT TRANSFER LIMITATIONS

To ensure success in the program, courses transferred into the computer information systems or the information technology degree/certificate options or previously taken at CCD should have the following time limits:

- Application courses – 5 years
- Programming courses – 5 years
- Networking courses – 5 years
- Certification courses – 3 years
- General education courses – 10 years
- Business courses – 10 years

If you have current industry experience and plan to transfer, the time limit for applicable courses may be waived upon approval of the program chair.

COURSE MAP

Course	Title	Credits
First Semester		
ENG 1021	English Composition I: GT-CO1	3
ECO 2001	Principles of Macroeconomics: GT-SS1 ¹	3
CIS 1018	Introduction to PC Applications	3
BUS 1015	Introduction to Business	3
Choose One Mathematics Course		4
MAT 1340	College Algebra: GT-MA1	
MAT 1320	Finite Mathematics: GT-MA1	
Subtotal		16
Second Semester		
ENG 1022	English Composition II: GT-CO2	3
ECO 2002	Principles of Microeconomics: GT-SS1	3
ACC 1021	Accounting Principles I	4
CIS 2067	Management of Information Systems	3
Choose One Art Course		3
ART 1111	Art History Ancient to Medieval: GT-AH1	
ART 1112	Art History Renaissance to Modern: GT-AH1	
Subtotal		16
Third Semester		
MAR 2016	Principles of Marketing	3
COM 1150	Public Speaking	3
CNG 1024	Networking I: Network +	3
Choose One Course		3-4
CNG 1016	Microcomputer Hardware	
CNG 1021	Computer Technician I: A+	
Choose One Course		4
MAT 1400	Survey of Calculus: GT-MA1	
ACC 1022	Accounting Principles II	
Subtotal		16-17
Fourth Semester		
CNG 1025	Networking II: Network +	3
CSC 1019	Introduction to Programming	3

BUS 2016	Legal Environment of Business	3
BUS 2017	Business Communication and Report Writing	3
Subtotal		12
Total Credits		60-61

CYBERSECURITY

The Cybersecurity AAS degree program at Community College of Denver is designed to prepare students for a rewarding career in Cybersecurity. Network and security professionals are in high demand to protect every industry from the threat of cyber criminals who are actively conducting attacks on networks, applications, hardware, and software utilizing both electronic and physical means. The Community College of Denver provides a robust AAS degree to help realize students goals in becoming a Cybersecurity professional.

COURSE MAP

Course	Title	Credits
First Semester		
ENG 1021	English Composition I: GT-CO1	3
CRJ 1010	Introduction to Criminal Justice: GT-SS3	3
CIS 1018	Introduction to PC Applications	3
COM 1150	Public Speaking	3
MAT 1340	College Algebra: GT-MA1	4
Subtotal		16
Second Semester		
ENG 1022	English Composition II: GT-CO2	3
CNG 1024	Networking I: Network +	3
CNG 1025	Networking II: Network +	3
BUS 2017	Business Communication and Report Writing	3
CIS 2067	Management of Information Systems	3
Subtotal		15
Third Semester		
CNG 1031	Principles of Information Assurance	3
CNG 1032	Network Security Fundamentals	3
CSC 1060	Computer Science I: (Language)	4
CNG 2001	Linux Configuration: (OS)	3
Choose One Social & Behavioral Sciences Course (GT-SS1~GT-SS3)		3
ECO 2002	Principles of Microeconomics: GT-SS1	
COM 2300	Intercultural Communication: GT-SS3	
Subtotal		16
Fourth Semester		
CNG 2042	Cloud Computing	3
CNG 2056	Vulnerability Assessment I	3
CNG 2057	Network Defense and Counter Measures	3
CNG 2087	Cooperative Education	3
Choose One Arts & Humanities Course (GT-AH1)		3
ART 1111	Art History Ancient to Medieval: GT-AH1	
ART 1112	Art History Renaissance to Modern: GT-AH1	
Subtotal		15
Total Credits		62

Associate of Science

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COMPUTER SCIENCE TRANSFER MAJOR

This program provides a foundation in algorithm development, programming techniques, data structures, and structured problem solving. This AS degree is designed to transfer to any Colorado public, bachelor's degree awarding institution that offers a degree in Computer Science.

