

District Career & Technical Education (CTE) Pathway Proposal

The Career & Technical Education (CTE) Pathway proposal must be submitted to the CTE Coordinator for prior approval and must include the following information:

Name of State approved (CCCS) CTE Program:

Pathway Name: **Secure Network Technologies**

Sub-Pathway Name: **Information Technology**

Credit Type(s): **ELE**

Department Code: **IT**

CIP Code: **110101**

I. GOALS

A. Provide a brief overview of the CTE Pathway.

DCSD is partnering with Arapahoe Community College to offer a pathway where students can earn college credit through concurrent enrollment toward a certificate or degree in computer networking, cybersecurity or cloud computing. Students can complete the Certified Network Technician Certification through ACC and the courses apply to their Computer Network Technology AAS, then Network Security AAS, and the CIS Computer Support AAS.

B. How does this CTE Pathway fit into the overall educational program?

CTE programs significantly increase not only the high school graduation rate, but also results in a higher percentage of students going to college and persisting through graduation. Students taking both academic and technical courses have lower dropout rates and better achievement gains than other students.

C. What benefits would students receive from this CTE pathway?

The Secure Network Technologies Pathway will offer students the opportunity to configure network devices, configure basic cloud computing infrastructure, and implement cybersecurity practices. Students will be able to earn industry certifications in networking, cloud computing, and network security.

II. CAREER & TECHNICAL EDUCATION (CTE) PATHWAY COURSES

- A. Complete the table below indicating the course sequence students would take within the CTE program. Other courses may be added or changed within the program, based upon the need of students or program modifications. **New course names will be indicated in red text.**

<i>State Approved Course Name:</i>	<i>State Approved Description:</i>	<i>Credit Type</i>	<i>Course Number</i>
ACC CNG 2060 – CISCO Network Associate I	Introduces network fundamentals, the OSI model and industry standards, IP addressing (subnet masks) and basic network design. 5 Credits Arapahoe Community College	ELE	69062
ACC CNG 2061 – CISCO Network Associate II	Focuses on router theory and technologies, including router configurations, protocols, network management and introductory LAN switching. 5 Credits Arapahoe Community College	ELE	69063
ACC CNG 2062 – CISCO Network Associate III	Focuses on advanced routing and switching configurations, LAN switching, network management and advanced network design. 5 Credits Arapahoe Community College	ELE	69064
ACC CNG 1042 Introduction to Cloud Computing	Introduces fundamental content on cloud computing including system analysis, requirements, configuration, deployment, and testing. This course includes information on management, business continuity, security, maintenance, updating, and troubleshooting as related to cloud computing. 3 Credits Arapahoe Community College	ELE	690250
ACC CNG 1024 Networking I; Network +	Provides students with the knowledge necessary to understand, identify and perform necessary tasks involved in supporting a network. Covers the vendor-independent networking skills and concepts that affect all aspects of networking, such as installing and configuring TCP/IP. This course also prepares students for the Networking II: Network+ course. 3 Credits Arapahoe Community College	ELE	69023
ACC CNG 1025 Networking II: Network +	Continues to provide students with the knowledge necessary to implement and support a network. Focuses on the vendor-independent networking skills	ELE	69024

Superintendent File: IGA-E-2

	<p>and concepts that affect all aspects of networking. The Networking I and II: Network + courses prepare students for the Network + certification. Note: This course was previously listed as CNG 125.</p> <p>3 Credits Arapahoe Community College</p>		
ACC-CNG 1032 Network Security Fundamentals	<p>Delivers a comprehensive overview of network security, including general security concepts. Communication security is studied, including remote access, e-mail, the Web, directory and file transfer, and wireless data. Common network attacks are introduced. Cryptography basics are incorporated, and operational/organizational security is discussed as it relates to physical security, disaster recovery, and business continuity. Computer forensics is introduced.</p> <p>3 Credits Arapahoe Community College</p>	ELE	69019
ACC-CNG 1021 Computer Technician I:A+	<p>Provides students with an in-depth look at personal computer hardware, introduces O.S. features and security concepts, and covers interpersonal skills, all of which are necessary for a successful entry-level computer service technician position. Provides extensive hands-on work with computer systems, PC setup and configuration, and basic maintenance and troubleshooting. This course helps prepare you for the CompTIA A+ Essentials Exam. Note: This course was previously listed as CNG 121.</p> <p>4 Credits Arapahoe Community College</p>	ELE	69021
ACC CNG 1022 Computer Technician II: A+	<p>Provides students with an in-depth look at Operating System support, maintenance, and troubleshooting, and an overview of hardware, security concepts, and interpersonal skills, all of which are necessary for a successful entry-level computer service technician position. Provides extensive hands-on work with Windows 2000 and/or XP, including using common GUI and command line tools, registry editing, System backup and Recovery, Networking, and O.S. Troubleshooting. This course helps prepare you for the CompTIA A+ 602 Exam. Prerequisites: CNG 1021</p> <p>4 Credits Arapahoe Community College</p>	ELE	69022
ACC CNG 2012 Windows Server Config	<p>ACC CNG 2012 Configuring Windows Server Provides students with the knowledge and skills that are required to install and configure a Microsoft</p>	ELE	690264

