



Program Viability Committee Recommendations to Academic Senate

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Program Revitalization Form

This form is used after labor market information (LMI) is obtained through the Center of Excellence (COE, www.coecc.net).

Name of Proposed Program:

Network Technology

Name of Persons Submitting this Proposal:

Lee Hilliard, Don Carlson, and Wendy Brill-Wynkoop

Date of Proposal Submission:

05/18/2020

Type of Program:

Type of Program		Rationale
✓	AA/AS	
	AD-T	
✓	CTE Credit Certificate of Achievement	
✓	CTE Credit Certificate of Specialization	
	Noncredit Certificate of Competency (i.e. basic skills, and ESL)	
	Noncredit Certificate of Completion (i.e. work-force preparation and short-term vocational)	

Program Description:

Please provide a short overview of the program(s), its purpose, and goals:

The Computer Networking Program will prepare students for an entry-level position in an Information Technology related industry with an emphasis on systems administration or network administration. This career education program instructs students in relevant job skills in computer networking in which the technology is continually evolving. Currently, there is a degree program and three certificates:

The Associate in Science Degree and Certificate of Achievement Computer Networking has classes that are designed for first-time college students, transfer students, re-entry students, and current industry employees requiring skill enhancement or upgrade training. Emphasis is placed on hands-on labs and case studies designed to apply principles and develop troubleshooting skills in real-world scenarios. Students can prepare for industry certifications from industries and organizations such as BICSI, Cisco, CompTIA, VMware, or Microsoft.

The Certificate of Specialization: System Associate allows students to gain skills in the design configuration and maintenance of LANs and develop practical experience in Microsoft supported network technologies, network troubleshooting skills, Windows client OS, Windows server OS, Active Directory.

The Certificate of Specialization: Network Engineer allows students to gain advanced skills in the design, configuration, and maintenance of LANs and WANs and to develop advanced experience in, routing, IP addressing, Cisco supported network technologies, network troubleshooting skills, WAN technologies, VLANs, OSPF, EIGRP, VoIP, WLANs, and security.

The Certificate of Specialization: Network Associate allows students to gain skills in the design configuration and maintenance of LANs. Develop practical experience in cabling, routing, IP addressing, Cisco supported network technologies, network troubleshooting skills, WAN technologies, VLANs, and OSPF..

Section 1 – Program Justification

1. Does the Regional Labor Data support this proposal? If so, how? Please attached labor market research report as an appendix.

The use of technology and the connection of technology to the internet is a growing market. When analyzing labor market research, it is difficult to identify precisely which SOC Codes to focus on in the LMI data. As technology has become more prevalent in everyday life, the need for security has risen at an exponential level. The California Community College Chancellor Office links to helpful tools on the CyberSeek site to help clarify the Cybersecurity Career Pathway (<https://www.cyberseek.org/pathway.html>). This site identifies networking as the first stepping stone and fundamental skill set for all Cyber Security training.

In March 2020, The Center of Excellence (COE) identified the following key findings Computer Infrastructure and Support:

- In the South Central Coast region, the number of jobs related to Computer Infrastructure and Support are expected to remain steady, over the next five years, for Computer User Support Specialists and Computer Network Support Specialists, increase for Information Security Analysts and Database Administrators and decrease for Computer Programmers.
- All related occupations are anticipated to experience a low risk of automation.

- In 2018 there were 1,041 regional completions in programs related to the occupations identified as related to Computer Infrastructure and Support and 593 openings, indicating an oversupply.
- Typical entry-level education ranges from some college, no degree for Computer User Support Specialists, an Associate's degree for Computer Network Support Specialists, and a Bachelor's degree for all other occupations.
- Completers of Computer Infrastructure and Support programs from the 2015-2016 academic year had a median annual wage upon completion of \$37,661.
- 73% of students are employed within a year after completing a program.
- 65% of students are earning a living wage.

In 2018, there were 2,534 employer postings for occupations related to Computer Infrastructure and Support. The top occupations include the following:

- Computer User Support Specialists - 1,297 job postings
- Information Security Analysts - 503 job postings, Database Administrators -320 job postings
- Computer Programmers - 279 job postings
- Computer Network Support Specialists - 135 job postings

Demand for information technology (IT) workers is high and should continue to grow as firms invest in newer, faster technology and mobile networks. The COE report solely focused on the geographic region included in the South Central Coast Region consists of San Luis Obispo County, Santa Barbara County, Ventura County, and the following cities from North Los Angeles County: Canyon Country, Castaic, Lake Hughes, Lancaster, Littlerock, Llano, Newhall, Palmdale, Pearblossom, Santa Clarita, Stevenson Ranch, and Valencia. College of the Canyons is physically close enough to both Los Angeles and Orange Counties, and the LMI data from those two regions significantly increases the need for training opportunities in computer networking.

2. If a Transfer Program, are there local universities with this program for students to transfer to? If so, please list these institutions.

Transfer programs in California are limited in the computer networking area. Many students can find employment without continuing their education at the university level. Two private universities Western Governors University and Brandman University, now offer a Bachelor of Science in Network Operations and Security and Bachelor of Science in Computing Technology, respectively. Brandman University, Bachelor of Science in Computer Technology, is currently offered in University Center at College of the Canyons. On the state level, several organizations are working on expanding four-year programs in Information Technology at the public universities. Still, these institutions have been slow to adopt the model curriculum.

3. What is the projected demand for this program in the future, and how is that demand favorable to the committee supporting this proposal?

Technology has permeated all aspects of modern life, including web access, e-mail, automobile GPS navigation, smart buildings, and smartphones, all of which are dependent on network infrastructure communication. That dependency is projected to grow, particularly with the emergence of the Internet of Things (IoT), everything attached to the network. According to the recent COE report, in the South Central Coast region, the number of jobs related to Computer Infrastructure and Support are expected to remain steady, over the next five years, for Computer User Support Specialists and Computer Network Support Specialists, increase for Information Security Analysts and Database Administrators, yet decrease for Computer Programmers.

4. What have the enrollment trends been over the past 5 years, and how do these compare to the anticipated labor market demand for the program?

Enrollment trends have been declining. In 2014-15 the enrollment was 63.84 FTES with a headcount of 132, and in 2018-19 it was 50.14 FTES and a headcount of 113. There is anticipated growth in the field of 8% for Computer User Support Specialists positions and 6% for Computer Network Support Specialists jobs from 2018-2023, identifying a gap between employment openings and enrollment.

Typically, enrollments will soften when the economy is strong and predicted with the upcoming recession; at the college, enrollments will shortly increase as people return to the college for retraining. Computer Networking is a field that could greatly benefit from this cycle in the community colleges enrollments.

The department faculty participated in the California Career Pathways Trust (CCPT) grant to address the declining enrollments by offering classes at the local high schools. Whether it was due to the course offerings or the curriculum structure, the high school pathway was not as successful as anticipated.

5. Please review your most recent Program Review(s) sections related to course offerings and frequency.

a. How are the course/section fill rates? Comment on any patterns during term, time of day, days or locations.

In recent years, The classes that tend to fill and run are the applicable degree classes. The majority of the program's students are working adults and prefer section offerings that are at night and weekends to accommodate their schedules. Currently, the courses are offered at the Valencia Campus, where the computer networking lab facilities and equipment are based. The fill rate for the sections offered at the Valencia campus in fall 2019 was 84%. Enrollment caps are less than typical lecture classes, which are common for equipment-intensive career education classes and limited to 24 students per section. From 2014-19 the class enrollment averaged 20 students per section.

b. What is the frequency of course section offerings? If there has been (or will be) a reduction in course section offerings, what is the rationale for that reduction?

The course offerings have been consistent for the past four or five years, with an average of 10 sections each year with a high of 12 sections and a low of 9. With a consistent fill rate of 85%, no

course section reductions are planned in the program currently. It is the goal of the program to focus on enrollment growth, rather than section reduction.

c. Identify courses that have not been successfully offered in two years.

- CMPNET-167 - MCSA Prep 2
- CMPNET-191 - Linux LPIC 1
- CMPNET-251 - CCNP ROUTE
- CMPNET-253 - CCNP SWITCH & TSHOOT
- CMPNET-271 - CCNA Security

The above courses are specialized, non-degree applicable courses, and skilled-based. The students who take these courses are often already employed in the industry. In the past two years if offered the courses typically are low enrolled and have to be canceled.

6. Please review your most recent Program Review(s) and describe important trends in student retention, success, and degree completion.

The program's rates for retention and success of 88.5% and 75.6%, respectively, compared to the college's overall retention and success rates of 89% and 76% are appropriate.

The department considers student success as a student completing their educational goals. Those goals for most students are job skills and industry certification and may not always be a degree or certificate from the college.

In regards to data from the program review, it is difficult to predict a trend in completion. Overall in the last eight years, Degree/Certificate completions between 2011 - 2018 have ranged between 26 students at a high in 2013-14 to a low of 10 in 2015-16 with an average of 19 awards per year.

Award Type	2014-15	2015-16	2016-17	2017-2018	2018-19
AA/AS degree	11	4	11	5	9
Certificate of Achievement	7	6	9	6	9
Certificate of Specialization	3	1	5	4	1

7. If applicable, describe the success rate of students passing industry-relevant certifications or state or national licensing exams?

Data not currently available for industry certification pass rates, such as from Cisco. The department recommends that students complete industry certifications at the COC Testing Center. One solution would be to create an exit survey to collect data on student pass rates.

Section 2 – Program and Curriculum Design

Program Requirements:

8. Please provide a brief narrative about the program requirements.

The Computer Networking's program's mission is to prepare students for transfer while providing workforce skills and technical competencies. The current program descriptions are defined in the PROGRAM DESCRIPTION section of this document on page two. The updated programs and courses are listed below:

Associate Degree: Computer Networking (including GE requirements)

There are two options: CCNA Network Administrator or MCSA Systems Administrator, which is designed to transfer to a four-year college or university. Classes are designed for first-time college students, re-entry students, and current industry employees requiring skill enhancement or upgrade training. Emphasis is placed on hands-on labs and case studies designed to apply principles and develop troubleshooting skills in real-world scenarios. Students can prepare for industry certifications from industries and organizations such as BICSI, Cisco, CompTIA, or Microsoft.

ESYST-101+	Basic Electronics	3
ESYST-121	IoT-Connecting Things	3
ESYST-131	IoT - Python Programming	3
NETECH-111	Computer Maintenance: A+ Certification Prep	3
NETECH-113	Data Center	3
NETECH-142	MCSA: Windows Server OS	3
NETECH-151	CCNA-1: Introduction To Networks	3
NETECH-152	CCNA-2: Switching, Routing, and Wireless Essentials	3
NETECH-153	CCNA-3: Enterprise Networking, Security, and Automation	3
NETECH-219	Security+ Certification Prep - Brandman Requirement	3

Certificate of Achievement: Computer Networking (no GE requirements)

The Certificate has the same requirements as the degree listed above without GE requirements.

Certificate of Achievement: Internet of Things

Allows students to gain skills in technical support for the Internet of Things (IoT), adding, troubleshooting, and maintaining the myriad of devices being added to the network.

ESYST-101	Basic Electronics	3
ESYST-121	IoT-Connecting Things	3
ESYST-131	IoT - Python Programming	3
*ESYST-141	IoT - Security	3

Certificate of Achievement: Network Foundation

Allows students to gain skills in technical support skills, helpdesk support, and end user support.

CAWT-101	Introduction to Computers	3
NETECH-103	Network Cabling Infrastructure	3
NETECH-111	Computer Maintenance: A+ Certification Prep	3
NETECH-113	Data Center	3

Certificate of Achievement: System Associate

Allows students to gain skills in the design, configuration, and maintenance of LANs and develop practical experience in Microsoft supported network technologies, network troubleshooting skills, Windows client OS, Windows server OS, Active Directory.

NETECH-141	MTA: Windows Client OS	3
NETECH-142	MCSA: Windows Server OS	3
NETECH-143	MCSA: Administering Windows Server	3
NETECH-144	MCSA: Configuring Advanced Windows Server Services	3

Certificate of Achievement: Network Associate

Allows students to gain skills in the design, configuration, and maintenance of LANs, routers, switches, and devices comprising the network infrastructure.

NETECH-151	CCNA-1: Introduction To Networks	3
NETECH-152	CCNA-2: Switching, Routing, and Wireless Essentials	3
NETECH-153	CCNA-3: Enterprise Networking, Security, and Automation	3
*NETECH-155	CCNA CyberOps	3

Certificate of Achievement: Cloud/Virtualization

Allows students to gain skills in the design, configuration, and maintenance of LANs and develop practical experience in administering virtualization and cloud computing technologies.