COURSE MAP

Course	Title	Credits
First Semester		
MAT 2410	Calculus I: GT-MA1	5
ENG 1021	English Composition I: GT-CO1	3

Choose One Arts & Humanities Course (GTAH1~GT-AH4)		3
PHI 2018	Environmental Ethics: GT-AH3	
PHI 1013	Logic: GT-AH3	
ART 1111	Art History Ancient to Medieval: GT-AH1	
ART 1112	Art History Renaissance to Modern: GT-AH1	
PHI 1011	Intro to Philosophy: GT-AH3	
Choose One History Course (GT-HI1)		3
HIS 2015	20th Century World History: GT-HI1	
HIS 1310	Western Civilization: Antiquity-1650: GT-HI1	
HIS 1320	Western Civilization: 1650-Present: GT-HI1	
HIS 1110	The World: Antiquity-1500: GT-HI1	
HIS 1120	The World: 1500-Present: GT-HI1	
Subtotal		14

Second Semester

ENG 1022	English Composition II: GT-CO2	3
CSC 1060	Computer Science I: (Language)	4
MAT 2420	Calculus II: GT-MA1	5
Choose One Social & Behavioral Science Course (GT-SS1~GT-SS4)		3
ECO 2001	Principles of Macroeconomics: GT-SS1	
ECO 2002	Principles of Microeconomics: GT-SS1	
GEO 1005	World Regional Geography: GT-SS2	
GEO 1006	Human Geography: GT-SS2	
PSC 2020	Intro to Political Science: GT-SS1	
PSC 2005	International Relations: GT-SS1	
Subtotal		15

Third Semester

CSC 1061	Computer Science II: (Language)	4
Choose One Natural Science Course (GT-SC1~GTSC2)		5
PHY 2111	Physics Calculus Based I with Lab: GT-SC1	
BIO 1111	General College Biology I with Lab: GT-SC1	
CHE 1111	General College Chemistry I with Lab: GT-SC1	
Choose One Course (Depending on Transfer Institution)		4
CSC 1065	Discrete Structures	
MAT 2430	Calculus III: GT-MA1	
Choose One Arts & Humanities Course (GT-AH1~GT-AH4)		3
PHI 2018	Environmental Ethics: GT-AH3	
PHI 1013	Logic: GT-AH3	
ART 1111	Art History Ancient to Medieval: GT-AH1	
ART 1112	Art History Renaissance to Modern: GT-AH1	
PHI 1011	Intro to Philosophy: GT-AH3	
Subtotal		16

Fourth Semester

CSC 2025	Computer Architecture/Assembly Language Programming	4
Please Choose One Course (Depending on Transfer Institution)		3-5
CHE 1111	General College Chemistry I with Lab: GT-SC1	
CSC 2034	C++ Programming	
MAT 2540	Linear Algebra	
Choose One Natural Science Course (GT-SC1~GT-SC2)		5
PHY 2112	Physics Calculus-Based II with Lab: GT-SC1	
BIO 1112	Gen College Biology II with Lab: GT-SC1	
CHE 1112	General College Chemistry II with Lab: GT-SC1	
Choose One Social & Behavioral Science Course (GT-SS1~GT-SS4)		3
ECO 2001	Principles of Macroeconomics: GT-SS1	
ECO 2002	Principles of Microeconomics: GT-SS1	
GEO 1005	World Regional Geography: GT-SS2	
GEO 1006	Human Geography: GT-SS2	
PSC 2020	Intro to Political Science: GT-SS1	
PSC 2005	International Relations: GT-SS1	
Subtotal		15-17
Total Credits		60-62

Certificates

Science, Technology, Engineering & Math Pathway
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Community College of Denver currently offers five certificates in information technology.

- Cybersecurity
- Computer Technology
- Computer Service & Support
- Data Analytics
- Network Security

CYBERSECURITY

Upon completing this certificate, you will be prepared for the Network+ and Security+ certification exams. In this program, you will obtain the skills necessary to work in an entry-level position in information security and computer networking. Emphasis is placed on networking security skills and the interplay of ethics and law within the Information Technology (IT) field.