Superintendent File: IGA-E-2

	<p>Windows Server. This course helps prepare students for a MTA (Microsoft Technology Associate) and/or MCSA (Microsoft Certified Solutions Associate) exams. Prerequisite: CNG 1001 or CNG 1024.</p> <p>4 Credits Arapahoe Community College</p>		
ACC CNG 2053 Firewalls	<p>ACC CNG 2053 Firewalls and How they Work Introduces students to the design and implementation of firewalls. Covers such topics as firewalls using CISCO Routers, Microsoft server platform and UNIX platform. Focuses on how firewalls function in these environments and the basic steps to plan and implement firewalls. Prerequisite: CNG 1032</p> <p>4 Credits Arapahoe Community College</p>	ELE	690253
ACC CSC 1019 Intro to Programming (Python)	<p>Focuses on a general introduction to computer programming. This course emphasizes the design and implementation of structured and logically correct programs with good documentation. It is centered on basic programming concepts, including control structures, modularization, and data processing. A structured programming language is used to implement program designs. It emphasizes the writing of multiple programs following the software development process, from start to finish, including design, implementation, and testing.</p> <p>3 Credits Arapahoe Community College</p>		69013
ACC CNG 2024 Microsoft Windows Wireless Network	<p>Provides the student with the Microsoft official curriculum from the Microsoft Regional Academy. Offers detailed instruction on the foundation concepts and technologies of wireless data networking. Upon completion of this course, students are prepared to take the Certified Wireless Network Administrator (CWNP) Certification Exam. Prerequisite: CNG 1001 or CNG 1024.</p> <p>4 Credits Arapahoe Community College</p>	ELE	690254
ACC CNG 2057 Network Defense and Countermeasures	<p>Examines the tools, techniques and technologies used in the technical securing of information assets. This course provides in-depth information of the software and hardware components of Information Security and Assurance. Topics include firewall configurations, hardening Unix and NT servers, Web and distributed systems security and specific implementation of security modes and architectures. The curriculum maps to the Security Certified Network Professional (SCP) Network Defense and Countermeasures exam. Prerequisite: CNG 1032</p>	ELE	690255

Superintendent File: IGA-E-2

	3 Credits Arapahoe Community College		
ACC CNG 2058 Digital Forensics	Exposes the student to the field of digital computer forensics and investigation. This class provides the student with methods to properly conduct a digital forensics investigation including a discussion of ethics. Topics covered include fundamental concepts, history of computer forensics, file structures, data recovery techniques, computer forensic tools and analyses. Prerequisite: CNG 1032 4 Credits Arapahoe Community College	ELE	690262
ACC CNG 2043 Cloud Security and Cyber Law	Introduces concepts of cloud architecture, cloud security, and the law as it pertains to cloud deployment. Focuses on the mechanics of security in the cloud service models: Infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS). Prerequisite: CNG 1032 or CNG 1042. 3 Credits Arapahoe Community College	ELE	690265
ACC CIS 2087 Cooperative Education	Provides students an opportunity to gain practical experience in applying their occupational skills and/or to develop Specific skills in a practical work setting. The Instructor works with the student to select an appropriate work site, establish learning objectives and to coordinate learning activities with the employer or work site supervisor. 3 Credits Arapahoe Community College	ELE	690287
ACC CIS 2002 Automated Project Management	Provides an in-depth exploration of project management concepts and techniques. This course uses software to create project plans and manage projects. Critical thinking, planning, and communication to achieve a project goal are emphasized. Prerequisite: CIS 1018 or CSC 1005 or CIS 1035 or CIS 1055. 3 Credits Arapahoe Community College	ELE	690288
ACC CIS 2040 Database Design & Development	Introduces the basic concepts of relational databases, data storage, and retrieval. Covers database design, data modeling, transaction processing, and introduces the Structured Query Language (SQL) for databases. 3 Credits Arapahoe Community College	ELE	690240
ACC CIS 2043 Introduction to SQL	Introduces Structured Query Language (SQL) including creation of database structures and how to store, retrieve, and manipulate data in a relational	ELE	690243

Superintendent File: IGA-E-2

	<p>database. This course also covers creating tables and views, using indexes, and developing stored procedures and triggers. Prerequisites: CIS 1045 or CIS 2040.</p> <p>3 Credits Arapahoe Community College</p>		
<p><i>Certified Ethical Hacker</i></p>	<p><i>Delivers a comprehensive overview of network security, including general security concepts from both Security+ and Certified Ethical Hacker. Students will study various attack types including buffer overflows, SQL injections, Cross-site scripting, etc. Cryptography basics are incorporated, and operational/organizational security is discussed as it relates to physical security, disaster recovery, and business continuity. Computer forensics is introduced. The minimum age for this class is 16. Considering the nature of this course, applicants must be approved by the administration to take this course.</i></p>	<p><i>ELE</i></p>	<p><i>This course will be proposed in Oct. 2024.</i></p>

Superintendent File: IGA-E-2

Signature Page

Does the Career and Technical Education (CTE) Coordinator approve adoption of this program?