NETECH-113	Data Center	3
NETECH-211	Linux+ Certification Prep	3
*NETECH-213	VMware vSphere - Install, Configure, Manage	3
*NETECH-215	Cloud+ Certification Prep	3

Certificate of Achievement: Network Engineer

allows students to gain skills in the design, configuration, and maintenance of LANs and WANs and to develop advanced experience in routing, IP addressing, Cisco supported network technologies, network troubleshooting skills, WAN technologies, VLANs, OSPF, EIGRP, VoIP, WLANs, and security.

NETECH-251	CCNP Enterprise Core	3
NETECH-253	CCNP Enterprise Adv. Routing & Services	3
NETECH-255	Wireless Technologies	3
NETECH-259	CCNA Security	3

9. What is the input about the quality of the program's design from program review, student evaluations, articulating universities, local business and/or industry, advisory committees, and/or the community?

The program solicits input from industry through bi-annual advisory board meetings and individual industry members at more frequent intervals. The faculty in the program have sought assistance from the college's administration who are connected with the SCV business community to help in identifying additional advisors for the program to rely upon for their expertise. Through these meetings with industry members (both formal and informal), curriculum and program changes were recommended that reflect current changes in technology and industry direction. For example, the Advisory Committee minutes from the Fall 2019 meeting are attached, show support from the members and industry partners for the curriculum changes, and pursuit of a transfer articulation with Brandman University.

In addition to the advisory board, the program has considered the recommendations of two reports the districts hired consultants to complete in spring 2018.

The first, "College of the Canyons' Computer Networking Equipment Inventory and Program Reconciliation" by Robert Grotgut, Bay Area DSN, suggested several program changes, including the district instigating the Program Revitalization process. In the recently proposed curriculum revisions, the department implemented several of the report's suggestions, including the addition of the Internet of Things and Python into curriculum and program modifications, including aligning the degree with the statewide model curriculum.

In the second report, "Evaluation of College of the Canyons Computer Networking Program," May 2018, by Bob Samson, Professor of Computer Networking, Mesa Community College, again recommended the need for Python in the curriculum was noted along with a reduction of 7 units classes to 3 units. Additionally, Samson recommended the department identify a four-year transfer pathway. This change in the credit hours for the class sections to three units per course will facilitate transfer and serve students' goals.

Both reports have other recommendations beyond the curriculum that will be addressed in other prompts in this document.

10. Complete the table below, which includes courses, unit requirements, and sequencing/frequency of course offerings for the program using the template below:

Please see attachment: Revised NETECH Course Matrix table.

ESYST-101	Basic Electronics	3 units
ESYST-121	IoT-Connecting Things	3 units
ESYST-131	IoT - Python Programming	3 units
NETECH-103	Network Cabling Infrastructure	3 units
NETECH-111	Computer Maintenance: A+ Certification Prep	3 units
NETECH-113	Data Center	3 units
NETECH-141	MTA: Windows Client OS	3 units
NETECH-142	MCSA: Windows Server OS	3 units
NETECH-143	MCSA: Administering Windows Server	3 units
NETECH-144	MCSA: Configuring Advanced Windows Server Services	3 units
NETECH-151	CCNA-1: Introduction To Networks	3 units
NETECH-152	CCNA-2: Switching, Routing, and Wireless Essentials	3 units
NETECH-153	CCNA-3: Enterprise Networking, Security, and Automation	3 units
NETECH-211	Linux+ Certification Prep	3 units
NETECH-219	Security+ Certification Prep - Brandman Requirement	3 units
NETECH-251	CCNP Enterprise Core	3 units
NETECH-253	CCNP Enterprise Adv. Routing & Services	3 units
NETECH-255	Wireless Technologies	3 units
NETECH-259	CCNA Security	3 units

11. For the new courses that need to be created, please provide a brief course description and include proposed units in the table above.

Please see attachment: Revised NETECH Course Matrix.
New Courses are highlighted in dark green.

ESYST-141	IoT - Security	3 units
NETECH-155	CCNA CyberOps	3 units
NETECH-213	VMware vSphere - Install, Configure, Manage	3 units

12. How are students able to complete the program in a timely manner and under a certain amount of units (as required by AD-T regulations) given the program's course requirements, general education requirements, and frequency of course offerings?

When classes are canceled due to low enrollment, this can affect students' ability to complete certificates or specific courses in the program. Unexpected section cancellations are particularly problematic when an employer may need an employee to complete courses promptly (particularly for industry certifications). It is important to note that currently, completion of the program and degree attainment is not the primary educational objective of a segment of our student population; many of our students already have bachelor degrees. The primary educational objective of our students is job skills and industry certification. However, with the new curriculum being proposed, having a strong tie with a transfer degree to Brandman University's Bachelor of Science in Computer Technology will expand the market for students seeking an associate's degree in the field from College of the Canyons.

Bob Samson from Mesa Community College had several suggestions in the "Evaluation of College of the Canyons Computer Networking Program," May 2018, regarding scheduling that could facilitate students' ability to achieve the program on time. He recommends scheduling to maximize a student's ability to complete one specific industry certification in a semester by considering the use of 8-week courses, hybrid formats, afternoon classes, and even evaluation of prior learning with a Credit-by-Exam option. He also recommends the use of dual enrollment to strengthen the high school to college pathway. The department has already implemented many of these suggestions including the adoption of 8-week classes, weekend courses, and high flex formats course offerings to accommodate student scheduling needs.

Locally the development of program maps and the newly adopted Program Mapper system will help the college as a whole have more data to help plan course offerings that accommodate students' needs.

Section 3 – Other Factors

13. Please explain how the program meets the standards of outside accrediting agencies, licensing boards, and governing bodies, if applicable?

The program courses are well aligned to prepare students to sit for several industry certifications.

14. Please comment on how the existing facilities are meeting the needs of the program.

The department faculty and the two independent gap analysis report authors agree that in general, the program equipment and facilities are current and meet the curriculum's needs. Bob Samson, in particular, noted that equipment like the "rack of non-cabled router and switches" was particularly necessary to provide a hands-on experience for students. The importance of maintaining hands-on skills is often something that is overlooked when programs move to virtualization. The program also utilizes a proprietary virtual platform for students to log in and work on networking remotely from the home or office.

In Robert Grotegut's report, he noted that the program's equipment was appropriate for the curriculum, and the program was well supported by computer support. Both authors recommend the expanded use of NetLabs, a virtual computer networking simulator. The program faculty feel that their proprietary virtualization is providing the students what they need - remote access and practice in a virtual format when access to equipment is limited.

15. Please comment on how the program is able to evolve so that it is using the most current and relevant technology and/or equipment to support the needs of the program.

If the current course revision, additions, and program modifications are approved through the local curriculum processes, the program will be teaching the latest relevant technologies. In general, programs that solicit regular input remain current. Looking ahead, the following strategies should be encouraged by the district:

- It would benefit the program to have more industry members at its disposal for program consultation. Members of the administration who regularly meet with business leaders could help solicit membership for the program's advisory board.
- Site visits or meeting with other computer networking programs in the state or region
- Industry-relevant professional development or faculty externships

16. Please comment on the ability to hire qualified faculty and/or staff to support this program.

Currently, due to low enrollment, the program does not have a great need for adjunct faculty. However, with increased enrollment growth, the program will need to recruit and hire for this program, particularly with the new curriculum changes. Support from Human Resources in advertising job openings through targeted marketing to reach skilled professionals is essential to recruit qualified adjuncts.

17. If applicable, how has grant funding provided relevant and effective resources for this program?

Strong Workforce and Perkins have provided some resources for this program over the years, including for professional development for faculty and the purchase of equipment (such as new servers). In addition, the program relies heavily on industry partner donations allowing for a variety of equipment for students to explore in the curriculum.

Section 4 – Overall Evaluation

18. In your evaluation of the program, what are the three biggest challenges?

The challenges are easy to identify, and the solutions easy to suggest. However, none of the answers will be manifested without the agreement of the discipline faculty and administration to collaborate on these solutions. The administration has to be prepared to put resources behind the suggestions (money, equipment, and human resources), and the faculty must be willing to try a new direction. Faculty members will not be willing if they are concerned that their livelihood, the program is in jeopardy, or that

students and industry needs are not being met. The administration has mandated the direction of the program to be that of Cyber Security and has, at times, been contrary to faculty expertise and goals. While the students who are in computer networking may end up in a field of Cyber Security, the computer networking program itself does not have to develop this track. The computer networking program has already developed many of the courses that align with the transfer model curriculum the state has identified for Cyber Security. Changes in the leadership of several deans and Vice Presidents of Instruction have resulted in promises not being kept and inconsistent support for the direction of the program.

The program has many challenges and would not have been recommended for the Program Revitalization process if it didn't. To only identify three challenges may not collect all the good work and suggestions that have gone into the last two years of trying to help this program reboot. Therefore three goals are listed below with recommendations for reaching those goals.

Clarifying the program pathway for students with a goal of increased enrollment and completion

- Develop simple program maps illustrating the ability to complete the program in a timely manner
- Program course scheduling for student completion: consider short-term courses, hybrid, online classes, and time of day when sections are offered
- Consider Credit for Prior Learning, especially for students that are coming from industry
- Connection of curriculum to other relevant programs on campus from the students' viewpoint
- Consider course credit for completion of industry certifications
- Re-evaluate the high school to college pathway
- Apply for C-IDs courses that are part of the transfer model curriculum
- Approve program revisions that establish the transfer pathway to Brandman University
- Approve program revisions that establish industry relevant stackable certificates

Develop a full marketing plan and implement it with the goal of program enrollment growth

- Marketing plan included print and website materials that are consistently updated
- Outreach to local high schools, including educating high school advisors about the different computer technology programs at the college and how they connect to various transfer pathways and careers for students
- Inreach to our college counselors and career advisors about the college's different computer technology programs and how they connect to various transfer pathways and careers for students
- Host career days, open houses, and student advisement from the program faculty
- Host camps or competitions for high school students to become familiar with the computer networking program
- Develop Career Tree or other relevant tools for assisting students in career choices
- Develop a plan to increase student awareness of the importance of industry certifications offered at COC

Grow industry input with a goal of remaining current

- Provide relevant professional development and externships opportunities for discipline faculty
- Recruit additional advisory board members from the community
- Maintain the currency of the program technology, software, and equipment. Equipment and software that may be needed for a push to sudden requirement for the program to be remote (CODIV-19 and also looking at the future in a post-pandemic world)

Please attach appendices of supporting data and information here:

- Center for Excellence - LMI report
- NETECH-Matrix-Revised.pdf
- Brandman Bachelor of Science Computer Technology Transfer Pathway
- COC Courses that align with the Transfer Model Curriculum
- New course rationale
 - ESYST-141
 - NETECH-155
 - NETECH-213
 - NETECH-215
- CyberSeek - Networking Skills identified that lead to CyberSecurity
- Consultant Report: "College of the Canyons's Computer Networking Equipment Inventory and Program Reconciliation" by Robert Grotegut, Bay Area DSN
- Consultant "Evaluation of College of the Canyons Computer Networking Program," May 2018, by Bob Samson. Mesa Community College

Comparing COC NETECH to Model Curriculum Worksheet

CCC Major or Area of Emphasis: Information Technology

CSU Major or Majors: Information and Communication Technologies,

Information Systems, Information Technology

Total units 22-23 (*all units are semester units*)

Degree Type (*indicate one*): AA-T _____ OR AS-T _____ OR MC X

Required Core Courses: 13 units

Title (units)	C-ID	COC
Information & Communication Technology Essentials (4)	ITIS 110	NETECH-111*
Business Information Systems, Computer Information Systems (3)	ITIS 120	CIT-101
Introduction to Programming Concepts and Methodologies (3)	ITIS 130 or COMP 112	ESYST-131*
Computer Network Fundamentals (3)	ITIS 150	NETECH-151*

Select 6 units or 2 courses from the following:

Title (units)	C-ID	COC
Introduction to Systems Analysis and Design (3)	ITIS 140	
Routing and Switching Essentials (3)	ITIS 151	NETECH-152*
Systems and Network Administration (3)	ITIS 155	NETECH-113*
Introduction to Information Systems Security (3)	ITIS 160	NETECH-219*
Introduction to Cybersecurity: Ethical Hacking (3)	ITIS 164	
Digital Forensics Fundamentals (3)	ITIS 165	
Introduction to Database Management Systems (3)	ITIS 180	
Business Communication (3)	BUS 115	

Select 3 - 4 units or 1 course from the following:

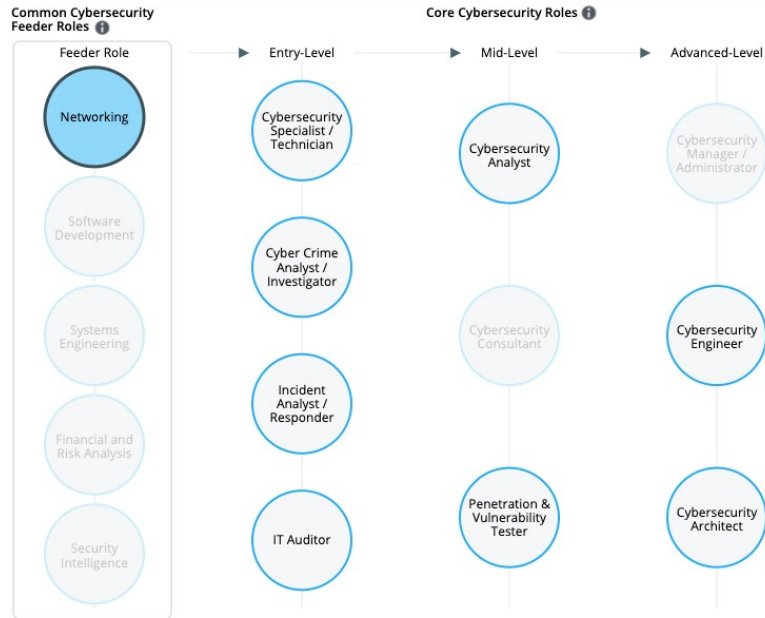
Title (units)	C-ID	COC
Introduction to Statistics (3)	MATH 110	MATH-140
Finite Mathematics (3)	MATH 130	
Business Calculus (3)	MATH 140	MATH-240
Single Variable Calculus I Early Transcendentals (4)	MATH 210	

Cybersecurity Career Pathway

Cybersecurity Career Pathway

There are many opportunities for workers to start and advance their careers within cybersecurity. This interactive career pathway shows key jobs within cybersecurity, common transition opportunities between them, and detailed information about the salaries, credentials, and skillsets associated with each role.

Share Embed



Networking

TOTAL JOB OPENINGS

299,126



REQUESTED EDUCATION (%)



COMMON JOB TITLES

- Systems Administrator
- Senior Network Engineer
- Solutions Architect
- Network Administrator

TOP CERTIFICATIONS REQUESTED

- Cisco Certified Network Associate (CCNA)
- Cisco Certified Network Professional (CCNP)
- CompTIA Security+
- IT Infrastructure Library (ITIL) Certification
- Cisco Certified Internetwork Expert (CCIE)

TOP SKILLS REQUESTED

- System Administration
- Linux
- Cisco
- Network Engineering
- VMware
- Technical Support
- Microsoft Active Directory
- Wide Area Network (WAN)
- Routers

TOP CYBERSECURITY SKILLS TO ADD

- Information Security
- Information Systems
- Network Security
- Cryptography
- Information Assurance
- Security Operations
- Risk Assessment
- Python
- Risk Management



[Home](#) → Cybersecurity Professionals Needed

Cybersecurity Professionals Needed

Due to high demand, the interest list for this program is currently closed. Additional online certificates in cybersecurity are available through partner colleges and can be found at [on the CVC-OEI's Online Certificates of Achievement web page](#).

There are multiple career paths in the field of cybersecurity that require different skills and abilities. Companies and institutions need thousands of individuals who can perform business and operations analysis, risk assessment of processes and systems, expose operational and technological vulnerabilities, identify potential threats, and develop recommendations and technological solutions to strengthen defenses.

10 COOLEST JOBS IN CYBERSECURITY

WHY THEY MAKE A DIFFERENCE AND HOW TO QUALIFY FOR THEM

Initial Jobs With Lots of Advancement Opportunities

- DIGITAL FORENSIC ANALYST/INVESTIGATOR**
 "The thrill of the hunt! It's CSI for cyber geeks! You never encounter the same crime twice."
 You are the detective in the world of cybersecurity, searching computers and networks for evidence in the wake of an incident.
- PENETRATION TESTER FOR SYSTEMS AND NETWORKS**
 "Be a hacker, but do it legally and get paid a lot of money!"
 You look for security vulnerabilities in target systems and networks to help enterprises improve their security.
- APPLICATION PEN TESTER**
 "We do operate need more of this, application security has been such a black hole for so long."
 You're a programming/security wizard, testing applications before deployment so they don't present opportunities for intruders.
- SECURITY OPERATIONS CENTER (SOC) ANALYST**
 "The fire rangers better catch the initial blaze, or there goes the forest."
 With an eye for detail and anomalies, you see things most others miss. You implement active prevention, active detection, active monitoring, active response.
- CYBER DEFENDER: SECURITY ENGINEER (ENTERPRISE AND ICS)**
 "A leg up on your IT and engineering buddies talk, despite the fact you are saving the world from the bad guys too."
 You implement and tune firewalls, IPS/IDS, patching, admin rights, monitoring, application white listing, more.

More Advanced Jobs - Open After A Few Years of Great Performance and Specialized Training

- HUNTER/INCIDENT RESPONDER**
 "The secret agent of geekdom. You walk in and say 'Oh, I take it from here.'"
 While everyone else is running around shouting, "The system's dead," you have the smarts and skills to rationally figure out why.
- SECURITY ARCHITECT**
 "You get to design the solution, and not just for the perimeter."
 You are creative and on top of the game both technically and in business. You design and build defensible systems and are part of an adopt team.
- SECURE SOFTWARE DEVELOPMENT MANAGER**
 "Coolest software developers."
 You protect the development team from making errors that will allow hackers to penetrate your organization and steal data. You are a programmer, but a programmer with special powers.
- MALWARE ANALYST / REVERSE ENGINEER**
 "The technical elite! Only go here if you have been called, you know who you are."
 You look deep inside malicious software to understand the nature of the threat - how it got in, what it exploited, and what it is trying to do or has done.
- TECHNICAL DIRECTOR / CISO**
 "Making decisions making things happen. That's coolness."
 You are at the top of the tech ladder. A strategic thinker, you're hands on the design and deployment of solutions. You hold the keys to tech infrastructure.

1 CYBER FAST TRACK

2 DISCOVER IF YOU HAVE THE APPTITUDE CYBERSTART: THE GAME

3 MASTER THE FOUNDATIONS CYBERSTART: ESSENTIALS

4 GET SKILLS EMPLOYERS NEED AND A COOL JOB

5 RUN OVER INTERVIEWS BECOME ACCEPTANCE

© 2018 The SANSInstitute. More information: CyberStart.US

Careers in Cybersecurity

Job Title	Median Earnings*
Cybersecurity Specialist/Technician	\$75,000 per year with 7,792 job openings
Cybersecurity Analysts	\$85,000 with 26,013 job openings
IT Auditor	\$86,000 per year with 6,915 job opening
Incident Analyst/Responder	\$99,000 per year with 6,605 job openings
Network Penetration & Vulnerability Tester	\$102,000 per year with 9,826 job openings

*See [CyberSeek](#)

There are multiple career paths in the field of cybersecurity that require different skills and abilities. Companies and institutions need thousands of individuals who can perform business and operations analysis, risk assessment of processes and systems, expose operational and technological vulnerabilities, identify potential threats, and develop recommendations and technological solutions to strengthen defenses.

[Explore Cybersecurity Pathways](#)

Earn an Online Certificate that will start your career in Cybersecurity

Students will earn a Certificate of Achievement in Cybersecurity that will prepare them for entry-level Cybersecurity jobs in less than one year. The certificate also serves as a strong foundation for those who wish to continue their training to achieve further certificates and degrees for higher-wage positions.

The online Cybersecurity Certificate Program is an innovative partnership that brings together subject matter experts (SMEs) from Cosumnes River, Fresno City, and Los Angeles Pierce Colleges.

Students will take 8 fully online, zero-cost textbook courses. Students will be placed in cohorts allowing individuals to develop peer relationships that will help support you through this accelerated pace of study.

Each course is 8-weeks in length with a 1 week break between courses. This accelerated-paced program of study will require students who are ready to commit the

time necessary to gain skills that will lead to greater employment opportunities.

In less than a year, you will complete these courses:

Business Information Systems, Computer Information Systems (ITIS 120)

Examination of information systems and their role in business. Focus on information systems, database management systems, networking, e-commerce, ethics and security, computer systems hardware and software components. Application of these concepts and methods through hands-on projects developing computer-based solutions to business problems.

Information & Communication Technology Essentials (ITIS 110)

This course provides an introduction to the computer hardware and software skills needed to help meet the growing demand for entry-level ICT professionals. The fundamentals of computer hardware and software as well as advanced concepts such as security, networking, and the responsibilities of an ICT professional will be introduced. Preparation for the CompTIA A+ certification exams.

Computer Network Fundamentals (ITIS 150)

This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP (Internet Protocol) addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for further study of computer networks. It uses the OSI (Open Systems Interconnection) and TCP (Transmission Control Protocol) layered models to examine the nature and roles of protocols and services at network, data link, and physical layers. Preparation for the CompTIA Network+ certification exam.

Routing and Switching Essentials (ITIS 151)

This course describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course students will be able to



California Community Colleges

configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks.

Systems and Network Administration (ITIS 155)

This course will provide a student with the knowledge and skills required to build, maintain, troubleshoot and support server hardware and software technologies. The student will be able to identify environmental issues; understand and comply with disaster recovery and physical / software security procedures; become familiar with industry terminology and concepts; understand server roles / specializations and interaction within the overall computing environment.

Introduction to Information Systems Security (ITIS 160)

An introduction to the fundamental principles and topics of Information Technology Security and Risk Management at the organizational level. It addresses hardware, software, processes, communications, applications, and policies and procedures with respect to organizational Cybersecurity and Risk Management. Preparation for the CompTIA Security+ certification exams.

Cybersecurity Operation (ITIS 166)

An introduction to cybersecurity operations including detecting cybersecurity breaches and effectively responding to security incidents. This class is meant to provide a background for students desiring entry level work as a cybersecurity analyst within security operations centers.

Network Security (ITIS 167)

Teaches network security principles including firewall technologies, AAA, intrusion prevention, securing LANs, implementing VPNs, and managing secure networks.

- [Cybersecurity Collaborative Home](#)
- [Frequently Asked Questions](#)

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Career Education Advisory Board Minutes
College of the Canyons – Computer Networking and Electronic Systems
11/13/2019

William S. Hart Union High School District

NAMES/ TITLES OF ADVISORY COMMITTEE MEMBERS	Name of Company, Business, College, High School and Title	Email Address	Telephone Number	ATTENDANCE Present or Absent
Chair				
Business Partners including Industry, Non-Profit and Community Based Organizations				
Eric Frias	Pharmavite LLC	efrias@pharmavite.com		
Bill Kouzi	Simpatico Systems	bill@simpaticosystems.com		
Program Chair Lee Hilliard	Department Chair / COC	Lee.hilliard@canyons.edu		
Dean Donald Carlson	Dean, School of Business / Interim Dean, School of Applied Technologies	Donald.carlson@canyons.edu		
4-year college discipline instructor(s)				
Student Representative(s)				
K12 discipline instructor(s)				
Jerry Ostrove	Computer Science Teacher / Valencia High School	Jostrove@hartdistrict.org		

Jeremy Perkins	Computer Science Teacher / Golden Valley High School	jperkins@hartdistrict.org		
Discipline faculty				
Parent(s)				
Counselor(s)				
Staff				
Other guest(s)				
Keri Aaver	Director of Job Placement / COC	Keri.aaver@canyons.edu		
Samuel Bolanos	Computer Networking Lab Technician / COC	Samuel.bolanos@canyons.edu		
Harriet Happel	Dean of Career Education / COC	Harriet.happel@canyons.edu		
Holli Kalaleh	Career and College Readiness / Hart School District	hkalaleh@hartdistrict.org		

AGENDA

	Notes	ACTION
<p>1. Welcome and Introductions (Director, Career and Technical Education)</p> <p>1.1 Statement of Purpose</p> <p>1.2 Review/Approval of Minutes</p> <p><i>Motion to Approve the minutes of the last meeting by:</i></p> <p><i>Motion Seconded by:</i></p>	<p>Meeting Commenced: 12:05PM</p> <p>Welcome and Introductions: All</p>	
<p>2. Review of Course Sequence</p> <p>2.1 Hart District</p> <p>2.2 College of the Canyons</p> <p>2.3 CSU and UC Articulation</p>		
<p>3. Current Status of Program (Advisory Board Chair):</p> <p>3.1 Numbers of students</p> <ul style="list-style-type: none"> ▪ Special Population/Non Traditional Core Indicators (Perkins) ▪ Reading proficiencies (Hart District) <p>3.2 Student success – completers</p> <p>3.3 Student success - employment</p> <p>3.4 Labor Market Analysis</p> <ul style="list-style-type: none"> ▪ Job Titles ▪ Median Living Wage ▪ Validated Need for Training <p>3.5 Industry Certification (if applicable)</p>	<ul style="list-style-type: none"> - Enrollment has been declining. - There is now AA-T degree that can go towards a Computer Technology Bachelor’s degree through Brandman University. - Lee is hoping that AB288 will provide the program an opportunity to offer dual enrollment at the high schools. - The Brandman Degree aligns with the California Model curriculum. - Lee is working with the Program Viability Committee on revitalizing the program. - A Security class is scheduled this summer but there is a chance it may not run. - IOT Security will be added to the curriculum in the near future. 	