COURSE MAP

Course	Title	Credits
First Semester		
CIS 1018	Introduction to PC Applications	3
PHI 2005	Business Ethics: GT-AH3	3
PSM 2004	Terrorism, Intelligence, and Justice	3
Subtotal		9
Second Semester		
CNG 1024	Networking I: Network +	3
CNG 1025	Networking II: Network +	3
CRJ 1010	Introduction to Criminal Justice: GT-SS3	3
Subtotal		9
Third Semester		
CNG 1031	Principles of Information Assurance	3
CNG 1032	Network Security Fundamentals	3
Subtotal		6
Fourth Semester		
CNG 2056	Vulnerability Assessment I	3
CNG 2057	Network Defense and Counter Measures	3
Subtotal		6
Total Credits		30

COMPUTER TECHNOLOGY

This certificate prepares you for employment as a computer technician. Upon completing this certificate, you will be prepared to take the CompTIA A+ certification examinations.

COURSE MAP

Course	Title	Credits
First Semester		
CIS 1018	Introduction to PC Applications	3
Choose One Course		3-4
CNG 1016	Microcomputer Hardware	
CNG 1021	Computer Technician I: A+	
Choose One Course		4
CNG 1020	A+ Certification Preparation	
CNG 1022	Computer Technician II: A+	
Subtotal		10-11
Second Semester		
CNG 1024	Networking I: Network +	3
CNG 1025	Networking II: Network +	3
Subtotal		6
Total Credits		16-17

COMPUTER SERVICE & SUPPORT

This certificate prepares you to obtain entry-level positions in the IT industry. Upon completing this degree, you will qualify for the CompTIA A+ certification exams and gain experience in networking, computer security and database management. Additionally, you can choose to specialize in a specific IT category by using the nine elective credits to focus on a particular area. Please speak to a faculty member or your academic advisor about this option.

COURSE MAP

Course	Title	Credits
First Semester		
CIS 1018	Introduction to PC Applications	3
CNG 1024	Networking I: Network +	3
CNG 1025	Networking II: Network +	3
Subtotal		9
Second Semester		
CIS 2040	Database Design and Development	3
CIS 2067	Management of Information Systems	3
Subtotal		6
Third Semester		
CIS 1024	Introduction to Operating Systems	3
CNG 2011	Windows Configuration: (OS)	3
Choose One Course		3-4
CNG 1016	Microcomputer Hardware	
CNG 1021	Computer Technician I: A+	
Choose One Course		4
CNG 1020	A+ Certification Preparation	
CNG 1022	Computer Technician II: A+	
Subtotal		13-14
Total Credits		28-29

DATA ANALYTICS

This certificate opens the door for you to have an opportunity to be a part of work force in the area of data analytics. Established business managers and supervisors can use this certificate to expand their knowledge base of where data comes from, how it is organized and how they can use it. There are many advantages for all students, not just CIS or business students, in completing this certificate.

COURSE MAP

Course	Title	Credits
First Semester		
CIS 1018	Introduction to PC Applications	3
MAT 1260	Intro to Statistics: GT-MA1	3
Subtotal		6
Second Semester		
CIS 1055	PC Spreadsheet Concepts: Excel	3
CIS 2040	Database Design and Development	3
CSC 1019	Introduction to Programming	3
Subtotal		9
Third Semester		
CIS 1059	Microsoft Office Specialist Certification Prep: Excel	1
Choose One Course		3
CIS 2067	Management of Information Systems	
CSC 2017	Advanced Python Programming	
Subtotal		4
Total Credits		19

Network Security

This program prepares you to be entry-level network security specialists. You will be trained in state-of-the-art security practices that will provide you with the skills necessary to maintain a network and protect the network from internal and external security threats. Upon completing this certificate, you will be prepared for the CompTIA Network+ and the CompTIA Security+ certification examinations.

PROGRAM ADMISSION REQUIREMENTS

Meet minimum assessment scores or prerequisites required for general education courses in the program.

COURSE MAP

Course	Title	Credits
First Semester		
CIS 1018	Introduction to PC Applications	3
CNG 1024	Networking I: Network +	3
CNG 1025	Networking II: Network +	3
Choose One Course		3-4
CNG 1016	Microcomputer Hardware	
CNG 1021	Computer Technician I: A+	
Subtotal		12-13
Second Semester		
CNG 1031	Principles of Information Assurance	3
CNG 1032	Network Security Fundamentals	3
CNG 2009	MS Server Active Directory Configuration	4
CNG 2011	Windows Configuration: (OS)	3
Subtotal		13
Total Credits		25-26