*** Your signature below indicates your approval of the program.*

Signature _____ *Aimee Barker* _____

Does the Chief Assessment Officer (or designee) approve adoption of this program?

*** Your signature below indicates your approval of the program.*

Signature _____ *Matt Reynolds* _____

Does the Assistant Superintendent approve adoption of this program?

*** Your signature below indicates your approval of the program.*

Signature _____ *Danny Winsor* _____

Does the Board of Education approve adoption of this program?

Yes

No

Date of BOE Meeting _____

Signature _____

Superintendent File: IGA-E-2

Office use: The following information is required to build individual courses into Infinite Campus


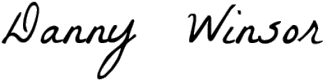
Credit Type: (FNA, PRA, MAT, etc)	
Department Code:	
Course Number:	
Course entered in NCAA database if applicable.	
Update Graduation Competencies course document if applicable for Math and English courses.	
VIP Code:	
CIP Code:	
Add to HEAR list, if applicable.	
Course Mapping SCED code:	
Date entered into Infinite Campus	
Credit amount:	

Document Details

Title	CTE Pathway Proposal IGA-E-2 - Legacy Secure Network Technologies (NEW pathway) (1).pdf
File Name	CTE Pathway Proposal IGA-E-2 - Legacy Secure Network Technologies (NEW pathway) (1).pdf
Document ID	f09c607dc66e4e1ebb266d3d95dfe65c
Fingerprint	eb9a66ce07afcf56d788b5fdc50fe1c
Status	Completed

Document History

Document Created	Document Created by Tammy Melanson (tmelanson@dcsdk12.org) Fingerprint: b35e0e4080a64c1aef6bbfed006323b4	Oct 31 2023 05:47PM America/Denver
Document Sent	Document Sent to Aimee Barker (AJBARKER@dcsdk12.org)	Oct 31 2023 05:47PM America/Denver
Document Viewed	Document Viewed by Aimee Barker (AJBARKER@dcsdk12.org) IP: 38.19.175.49	Nov 01 2023 07:52AM America/Denver
Document Viewed	Document Viewed by Aimee Barker (AJBARKER@dcsdk12.org) IP: 18.214.213.34	Nov 01 2023 07:52AM America/Denver
Document Viewed	Document Viewed by Aimee Barker (AJBARKER@dcsdk12.org) IP: 38.132.97.166	Nov 01 2023 07:53AM America/Denver
Document Signed	Document Signed by Aimee Barker (AJBARKER@dcsdk12.org) IP: 38.19.175.49 <i>Aimee Barker</i>	Nov 01 2023 07:53AM America/Denver
Document Sent	Document Sent to Matt Reynolds (mjreynolds@dcsdk12.org)	Nov 01 2023 07:53AM America/Denver

Document Viewed	Document Viewed by Matt Reynolds (mjreynolds@dcsdk12.org) IP: 66.85.41.187	Nov 01 2023 10:26AM America/Denver
Document Viewed	Document Viewed by Matt Reynolds (mjreynolds@dcsdk12.org) IP: 54.224.82.111	Nov 01 2023 10:26AM America/Denver
Document Signed	Document Signed by Matt Reynolds (mjreynolds@dcsdk12.org) IP: 66.85.41.187 	Nov 01 2023 10:26AM America/Denver
Document Sent	Document Sent to Danny Winsor (drwinsor@dcsdk12.org)	Nov 01 2023 10:26AM America/Denver
Document Viewed	Document Viewed by Danny Winsor (drwinsor@dcsdk12.org) IP: 66.85.41.190	Nov 01 2023 10:27AM America/Denver
Document Viewed	Document Viewed by Danny Winsor (drwinsor@dcsdk12.org) IP: 44.213.241.2	Nov 01 2023 10:27AM America/Denver
Document Signed	Document Signed by Danny Winsor (drwinsor@dcsdk12.org) IP: 66.85.41.190 	Nov 01 2023 10:27AM America/Denver
Document Completed	This document has been completed. Fingerprint: eb9a66ce07afcf56d788b5fdc50fe1c	Nov 01 2023 10:29AM America/Denver