3.6 Program Accomplishments

- The average age of students in the program is thirty to thirty one years old.
- A lot of students in the program are already working in the field.
- The IT Essentials course at Golden Valley struggled with enrollment. The name of the course was changed to Cyber Security and is receiving a lot more interest from students.
- The Criminal Justice Department is getting into Cyber Security. A suggestion was made for the Computer Networking and Criminal Justice Programs to collaborate. Program Viability will need to look at where the curriculum fits best.
- It would be more valuable to students to learn problem-based scenarios and the skills to solve them instead of just the technical aspect.
- Support was received from the board to move forward with an Articulation Agreement with Brandman.
- Students want to know how they will be able to apply what they are learning in the class and why it is relevant.
- Project Based learning can help keep students interested.
- The curriculum is too dry for the students.
- Students should be shown the overall picture and then be taught how to fix something.
- Consider promoting Cyber Security to those in the Business and Law professions.
- When will Cyber Security be a General Education requirement?
- Courses were originally three and a half units
CCNA-1 and CCNA-2 were combined in one seven unit class.

	<ul style="list-style-type: none"> - It may be beneficial to return to offering eight week courses. - Today's generation care more about changing the world than making money. - Network Cabling will be not be retired but will no longer be a degree requirement. - Two IOT classes, 121 and 131, will be offered in the spring 2020 semester. They will be held on Tuesday and Thursday evenings. 	
<p>4. Industry</p> <p>4.1 Review Required Skills for Competency:</p> <ul style="list-style-type: none"> ▪ Do the program completers meet the current industry standard or industry need? ▪ What curriculum modifications would you suggest to meet skill gaps? ▪ Review of Assessment Procedures ▪ What equipment/ facility needs can you identify that would better prepare students to enter your field? <p>4.2 What employability skills do workers need in your field?</p> <ul style="list-style-type: none"> ▪ Able to think critically, problem-solve ▪ Able to find resources ▪ Effective interpersonal skills ▪ Communication skills - oral, written ▪ Adequate time management and organization - prioritization skills ▪ Personal qualities - professionalism ▪ Able to project manage ▪ Other? <p>4.3 What changes/ trends are occurring in the industry that will affect employer needs?</p>	<ul style="list-style-type: none"> - Bill Kouzi from Simpatico Systems informed the board that they are currently hiring interns and says that he is interested in partnering with COC. - Keri Aaver will connect Bill with Cindy Nelson in the Internship Department. - Bill offered to connect the school with other organizations. 	

<p>4.4 Work-Based Learning Opportunities</p> <ul style="list-style-type: none"> ▪ Classroom visits by industry ▪ Informational Interviews ▪ Site visits/Field Trips ▪ Ride Alongs ▪ Project Based Learning ▪ Internships <p>4.5 Postsecondary Scholarship Creation</p>		
<p>5. Program plan for improvement</p> <p>5.1 Strengths of program</p> <p>5.2 Weaknesses of program</p> <p>5.3 Labor market information needed to justify new content/ courses</p> <p>5.4 Resources needed and the role of industry: (equipment/ mentoring / scholarships/ awards/ hosting field trips/ serve as a speaker at career events/ other)</p> <p>5.4 What other suggestions do you have for program improvement?</p>		
<p>Motion to Approve Course Curriculum and Continue Operation of the Program was made by:</p> <p>Motion Seconded By:</p> <p>All in favor: Yes</p> <p>All opposed:</p>		

<p>6. Other business</p> <p>6.1 Additional Items</p> <ul style="list-style-type: none">▪ Hiring <p>6.2 Next meeting time, place, date.</p>	<p>Meeting adjourned: 1:32PM</p>	
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NEW COURSE DOCUMENTATION

To help the Curriculum Committee assess the need and relevancy of the proposed course, please complete the following:

COURSE NUMBER: ESYST-141

COURSE TITLE: IoT - Security

NEED (describe how this course will uniquely serve students in your current program(s):

The field of networking is moving in the direction of attaching everything to the network, referred to as the Internet of Things (IoT), and those devices need to be secured from the onslaught of hackers and intrusions on the network.

EVIDENCE OF JUSTIFICATION/NEED (check **all** that apply and **attach** supporting documentation; must have some evidence to support proposal):

- | | |
|--|---|
| <input type="checkbox"/> School/Department Minutes | <input checked="" type="checkbox"/> Program Review |
| <input type="checkbox"/> Advisory Board Minutes | <input checked="" type="checkbox"/> Labor Market Data |
| <input type="checkbox"/> COE Data Summary | <input type="checkbox"/> Student/Employer Survey |
| <input type="checkbox"/> | <input type="checkbox"/> |

CURRICULAR CONSIDERATIONS

TO WHICH PROGRAM WILL THIS COURSE BELONG (please attach full program including this course):

Network Technology - Certificate of Specialization: Internet of Things

IF THIS COURSE WILL REPLACE AN EXISTING COURSE OR COURSES, PROVIDE THOSE COURSE NUMBERS AND TITLES, AND THE RATIONALE FOR REPLACEMENT:

PLEASE **COMPLETE SECTION A, B, OR C** DEPENDING ON THE TYPE OF COURSE YOU ARE PROPOSING:

(A) FOR **TRANSFER COURSES, PROVIDE THE FOLLOWING REGARDING ARTICULATION:**

Is there a C-ID descriptor for this course? If so, please provide (C-ID): No
Which local CSU's accept this course, and do they accept it for content credit or units? (Assist): N/A
How many CCCs have approved this course (CCC Curriculum Inventory): N/A

(B) FOR **CAREER EDUCATION COURSES (CE):**

Provide information on C-ID descriptors and transfer/articulation from (A) <i>if applicable</i> : N/A
List sample curriculum from other districts, <i>if applicable</i> (previously approved by Chancellor's office) (CCC Curriculum Inventory): N/A
<u>No Career Education course can be approved with our Labor Market Data demonstrating and unmet need.</u> Please summarize the attached data here: Employment of network and computer systems administrators is projected to grow 6 percent from 2016 to 2026, about as fast as the average for all occupations. Demand for information technology (IT) workers is high and should continue to grow as firms invest in newer, faster technology and mobile networks.

(C) FOR **NON-CREDIT COURSES:**

Which category pertains to this course? (<i>parenting, basic skills, ESL, immigrant education/citizenship, persons with substantial disabilities, short-term vocational, older adults, home economics, or health and safety</i>)
--

is course be a part of a COLLEGE PREPARATION (CP) or CAREER DEVELOPMENT (CD) certificate? (If so, attach program description)

PSLO = Program Student Learning Outcome. A program is an organized sequence of courses or a single course leading to a defined objective, a degree, a certificate, license or transfer to another institution. (CCR Title 5, Section 55000) All courses must relate to a PSLO. **Remember that a PSLO should be measurable based on course work in one or more courses that lead to a degree and/or certificate. (Does this still need to stay on the form?)**

Please list the program outcome(s) most closely linked to the course outcome. Stand-Alone courses, or those that are not part of a program, will rarely be approved.

PROGRAM TITLE: Associate Degree (Network Technology)

PSLO(S):
Design, implement, troubleshoot and maintain networking systems.

ISLO = Institutional Student Learning Outcome. The college has identified 7 ISLO’s for our institution that were vetted over several semesters of work. The intent of the ISLO is to ensure that our students interact with the majority of the ISLO’s when they are completing a program of study. Your course/program student learning outcomes need to map to at least one of the ISLO’s below. Please review the descriptors for the ISLO’s found at <https://www.canyons.edu/Committees/CASL/Pages/ILO-Summary.aspx> and select at least one that the course you are proposing will assess and put a check mark in the box(es) that your course and/or program SLO assess.

*General Education and CTE courses need to relate to an ISLO

- | | | | |
|-------------------------------------|--|-------------------------------------|-------------------------|
| <input checked="" type="checkbox"/> | Critical Thinking | <input type="checkbox"/> | Effective Communication |
| <input type="checkbox"/> | Collaboration Thinking | <input checked="" type="checkbox"/> | Creative & Innovative |
| <input type="checkbox"/> | Information Literacy | <input type="checkbox"/> | Quantitative Literacy |
| <input type="checkbox"/> | Community Engagement & Global Responsibility | | |

NEW COURSE DOCUMENTATION

To help the Curriculum Committee assess the need and relevancy of the proposed course, please complete the following:

COURSE NUMBER: NETECH-155

COURSE TITLE: CCNA Cybersecurity Operations

NEED (describe how this course will uniquely serve students in your current program(s):

Cyber Security is a rapidly growing field and students need to be prepared to face the onslaught of hackers and intrusions on the network.

EVIDENCE OF JUSTIFICATION/NEED (check **all** that apply and **attach** supporting documentation; must have some evidence to support proposal):

School/Department Minutes

Advisory Board Minutes

COE Data Summary

Program Review

Labor Market Data

Student/Employer Survey

CURRICULAR CONSIDERATIONS

TO WHICH PROGRAM WILL THIS COURSE BELONG (please attach full program including this course):

Network Technology - Certificate of Specialization: Network Associate

IF THIS COURSE WILL REPLACE AN EXISTING COURSE OR COURSES, PROVIDE THOSE COURSE NUMBERS AND TITLES, AND THE RATIONALE FOR REPLACEMENT:

PLEASE **COMPLETE SECTION A, B, OR C** DEPENDING ON THE TYPE OF COURSE YOU ARE PROPOSING:

(A) FOR **TRANSFER COURSES, PROVIDE THE FOLLOWING REGARDING ARTICULATION:**

Is there a C-ID descriptor for this course? If so, please provide (C-ID):
Which local CSU's accept this course, and do they accept it for content credit or units? (Assist):
How many CCCs have approved this course (CCC Curriculum Inventory):

(B) FOR **CAREER EDUCATION COURSES (CE):**

Provide information on C-ID descriptors and transfer/articulation from (A) <i>if applicable</i> : ITIS-166
List sample curriculum from other districts, <i>if applicable</i> (previously approved by Chancellor's office) (CCC Curriculum Inventory): CNEE 148 CCNA Cybersecurity Operations - Santa Barbara City College CIS316-28215 Cisco Networking Academy™: CCNA Cybersecurity Operations - COSUMNES RIVER CIS316-28219 Cisco Networking Academy™: CCNA Cybersecurity Operations - SACRAMENTO CITY
<u>No Career Education course can be approved with our Labor Market Data demonstrating and unmet need.</u> Please summarize the attached data here: Job Outlook, 2018-28 32% (Much faster than average)

(C) FOR **NON-CREDIT COURSES:**

Which category pertains to this course? (<i>parenting, basic skills, ESL, immigrant education/citizenship, persons with substantial disabilities, short-term vocational, older adults, home economics, or health and safety</i>)
--

Will this course be a part of a COLLEGE PREPARATION (CP) or CAREER DEVELOPMENT (CD) certificate? (If so, attach program description)

PSLO = Program Student Learning Outcome. A program is an organized sequence of courses or a single course leading to a defined objective, a degree, a certificate, license or transfer to another institution. (CCR Title 5, Section 55000) All courses must relate to a PSLO. **Remember that a PSLO should be measurable based on course work in one or more courses that lead to a degree and/or certificate. (Does this still need to stay on the form?)**

Please list the program outcome(s) most closely linked to the course outcome. Stand-Alone courses, or those that are not part of a program, will rarely be approved.

PROGRAM TITLE:

PSLO(S):

The Computer Networking Program will prepare students for an entry-level position in an IT related industry with emphasis in either systems administration or network administration. The associate degree has two options: CCNA Network Administrator or MCSA Systems Administrator It is designed for transfer to four-year colleges or universities. The program also offers the following Certificate of Specializations: Network Associate and Systems Associate. Classes are designed for first-time college students, re-entry students, and current industry employees requiring skill enhancement or upgrade training. Emphasis is placed on hands-on labs and case studies designed to apply principles and develop troubleshooting skills. Students can prepare for industry certifications from industries and organizations such as BICSI, Cisco, CompTIA, or Microsoft.

ISLO = Institutional Student Learning Outcome. The college has identified 7 ISLO's for our institution that were vetted over several semesters of work. The intent of the ISLO is to ensure that our students interact with the majority of the ISLO's when they are completing a program of study. Your course/program student learning outcomes need to map to at least one of the ISLO's below.

Please review the descriptors for the ISLO's found at <https://www.canyons.edu/Committees/CASL/Pages/ILO-Summary.aspx> and select at least one that the course you are proposing will assess and put a check mark in the box(es) that your course and/or program SLO assess.

*General Education and CTE courses need to relate to an ISLO

- | | |
|---|---|
| <input checked="" type="checkbox"/> Critical Thinking | <input type="checkbox"/> Effective Communication |
| <input type="checkbox"/> Collaboration | <input type="checkbox"/> Creative & Innovative Thinking |
| <input checked="" type="checkbox"/> Information Literacy | <input type="checkbox"/> Quantitative Literacy |
| <input type="checkbox"/> Community Engagement & Global Responsibility | |

NEW COURSE DOCUMENTATION

To help the Curriculum Committee assess the need and relevancy of the proposed course, please complete the following:

COURSE NUMBER: NETECH-213

COURSE TITLE: VMware vSphere - Install, Configure, Manage

NEED (describe how this course will *uniquely* serve students in your current program(s):

The field of networking is moving in the direction of virtualization. VMware is an industry leader in the field and our students need to be familiar with these technologies to be employable.

EVIDENCE OF JUSTIFICATION/NEED (check **all** that apply and **attach** supporting documentation; must have some evidence to support proposal):

- | | |
|--|---|
| <input type="checkbox"/> School/Department Minutes | <input checked="" type="checkbox"/> Program Review |
| <input type="checkbox"/> Advisory Board Minutes | <input checked="" type="checkbox"/> Labor Market Data |
| <input type="checkbox"/> COE Data Summary | <input type="checkbox"/> Student/Employer Survey |
| <input type="checkbox"/> | <input type="checkbox"/> |

CURRICULAR CONSIDERATIONS

TO WHICH PROGRAM WILL THIS COURSE BELONG (please attach full program including this course):

Network Technology - Certificate of Specialization: System Administrator

IF THIS COURSE WILL REPLACE AN EXISTING COURSE OR COURSES, PROVIDE THOSE COURSE NUMBERS AND TITLES, AND THE RATIONALE FOR REPLACEMENT:

PLEASE **COMPLETE SECTION A, B, OR C** DEPENDING ON THE TYPE OF COURSE YOU ARE PROPOSING:

(A) FOR **TRANSFER COURSES, PROVIDE THE FOLLOWING REGARDING ARTICULATION:**

Is there a C-ID descriptor for this course? If so, please provide (C-ID): No
Which local CSU's accept this course, and do they accept it for content credit or units? (Assist): N/A
How many CCCs have approved this course (CCC Curriculum Inventory): N/A

(B) FOR **CAREER EDUCATION COURSES (CE):**

Provide information on C-ID descriptors and transfer/articulation from (A) <i>if applicable</i> : N/A
List sample curriculum from other districts, <i>if applicable</i> (previously approved by Chancellor's office) (CCC Curriculum Inventory): N/A
<u>No Career Education course can be approved with our Labor Market Data demonstrating and unmet need.</u> Please summarize the attached data here: Employment of network and computer systems administrators is projected to grow 6 percent from 2016 to 2026, about as fast as the average for all occupations. Demand for information technology (IT) workers is high and should continue to grow as firms invest in newer, faster technology and mobile networks.

(C) FOR **NON-CREDIT COURSES:**

Which category pertains to this course? (<i>parenting, basic skills, ESL, immigrant education/citizenship, persons with substantial disabilities, short-term vocational, older adults, home economics, or health and safety</i>)
--

Is this course be a part of a COLLEGE PREPARATION (CP) or CAREER DEVELOPMENT (CD) certificate? (If so, attach program description)

PSLO = Program Student Learning Outcome. A program is an organized sequence of courses or a single course leading to a defined objective, a degree, a certificate, license or transfer to another institution. (CCR Title 5, Section 55000) All courses must relate to a PSLO. **Remember that a PSLO should be measurable based on course work in one or more courses that lead to a degree and/or certificate. (Does this still need to stay on the form?)**

Please list the program outcome(s) most closely linked to the course outcome. Stand-Alone courses, or those that are not part of a program, will rarely be approved.

PROGRAM TITLE: Associate Degree (Network Technology)
PSLO(S):
, implement, troubleshoot and maintain networking systems.

ISLO = Institutional Student Learning Outcome. The college has identified 7 ISLO's for our institution that were vetted over several semesters of work. The intent of the ISLO is to ensure that our students interact with the majority of the ISLO's when they are completing a program of study. Your course/program student learning outcomes need to map to at least one of the ISLO's below. Please review the descriptors for the ISLO's found at <https://www.canyons.edu/Committees/CASL/Pages/ILO-Summary.aspx> and select at least one that the course you are proposing will assess and put a check mark in the box(es) that your course and/or program SLO assess.

*General Education and CTE courses need to relate to an ISLO

- | | | | |
|-------------------------------------|--|-------------------------------------|-------------------------|
| <input checked="" type="checkbox"/> | Critical Thinking | <input type="checkbox"/> | Effective Communication |
| <input type="checkbox"/> | Collaboration Thinking | <input checked="" type="checkbox"/> | Creative & Innovative |
| <input type="checkbox"/> | Information Literacy | <input type="checkbox"/> | Quantitative Literacy |
| <input type="checkbox"/> | Community Engagement & Global Responsibility | | |

NEW COURSE DOCUMENTATION

To help the Curriculum Committee assess the need and relevancy of the proposed course, please complete the following:

COURSE NUMBER: NETECH-215

COURSE TITLE: Cloud+ Certification Prep

NEED (describe how this course will *uniquely* serve students in your current program(s):

The field of networking is moving services to the cloud. Our students need to be familiar with cloud technologies to be employable.

EVIDENCE OF JUSTIFICATION/NEED (check **all** that apply and **attach** supporting documentation; must have some evidence to support proposal):

School/Department Minutes

Program Review

Advisory Board Minutes

Labor Market Data

COE Data Summary

Student/Employer Survey

CURRICULAR CONSIDERATIONS

TO WHICH PROGRAM WILL THIS COURSE BELONG (please attach full program including this course):

Network Technology - Certificate of Specialization: System Administrator

IF THIS COURSE WILL REPLACE AN EXISTING COURSE OR COURSES, PROVIDE THOSE COURSE NUMBERS AND TITLES, AND THE RATIONALE FOR REPLACEMENT:

PLEASE **COMPLETE SECTION A, B, OR C** DEPENDING ON THE TYPE OF COURSE YOU ARE PROPOSING:

(A) FOR **TRANSFER COURSES, PROVIDE THE FOLLOWING REGARDING ARTICULATION:**

Is there a C-ID descriptor for this course? If so, please provide (C-ID): No
Which local CSU's accept this course, and do they accept it for content credit or units? (Assist): N/A
How many CCCs have approved this course (CCC Curriculum Inventory): N/A

(B) FOR **CAREER EDUCATION COURSES (CE):**

Provide information on C-ID descriptors and transfer/articulation from (A) <i>if applicable</i> : N/A
List sample curriculum from other districts, <i>if applicable</i> (previously approved by Chancellor's office) (CCC Curriculum Inventory): N/A
<u>No Career Education course can be approved with our Labor Market Data demonstrating and unmet need.</u> Please summarize the attached data here: Employment of network and computer systems administrators is projected to grow 6 percent from 2016 to 2026, about as fast as the average for all occupations. Demand for information technology (IT) workers is high and should continue to grow as firms invest in newer, faster technology and mobile networks.

(C) FOR **NON-CREDIT COURSES:**

Which category pertains to this course? (<i>parenting, basic skills, ESL, immigrant education/citizenship, persons with substantial disabilities, short-term vocational, older adults, home economics, or health and safety</i>)
--

Will this course be a part of a COLLEGE PREPARATION (CP) or CAREER DEVELOPMENT (CD) certificate? (If so, attach program description)

PSLO = Program Student Learning Outcome. A program is an organized sequence of courses or a single course leading to a defined objective, a degree, a certificate, license or transfer to another institution. (CCR Title 5, Section 55000) All courses must relate to a PSLO. **Remember that a PSLO should be measurable based on course work in one or more courses that lead to a degree and/or certificate. (Does this still need to stay on the form?)**

Please list the program outcome(s) most closely linked to the course outcome. Stand-Alone courses, or those that are not part of a program, will rarely be approved.

PROGRAM TITLE: Associate Degree (Network Technology)

PSLO(S):

Design, implement, troubleshoot and maintain networking systems.

ISLO = Institutional Student Learning Outcome. The college has identified 7 ISLO's for our institution that were vetted over several semesters of work. The intent of the ISLO is to ensure that our students interact with the majority of the ISLO's when they are completing a program of study. Your course/program student learning outcomes need to map to at least one of the ISLO's below. Please review the descriptors for the ISLO's found at <https://www.canyons.edu/Committees/CASL/Pages/ILO-Summary.aspx> and select at least one that the course you are proposing will assess and put a check mark in the box(es) that your course and/or program SLO assess.

*General Education and CTE courses need to relate to an ISLO



Critical Thinking



Effective Communication



Collaboration Thinking



Creative & Innovative



Information Literacy



Quantitative Literacy



Community Engagement & Global Responsibility

Course	Description	Units	Prior Course # or Repackage	Rationale	Lect/Lab Hours	Prerequisites	Skills alignment identified in CyberSecurity Pathway C-ID
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Associate Degree: Computer Networking (including GE requirements) / Certificate of Achievement: Computer Networking (no GE requirements)

ESYST-101	Basic Electronics	3	ESYST-101	Same content - minor revisions	36 lecture/54 lab	none	Technical Support
ESYST-121	IoT-Connecting Things	3	New - Approved	Gap Analysis	36 lecture/54 lab	none	Technical Support
ESYST-131	IoT - Python Programming	3	New - Approved	Gap Analysis	36 lecture/54 lab	none	System Administration ITIS-130
NETECH-111	Computer Maintenance: A+ Certification Prep	3	CMPNET 132	Revision based on Cert	36 lecture/54 lab	none	Technical Support ITIS-110
NETECH-113	Data Center	3	CMPNET 133	Same content - minor revisions	36 lecture/54 lab	none	Linux, Sys. Admin., Vmware ITIS-155
NETECH-142	MCSA: Windows Server OS	3	CMPNET 177	Revision based on Cert	36 lecture/54 lab	none	System Administration
NETECH-151	CCNA-1: Introduction To Networks	3	Repackaged CMPNET 154, CMPNET 151 (7 units)	Revision based on Cert	36 lecture/54 lab	none	Cisco, Routers ITIS-150
NETECH-152	CCNA-2: Switching, Routing, and Wireless Essentials	3	Repackaged CMPNET 155, CMPNET 151 (7 units)	Revision based on Cert	36 lecture/54 lab	1 prereq: NETECH 151	Cisco, Routers ITIS-151
NETECH-153	CCNA-3: Enterprise Networking, Security, and Automation	3	CMPNET 156	Revision based on Cert	36 lecture/54 lab	2 prereqs: NETECH 151, NETECH 152	Cisco, Routers, WAN
NETECH-219	Security+ Certification Prep - Brandman Requirement	3	CMPNET 171	Same content - minor revisions	36 lecture/54 lab	1 prereq: NETECH 113	System Administrator Network Engineer ITIS-160

Total 30

Certificate: Internet of Things

ESYST-101	Basic Electronics	3	ESYST-101	Same content - minor revisions	36 lecture/54 lab	none	Technical Support
ESYST-121	IoT-Connecting Things	3	New - Approved	Gap Analysis	36 lecture/54 lab	none	Technical Support
ESYST-131	IoT - Python Programming	3	New - Approved	Gap Analysis	36 lecture/54 lab	none	System Administration
*ESYST-141	IoT - Security	3	New - Requires Justification	Cyber Security	36 lecture/54 lab	1 prereq: ESYST 121	Tech. Supp., Sys. Admin

Current Total 9 (12 units with new course IoT - Security)

Certificate: Network Foundation

CAWT-101	Introduction to Computers	3	CAWT-101			none	Technical Support ITIS-120
NETECH-103	Network Cabling Infrastructure	3	CMPNET 131	Same content - minor revisions	36 lecture/54 lab	none	Technical Support
NETECH-111	Computer Maintenance: A+ Certification Prep	3	CMPNET 132	Revision based on Cert	36 lecture/54 lab	none	Technical Support ITIS-110
NETECH-113	Data Center	3	CMPNET 133	Same content - minor revisions	36 lecture/54 lab	none	Linux, System Administration ITIS-155

Total 12

Certificate: System Associate

NETECH-141	MTA: Windows Client OS	3	CMPNET 176	Revision based on Cert	36 lecture/54 lab	none	Technical Support
NETECH-142	MCSA: Windows Server OS	3	CMPNET 177	Revision based on Cert	36 lecture/54 lab	none	System Administration
NETECH-143	MCSA: Administering Windows Server	3	CMPNET 178	Revision based on Cert	36 lecture/54 lab	1 prereq: NETECH 142	Sys. Admin., Active Directory
NETECH-144	MCSA: Configuring Advanced Windows Server Services	3	CMPNET 179	Revision based on Cert	36 lecture/54 lab	1 prereq: NETECH 142	Sys. Admin., Active Directory

Total 12

Certificate: Network Associate

NETECH-151	CCNA-1: Introduction To Networks	3	Repackaged CMPNET 154, CMPNET 151 (7 units)	Revision based on Cert	36 lecture/54 lab	none	Cisco, Routers	ITIS-150
NETECH-152	CCNA-2: Switching, Routing, and Wireless Essentials	3	Repackaged CMPNET 155, CMPNET 151 (7 units)	Revision based on Cert	36 lecture/54 lab	1 prereq: NETECH 151	Cisco, Routers	ITIS-151
NETECH-153	CCNA-3: Enterprise Networking, Security, and Automation	3	CMPNET 156	Revision based on Cert	36 lecture/54 lab	2 prereqs: NETECH 151, NETECH 152	Cisco, Routers, WAN	
*NETECH-155	CCNA CyberOps	3	New - Requires Justification	Cyber Security	36 lecture/54 lab	1 prereq: NETECH 151	System Administration	ITIS-166

Current Total 9 (12 units with new course CCNA Cyber Ops)

Certificate: Cloud/Virtualization

NETECH-113	Data Center	3	CMPNET 133	Same content - minor revisions	36 lecture/54 lab	none	Linux, System Administration	
NETECH-211	Linux+ Certification Prep	3	CMPNET 191	Same content - minor revisions	36 lecture/54 lab	none	Linux, System Administration	
*NETECH-213	VMware vSphere - Install, Configure, Manage	3	New - Requires Justification	Virtualization - Industry Need	36 lecture/54 lab	1 prereq: NETECH 113	Sys. Admin., Net. Engr., VMware	
*NETECH-215	Cloud+ Certification Prep	3	New - Requires Justification	Cloud Computing - Industry Ne	36 lecture/54 lab	1 prereq: NETECH 113	Sys. Admin., Net. Engr., VMware	

Current Total 6 (12 units with two new courses)

Certificate: Network Engineer

NETECH-251	CCNP Enterprise Core	3	CMPNET 251	Revision based on Cert	36 lecture/54 lab	CCNA Certified or 3 classes for prereq: NETECH 151, 152, 153	Cisco, Routers, WAN, Network Engineer	
NETECH-253	CCNP Enterprise Adv. Routing & Services	3	CMPNET 253	Revision based on Cert	36 lecture/54 lab	CCNA Certified or 3 classes for prereq: NETECH 151, 152, 153	Cisco, Routers, WAN, Network Engineer	
NETECH-255	Wireless Technologies	3	CMPNET 281	Revision based on Cert	36 lecture/54 lab	CCNA Certified or 3 classes for prereq: NETECH 151, 152, 153	Cisco, Routers, Network Engineer	
NETECH-259	CCNA Security	3	CMPNET 271	Revision based on Cert	36 lecture/54 lab	CCNA Certified or 3 classes for prereq: NETECH 151, 152, 153	Cisco, Routers, WAN, Network Engineer	ITIS-167

Total 12

Form 2

Program Initiation/Modification

This form is used after labor market information (LMI) is obtained through the Center of Excellence (COE, www.coecc.net).

Name of Proposed Program: **Fundamentals of Tax Return Preparation**

Name of Persons Submitting this Proposal: **Ali Naddafpour**

Date of Proposal Submission: **Nov. 21, 2019**

Type of Program: (Noncredit Certificate of Completion or Competency, Credit Certificate of Specialization or Achievement, AA/AS or AA-T/AS-T)

Noncredit Certificate of Completion, and Credit Certificate of Specialization or Achievement, AA-T/AS-T

Type of Proposal: (Initiation, Substantial Modification, Discontinuance) **Initiation**

Program Description:

Please provide a short overview of the proposed program, its purpose, and goals:

The student in Bus 217 will acquire the knowledge and develop the skills necessary to prepare both federal and state income tax returns. The class is associated with the Voluntary Income Tax Assistance program (VITA).

SECTION 1 – Program Need and Justification

1. How is this program discipline/field relevant for either transfer or CTE preparation?
This program provides the students with knowledge of current tax law and how to prepare income taxes. The students can use the knowledge to pass State of California exam and become a licensed tax preparers.

Moreover, this course provide foundation of taxes and how those laws are applied for transfer business students. They can use this course as an elective to transfer to four-year colleges. The graduate students can use the course as part of their qualification for CPA and or CMA exam.

2. What data and feedback is there from CTE Advisory Committees in support of this proposal?
The data shows that there is a high demand and need for this course in our area. There are more than seventy (70) accounting and tax preparation businesses in the area which we can support and feed them.
3. Does the Regional Labor Data support this proposal? If so, how? Please attached labor market research report as an appendix.
Yes
4. If transfer Program, are there local universities with this program for students to transfer to? If so please list these institutions.
California State University, Northridge; Long Beach, Los Angeles, Channel Island, etc.
5. Are there similar programs in surrounding community college districts? If so, which districts?
Yes. Los Angeles Mission, Pierce, Santa Monica, Mt. San Antonio and Glendale Community Colleges.
6. What have the enrollment trends been over the past 5 years, and how are they favorable to this proposal?
During Spring of 2019, due to demand, we attracted 36 volunteered students to this course. This course is a starting point for a well earning career.
7. What is the projected demand for this program in the future, and how is that demand favorable to the committee supporting this proposal?
We believe, we can offer this course one semester a year. During Fall semester, and address needs of the community and industry. Without any marketing, we can attract 40 to 50 students to this program. These students currently attend Mission and or Pierce or Glendale College.
8. Is there any other relevant data from program review? How does it support this proposal?
The graduate students who have degrees other than Business/Accounting can also use this course to complete their requirement for being accepted to graduate schools to study Master in Taxations and or Accountancy.
9. (Program Modification Only) What is the productivity in terms of WSCH per FTE ratios, and how does it support this proposal?

10. (Program Modification Only) What is the frequency of course section offerings? If there has been (or will be) a reduction in course section offerings, what is the rationale for that reduction?
11. (Program Modification Only) What is the term to term persistence of students within the program?
12. (Program Modification Only) If applicable, what are, and how do, the success rate of students passing state and national licensing exams support the proposal?

SECTION 2 – Program and Curriculum Design

Program Requirements:

1. Please a brief narrative about the program requirements.
This course is an OER, zero cost to the students.
It uses the IRS and California Franchise Tax Board textbooks.
Computer Lab Classroom.

3. Complete the table below, which includes courses, unit requirements, and sequencing/frequency of course offerings for the program using the template below:

Course Identifier	Title	Lecture hours and/or Lab hours	Units	Frequency of offering Year/Semester (Y1 or S1)	Existing or new course?
BUS 217	Fundamentals of Tax Return Preparation	Lecture: 36	2	Y1 Fall	New
BUS 217 Lab	Preparing Tax Returns - Lab	Lab: 36	1	Y1 Feb – Apr 15	New
		TOTAL UNITS REQUIRED	3		

4. For the new courses that need to be created, please provide a short course description and included proposed units in the table above.
5. **The student in Business 217 will acquire the knowledge and develop the skills necessary to prepare both federal and state income tax returns. The class is associated with the Voluntary Income Tax Assistance program (VITA) which is sponsored by the federal government and the State of California.**
6. What is the timeline for implementing the new courses required for the program?
Start in Fall of 2020

Students Ability to Complete

7. Are students able to complete the program in a timely manner and under a certain amount of units (as required by AD-T regulations) given the programs course requirements, general education requirements, and frequency of course offerings?
Yes. Students can complete the course in a timely manner.

External Factors

8. Please explain how the proposed program design will meet the standards of outside accreditation agencies, if applicable?
9. If transfer, how will the proposed new courses and program articulate with other institutions of higher education?
As an elective course can be transferred for a Business degree.

10. What is the input about the quality of the program's design from program review, student evaluations, articulating universities, local business and/or industry, advisory committees, and/or the community?

The student will address real life examples during in-class activities and assessments. Tax problems of an increasing difficulty level are given each week. Furthermore, the student must pass the IRS exam (80% Minimum). The student should get 80% or higher in order to be certified.

SECTION 3 – Implementation Plan and Institutional Support

1. Which current faculty will be responsible for this program? If there are no current faculty available to support the program, what is the plan for academic support?

Ali Naddafpour

2. What additional staffing resources will be needed to support this program? What is the plan for those resources?

During actual tax preparation period (Lab) another Accounting faculty is needed for quality assurance and control purposes.

Facilities:

3. Are there facilities available for this program? Can existing facilities be shared with another program? If so, identify these facilities. If not, what is the plan for obtaining facilities? If external facilities (i.e. sites off-campus, such as clinical sites) have been identified, then attach letters of support.

HSLH 233, 234, and 235 work the best due to availability of their computers and room design.

4. Are new facilities needed for this program? If so, please provide design plans (size of space, equipment needs, acoustic, specialized needs, etc.).

NO

NOTE: If new facilities are needed please meet with Jim Schrage and your dean with specifics (based on Advisory Committee recommendations).

If facilities are needed, these are the questions that should be addressed:

5. What is the funding source for this program?

6. If grant funded, what is the plan for institutionalization of this program?

Academic Organization and Faculty Support:

7. Which school houses or will house this program?

School of Business

8. What department houses or will house this program?

Business Department

9. Will AP 4023 (Procedures for Merging/Splitting Departments) be needed?

N/A

10. Which current faculty will be responsible for this program?

Ali Naddafpour

11. Are faculty in the school, department, or proposed program discipline supportive of this program? List faculty:

Yes. Diane Sionko, Robert Maxwell, Gary Collis, Heaven Warner, Gary Quire, and Christina Chung.

Human Resources:

12. What will be the programs impact be on current faculty and instructional support staff (deans, directors, administrative assistants, lab technicians)? Are they available to support this program?

None. Dean Donald Carlson and previous deans are supporters of this program.

13. What additional staffing resources will be needed to support this program?

None.

Financial Support:

14. What is the funding source for this program?

15. What is the plan for institutionalization of this program if grant funded?

SECTION 4 – Alignment of Program

1. How does this program relate to current college curriculum and offerings in the context of the academic mission of the College?
The students learn about tax law and their application in variety of circumstances. Each taxpayer situation is slightly different, and the students use their knowledge to prepare an accurate tax return. Once the tax return was finished, then a quality assurance person, will double check and review the return with the student. The student will learn while providing the services.

2. How does this program align with the mission, values, and goals of College of the Canyons as outlined in the most recent Strategic Plan?
This course is directly aligned with the COC’s mission statement. As the college mission statement states this course ‘prepares students for transfer education, workforce-skills development...’ This course ‘engages students and community in scholarly inquiry, creative partnership, and the application of knowledge.’ (COC’s Mission Statement)

3. How does this program align with access and equity goals for students? How will this program have an impact on diversity?
The students can use what they have learned and practiced under supervision of trained and seasoned accountants and or tax preparers, to start their own business or work for a company as a certified tax prepare. The underserved, low-income, and marginalized students can use this course to start their own business and earn about \$25 to \$50 per hour.

Please attach appendices of supporting data and information here:

Form 2

Program Initiation/Modification

This form is used after labor market information (LMI) is obtained through the Center of Excellence (COE, www.coeccc.net).

Name of Proposed Program: *Center for Excellence in Teaching and Learning Non-Credit Certificates*

Name of Persons Submitting this Proposal: Julie Johnson, Robert Wonser, and Garrett

Rieck Date of Proposal Submission: April 16, 2020

Type of Program: Non Credit Certificate of Completion

Type of Proposal: Initiation

Program Description:

The College of the Canyons *Center for Excellence in Teaching and Learning* (CETL) is an organization for the promotion and implementation of a wide range of professional development opportunities for faculty. CETL is responsible for recruiting and training experienced teachers who can share their skills with others. Through these facilitators and trainers, the program offers a collection of courses, including a 54-hour Skilled Teacher Certificate, that promotes excellence in teaching and best practices in the classroom. CETL focuses on the advancement of a community of teaching excellence and is led by a Steering Committee composed of faculty and staff from diverse fields throughout the college community. CETL regularly partners with Professional Development, Human Resources, Academic Affairs, the Office of Instruction, Online Education, and faculty and staff from across the campus community.

The **CETL Non-Credit Certificate Program (CETL NC)** would offer certificates preparing faculty on campus as well as educators within the community. CETL NC expands the reach of our preparedness for classroom instruction to our community partners and educators outside of the college.

SECTION 1 – Program Need and Justification

1. How is this program discipline/field relevant for either transfer or CTE preparation?

This program is relevant for teacher preparation. This program will include current CETL course offerings as well as other teacher preparation courses designed to support current and future COC faculty as well as teachers in the Santa Clarita Valley more broadly. Topics addressed will help prepare faculty for teaching diverse student populations effectively. Topics will include culturally relevant teaching, assessment, effective lecture design, active and collaborative learning, effective pedagogy and andragogy, and online instruction.

The CETL NC Teaching and Learning Certificates would provide a sequence of courses adding up to 54 hours of instruction that train and support teachers using the following three certificate options:

A. Teaching Foundation Certificate - Complete 1 of the following courses

Teaching Foundation Certificate					
Course Identifier	Title	Lecture hours and/or Lab hours	Units	Frequency of offering Year/Semester (Y1 or S1)	Existing or new course?
CETL101	Introduction to Online Instruction	36	0	At least once a semester including summer and winter sessions	Existing internal
CETL102	Culturally Responsive Teaching	36	0	At least 2x an academic year	Existing internal
CETL103	Introduction to Teaching Strategies	36	0	At least 1x academic year	Existing internal

AND Complete 2 of the following courses

CETL104	Reading Strategies	9	0	At least 1x academic year	Existing internal
STC101	Theory and Research in the 21st Century	9	0	At least 1x academic year	Existing internal
STC102	Active and Collaborative Learning	9	0	At least 1x academic year	Existing internal
STC103	High Impact Practices (HIP)	9	0	At least 1x academic year	Existing internal
STC104	Teaching with Technology	9	0	At least 1x academic year	Existing internal
STC105	Assessment Strategies	9	0	At least 1x academic year	Existing internal
STC106	Effective Classroom Management	9	0	At least 1x academic year	Existing internal
STC107	Teaching Portfolio	9-12 hours	0	At least 1x academic year	Existing internal

B. Well Rounded Teaching Certificate - Complete 1 of the following courses

Well Rounded Teaching Certificate					
Course Identifier	Title	Lecture hours and/or Lab hours	Units	Frequency of offering Year/Semester (Y1 or S1)	Existing or new course?
CETL101	Introduction to Online Instruction	36	0	At least once a semester including summer and winter sessions	Existing internal
CETL102	Culturally Responsive Teaching	36	0	At least 2x an academic year	Existing internal
CETL105	Critical Thinking	36	0	At least 1x academic year	Existing internal

AND Complete 2 of the following courses

CETL104	Reading Strategies	9	0	At least 1x academic year	Existing internal
STC101	Theory and Research in the 21st Century	9	0	At least 1x academic year	Existing internal
STC102	Active and Collaborative Learning	9	0	At least 1x academic year	Existing internal
STC103	High Impact Practices (HIP)	9	0	At least 1x academic year	Existing internal
STC104	Teaching with Technology	9	0	At least 1x academic year	Existing internal
STC105	Assessment Strategies	9	0	At least 1x academic year	Existing internal
STC106	Effective Classroom Management	9	0	At least 1x academic year	Existing internal
STC107	Teaching Portfolio	9-12	0	At least 1x academic year	Existing internal

C. Build Your Own Teaching - Any combination of 54 Hours of CETL NC

2. What data and feedback is there from CTE Advisory Committees in support of this proposal?

CETL has delivered approximately 25,000 hours of training to COC faculty. The CETL steering committee meets regularly and reports back to the Academic Senate with updates and achievements for the program. The Center offered the following learning opportunities for COC faculty. (Not a complete list)

- A. New Faculty Orientations - Hosted Synergy New Faculty Orientation for the incoming faculty class of Fall 2019.
- B. Skilled Teacher Certificate (STC): 2019-20: Sixteen faculty are scheduled to complete the 54-hour on ground Skilled Teacher Certificate.

Program Viability Committee

- C. Introduction to Online Instruction (IOI): More than 75 faculty have completed the new Introduction to Online Instruction (36 hour course) since Spring 2019. The Center added an additional IOI for Spring 2020 with the demand to move to remote online instruction.
- D. CRPP Culturally Responsive Pedagogy and Practices: a 1 unit/17 hour workshop
- E. New CETL Website Launched: Fall 2019: www.canyons.edu/cetl Includes a calendar of classes, CETL Faculty bios and forms for new faculty interest. New Interest Form <https://www.canyons.edu/administration/cetl/contact.php>
- F. Convocation Panel Discussions: CETL faculty organized and participated in the Spring 2020 Convocation panel discussion about Equity with Disproportionately Impacted student populations and Creating an inclusive classroom environment.
- G. CETL ZOOM and CANVAS Training: Spring 2020 CETL collaborated with Distance Education to provide Faculty training in Zoom classrooms.

3. Does the Regional Labor Data support this proposal? If so, how? Please attach labor market research report as an appendix.

This program will be categorized as Workforce Preparation and therefore does not need regional labor market data. However, a report can be generated if needed. Collaboration with community districts and the College is ongoing and CETL NC would support this collaboration.

4. If transfer Program, are there local universities with this program for students to transfer to? If so please list these institutions.

N/A

5. Are there similar programs in surrounding community college districts? If so, which districts?

Yes, Santa Rosa Junior College has a similar teacher preparation program in the Sonoma County Community College District. Also, there are CETL programs at surrounding colleges but none that exist in non-credit. The Santa Rosa certificate programs have been effective and serving their community since Fall of 2018.

6. What have the enrollment trends been over the past 5 years, and how are they favorable to this proposal?

Enrollment trends over the past 5 years have been consistently rising with a large population of COC faculty trained in CETL course offerings. The approximate number of hours of training delivered by CETL to COC faculty, 2015-Fall 2019: 25,000.¹ Some highlights include:

- Approximately 320 COC faculty certified to teach online by completing CETL's Introduction to Online Instruction (IOI)
- Culturally Relevant Teaching - 27 faculty completed (for 2019)
- Skilled Teacher Certificate: 16 faculty completed for 2019-2020, 18 for 2018-2019
- Teaching Strategies: 20 faculty completed in 2017

7. What is the projected demand for this program in the future, and how is that demand favorable to the committee supporting this proposal?

¹ Based on historical data CETL data

The CETL programs are very popular amongst existing faculty. Given the quick move to remote and online instruction, faculty have been reaching out to CETL for support with Distance Learning and online pedagogy. The plan with CETL NC is to support faculty at the college and in the community.

8. Is there any other relevant data from program review? How does it support this proposal?

N/A

9. (Program Modification Only) What is the productivity in terms of WSCH per FTE ratios, and how does it support this proposal?

N/A

10. (Program Modification Only) What is the frequency of course section offerings? If there has been (or will be) a reduction in course section offerings, what is the rationale for that reduction?

N/A

11. (Program Modification Only) What is the term to term persistence of students within the program?

N/A

12. (Program Modification Only) If applicable, what are, and how do, the success rate of students passing state and national licensing exams support the proposal?

N/A

SECTION 2 – Program and Curriculum Design

Program Requirements:

1. Please a brief narrative about the program requirements.

CETL requires the development of curriculum by Two Faculty Coordinators with reassigned time funded as a forced district cost. Some faculty teams and research groups on HIPs, Reading Apprenticeship, Acceleration, Growth Mindset, Online Education and Assessments etc.

CETL also shares administrative support with Guided Pathways for meetings and website design.

2. Complete the table below, which includes courses, unit requirements, and sequencing/frequency of course offerings for the program using the template below:

Course Identifier	Title	Lecture hours and/or Lab hours	Units	Frequency of offering Year/Semester (Y1 or S1)	Existing or new course?

Program Viability Committee

CETL101	Introduction to Online Instruction	36	0	At least once a semester including summer and winter sessions	Existing internal
CETL102	Culturally Responsive Teaching	36	0	At least 2x an academic year	Existing internal
CETL103	Introduction to Teaching Strategies	36	0	At least 1x academic year	Existing internal
CETL104	Reading Strategies	9	0	At least 1x academic year	Existing internal
CETL105	Critical Thinking	36	0	At least 1x academic year	Existing internal
STC101	Theory and Research in the 21st Century	9	0	At least 1x academic year	Existing internal
STC102	Active and Collaborative Learning	9	0	At least 1x academic year	Existing internal
STC103	High Impact Practices (HIP)	9	0	At least 1x academic year	Existing internal
STC104	Teaching with Technology	9	0	At least 1x academic year	Existing internal
STC105	Assessment Strategies	9	0	At least 1x academic year	Existing internal
STC106	Effective Classroom Management	9	0	At least 1x academic year	Existing internal
STC107	Teaching Portfolio	9	0	At least 1x academic year	Existing internal
SYN101	<i>New Teaching Synergy</i>	36	0	<i>At least 1x academic year</i>	<i>Existing internal</i>
FIT101	<i>Future Instructors in Training</i>	36	0	<i>At least 1x academic year</i>	<i>Existing internal</i>
		TOTAL UNITS REQUIRED			

- For the new courses that need to be created, please provide a short course description and included proposed units in the table above.

All courses are existing CETL courses. We have adjusted the hours for some courses to align with our proposed CETL NC certificates. Full CETL course listings and descriptions are attached. (Attachment)

- What is the timeline for implementing the new courses required for the program?

The timeline for the new CETL NC program is a Spring 2021 implementation.

Students Ability to Complete

5. Are students able to complete the program in a timely manner and under a certain amount of units (as required by AD-T regulations) given the programs course requirements, general education requirements, and frequency of course offerings?

With CETL’s existing structure and archive of resources, CETL NC will be prepared to offer ample course offerings as demand increases. Faculty and prospective faculty will be able to complete the course offerings and certificates in a timely manner.

External Factors

6. Please explain how the proposed program design will meet the standards of outside accreditation agencies, if applicable?

NA

7. If transfer, how will the proposed new courses and program articulate with other institutions of higher education?

NA

8. What is the input about the quality of the program’s design from program review, student evaluations, articulating universities, local business and/or industry, advisory committees, and/or the community?

“This course was excellent! I was fearful in taking this class but every step of the way was necessary for the intent to teach online.” Summer, 2017

“Thank you for offering this. You contribute to the excellent Professional Development that we offer here through your vision, tenacity and enthusiasm!” - Feb, 2018

“Thank you for a great course!! I have learned a lot of helpful information that will help me, but also my students.” Summer, 2018

“This module helped me articulate the difficulties my students are experiencing in the classroom with actual data that can be reflective of our student populations.” - May, 2019

SECTION 3 – Implementation Plan and Institutional Support

1. Which current faculty will be responsible for this program? If there are no current faculty available to support the program, what is the plan for academic support?

Julianne Johnson and Robert Wonser are the current CETL faculty coordinators. Reassign time equivalent to 20% is in place for the CETL coordinators to complete the following duties:

- In consultation with the administrative co-chair, prepare agendas and meeting summaries for the CETL Steering Committee, and co-chair Committee meetingsProvide guidance and input for the development of workshops and classes to promote the improvement of teaching skills for both full and part time faculty
- Recruit and train experienced teachers who have the ability to share their skills with othersFacilitate discussions that support the development of an excellent teaching and learning environment

Program Viability Committee

- Maintain curriculum for educational courses and workshops specifically designed for the CETL Provide current, accurate and on-going communication to the campus community on the status of the CETL
- Facilitate full-time and adjunct faculty involvement and support of the CETL Work with clerical support to produce program promotional materials that promote CETL courses through flyers, emails, presentations, personal contact, and other marketing sources
- Oversee the development of new courses and programs to meet the changing demands of the teaching profession
- Coordinate the scheduling of courses and rooms with the Office of Academic Affairs Work with clerical support and the Office of Professional Development to track the progress of course participants and arrange for proper acknowledgment/recognition
- Coordinate with other campus departments such as Professional Development, the Academic Senate, the Faculty Development Committee, Human Resources, and the Office of Instruction
- Prepare program budget in conjunction with the administrative co-chair
- Act as college liaison for program; respond to inquiries regarding the CETL, including occasional meeting with representatives from other colleges
- Coordinate the selection of new steering committee members when needed Work with clerical support and administrative co-chair and Institutional
- Research to manage program database and collection of statistics for program evaluation In cooperation with Institution
- Research, plan and implement program evaluation and review to highlight program efficacy and conduct ongoing needs assessments

Additional reassign time may be required to administer CETL NC as program offerings grow.

2. What additional staffing resources will be needed to support this program? What is the plan for those resources?

N/A

Facilities:

3. Are there facilities available for this program? Can existing facilities be shared with another program? If so, identify these facilities. If not, what is the plan for obtaining facilities? If external facilities (i.e. sites off-campus, such as clinical sites) have been identified, then attach letters of support.

CETL currently uses BONH 241 for meetings and current facilities can be used, but it would be ideal to have a space dedicated to the Center. Even a dedicated space in existing faculty spaces like BONH 330 or adjunct offices would be ideal to distribute literature, etc.

4. Are new facilities needed for this program? If so, please provide design plans (size of space, equipment needs, acoustic, specialized needs, etc.).

NOTE: If new facilities are needed please meet with Jim Schrage and your dean with specifics (based on Advisory Committee recommendations).

If facilities are needed, these are the questions that should be addressed:

5. What is the funding source for this program?

NA

6. If grant funded, what is the plan for institutionalization of this program?

NA

Academic Organization and Faculty Support:

7. Which school houses or will house this program? School of Personal and Professional Learning

8. What department houses or will house this program?

There will not be a department, CETL is a program within the school of Personal and Professional Learning

9. Will AP 4023 (Procedures for Merging/Splitting Departments) be needed?

NA

10. Which current faculty will be responsible for this program? Julianne Johnson and Robert Wonser

11. Are faculty in the school, department, or proposed program discipline supportive of this program? List faculty:

Current committee members: Julianne Johnson (co-chair) Robert Wonser (co-chair) Ron Dreiling, Brent Riffel Kelly Burke, Victoria Leonard, Michelle LaBrie, Cindy Stephens, Mehgen Andrade, Chloe McGinley, Joy Shoemate, CETL Instructors: Mehgen Andrade, Chris Blakey, Kelly Burke, Katie Coleman, Kelly Cude, Deanna Davis, Erin Delaney, Alexa Dimakos, Ron Dreiling, Tricia George, Andrew Jones-Cathcart, Adam Kempler, Karyl Kicenski, Michelle LaBrie, Victoria Leonard, Tammy Mahan, Lisa Malley, Patty Robinson, Cindy Stephens, Erica Seibert

Human Resources:

12. What will be the programs impact be on current faculty and instructional support staff (deans, directors, administrative assistants, lab technicians)? Are they available to support this program?

We have the existing support of Joe Gerda, Daylene Meuschke and Paul Wickline as well as administrative support from Jocelyn Harris

13. What additional staffing resources will be needed to support this program?

If CETL NC ends up expanding as we anticipate, but we may need to hire additional faculty members within the college to teach additional sections.

Financial Support:

14. What is the funding source for this program?

Currently, Guided Pathways funds CETL, but there are obvious needs to institutionalize the program and offer learning opportunities to the community at large. CETL NC would be beneficial to the college because it not only supports excellence in the classroom, but it also brings in extra funding. CETL NC is beneficial to the community because these excellence in teaching certificates demonstrate learning and career

development and advancement in education.

15. What is the plan for institutionalization of this program if grant funded? N/A - or See above

SECTION 4 – Alignment of Program

1. How does this program relate to current college curriculum and offerings in the context of the academic mission of the College?

CETL NC extends the excellence in teaching from the COC campus to the community at large.

2. How does this program align with the mission, values, and goals of College of the Canyons as outlined in the most recent Strategic Plan?

The Mission Statement is: “As an innovative institution of excellence, College of the Canyons offers an accessible, enriching education that provides students with essential academic skills and prepares students for transfer education, workforce-skills development, and the attainment of learning outcomes corresponding to their educational goals. To fulfill its mission, College of the Canyons embraces diversity, fosters technical competencies, supports the development of global responsibility, and engages students and the community in scholarly inquiry, creative partnerships, and the application of knowledge. Follow the link for more, including the college’s vision, philosophy and strategic goals.”

The mission of CETL has always been to ensure the best learning outcomes for our students by ensuring the best training for our faculty. CETL has been committed to this from day one. To that end CETL has created or reappropriated existing courses taught by faculty at COC to ensure the highest quality teaching and learning. Finally, our Future Instructors in Training (FIT) program is another avenue to effectively prepare faculty to teach in our diverse student populations.

This realignment of CETL fulfills this mission in at least two major ways. First, by preparing faculty to effectively teach our students we are pursuing the mission of the college directly by preparing our students for transfer and careers. Secondly, some of the courses we offer and plan to offer will directly prepare the workforce to teach here in the Santa Clarita Valley. The courses outlined above speak to the mission of preparing faculty to effectively teach the full range of students we serve at the college and throughout the K-12 system here in the Santa Clarita Valley.

Furthermore, the CETL program as envisioned will directly address some of the major components of the strategic learning plan including: **teaching and learning, respect for all people, partnership with the community and excellence.**

It’s pretty straightforward, but the Center for Excellence in Teaching and Learning is specifically designed to help our faculty improve their teaching skills through rigorous, high quality coursework geared towards pedagogy. Respect for all people is addressed throughout all of our courses indirectly but also very directly through our Culturally Responsive Teaching course. That course explores how to respond to, include and

value all of our diverse learners with an emphasis on our disproportionately impacted students.

As you're all aware, for some time now COC has been offering our concurrent and dual enrollment courses with the surrounding high schools. This partnership has been great for the districts involved and for the students of the Santa Clarita Valley. We have heard interest from some of those faculty, many of whom teach for the William S Hart district as well as for College of the Canyons, the need for further training geared towards these faculty and student populations. In our most direct efforts yet, through this redesign of CETL we are reaching out to and responding directly to the needs of the local community of educators by positioning our courses and making them available to educators throughout the K-12 system. We will continue to prepare faculty at COC as well. Everything CETL does focuses on excellence in the classroom. We will continue this tradition throughout the transition and expand into currently underserved areas.

Look up the strategic plan and get stuff. Always looking to partner with the community. Dual and concurrent enrollment.

3. How does this program align with access and equity goals for students? How will this program have an impact on diversity?

As mentioned above, this program will have far-reaching effects for the districts involved and the students we serve. Courses currently offered and the ones we're planning on creating, will reach all students. All of our courses offered in some way align with access and equity goals by improving learning for students.

Skilled Teacher Certificate and Teaching Strategies were designed to help instructors gain the skills to teach effectively. But we also have courses aimed at eliminating equity gaps more directly. Culturally Responsive Teaching especially, will help train faculty to respond to the needs of all students more effectively, specifically our traditionally underserved student populations. We also plan to create courses geared towards other student populations. Possibilities include veterans, dual enrollment learners and adult learners.

Please attach appendices of supporting data and information here:

The Center for Excellence in Teaching and Learning: Course Descriptions doc

The Center for Excellence in Teaching and Learning: Course Descriptions

The Skilled Teacher Certificate (54 hours of instruction/Equivalent to 3 Units): Hybrid Online

This year-long course, which begins each fall semester and finishes each spring semester, provides faculty opportunities to explore current research on teaching and learning, learn new approaches and techniques to enhance student success, and implement these practices in a learning community of fellow teachers.

Critical Thinking in the Classroom (18 hours of instruction/Equivalent to 1 Unit): Hybrid

“Critical thinking” has become a popular buzzword throughout academe. However, when it comes down to how to actually encourage critical thinking in our classrooms, and what doing so might mean for our particular courses, we often have questions. Many of us may benefit from investigating and discussing these things with our colleagues. In this hybrid online 18 hour/1 unit equivalent course, we will first reacquaint ourselves with some fundamental critical thinking tools, and then we will have the opportunity to discuss these strategies amongst ourselves, and to think about utilizing and applying them in our own classrooms. [10 hours onground, and 8 hours online via Canvas] We will also be discussing various barriers to critical thinking that are especially relevant in contemporary society, and how they affect our classrooms. Join us!

Culturally Responsive Teaching (18 hours of instruction/Equivalent to 1 Unit): Hybrid

This course is designed to build inclusivity through co-teaching and pedagogical documentation exercises. Rather than assuming ignoring differences makes the classroom a culturally neutral space, this course will help professors explore and build cultural competency. Participants explore their own assumptions about race, class, and culture; and learn strategies for creating classrooms that are culturally inviting to all. Covering essential theories around culturally responsive teaching, this course equips professors with the essential teaching methods and strategies needed to connect effectively with students of all cultural backgrounds.

Introduction to Teaching Strategies (16 hours of instruction) Hybrid

Introduction to Teaching Strategies is designed to help those who are new or somewhat new to teaching by exploring fundamental best practices in teaching. The focus throughout is on self-reflection to enhance and develop authentic best practices for each participant. Through presentations, discussion, and group collaboration, participants will be exposed to the following topics: Core ideas and Principles of Effective Teaching; Developing Effective Course Syllabi;

Effective Classroom Communication; Classroom Climate; Active Learning; Student Learning Outcomes and Assessment.

The class consists of a total of 14 hours of onground learning and two hours of online learning (via Canvas), which is completed prior to the first onground meeting.

Introduction to Online Instruction (36 hours of 100% online instruction/Equivalent to 2 Units)

Introduction to Online Instruction explores the application of learning theories for online learners; differences between face-to-face and online learning; resources for online teaching and learning; course management systems and online learning tools; and best practices for online learning. The class is designed so that participants will experience the components of an online course from both student and instructor perspectives. This five-week, 100% online class will be taught via COC's Learning Management System, Canvas.

The class should appeal to those interested in utilizing an online learning management system, such as Canvas, in order to web-enhance an onground class, teach a hybrid online class, or teach a 100% online class.

This five-week, 100% online class will be delivered via COC's learning management system, Canvas. This course fulfills one of the required components of the College of the Canyons Online Instructor Certificate. For more information about meeting the COC Online Instructor Certificate, contact the Distance Learning program.

This course fulfills one of the required components of the College of the Canyons Online Instructor Certificate. For more information about meeting the COC Online Instructor Certificate, please visit the Online Instructor Certificate page at <http://www.canyons.edu/Offices/PD/Pages/OnlineInstructorCert.aspx> or contact the Distance Learning department.

Pre-Requisite: In order to participate in this course, faculty must have completed the COC Canvas Self-Paced Online training (4 hours) PRIOR to the start of the class. To access this training, faculty can go to www.canyons.edu/canvas and select "Enroll in Canvas Training Course."

Practical Assessment (18 hours of instruction/Equivalent to 1 Unit): Hybrid

This course will explore improving your assessment practices in your own classroom. Background on assessment and assessment tools will be reviewed as you reflect on your current practices. Collaborate with your colleagues to discover new strategies and improve your tried and true techniques. Online work will include readings, reflection, and

discussion. Onground sessions will focus on individual and collaborative work on specific assessments in actual courses.

Reading Strategies Workshop (36 hours of instruction/Equivalent to 2 Units): Hybrid

Reading Strategies Workshop, a Reading Apprenticeship course designed for a wide range of disciplines.

Here's how WestEd, the entity responsible for the highly regarded Reading Apprenticeship program that instructors of this course have completed and who have based their workshop upon, explains the approach:

What if teachers learned to recognize their own subject area expertise and to apprentice students into the ways of reading, writing, thinking, talking, and reasoning in their fields? And what if students were explicitly supported to build identities as people who can solve reading problems and persevere?

Reading Apprenticeship encourages exactly this kind of teaching and learning.

Teachers using the Reading Apprenticeship framework regularly model disciplinary-specific literacy skills, help students build high-level comprehension strategies, engage students in building knowledge by making connections to background knowledge they already have, and provide ample guided, collaborative, and individual practice as an integral part of teaching their subject area curriculum.

As a result, students develop the literacy competencies, subject area knowledge, and the learner dispositions they need—for school, college, careers, and life.

COC faculty understand how important it is for our students to improve their critical thinking skills, and Reading Apprentice strategies, the ones explored in this workshop, provide a vital component that leads to enhanced critical thinking and ultimately improved success rates.

This thought-provoking course familiarizes faculty with current research about academic literacy and critical reading. Participants will learn practical skills to create classroom environments that are more student-centered, collaborative, and meta-cognitive.

Participants will actively engage in the kinds of reading challenges their students face and practice strategies that address these challenges. All class sessions provide time for participants to model RA strategies so that they can apply them in their own classrooms.