MEMORANDUM

LARAMIE COUNTY COMMUNITY COLLEGE
Cheyenne | Laramie | Online

To:	Dr. Joe Schaffer, President
	Members, President's Cabinet
From:	Dr. Kari Brown-Herbst, Vice President Academic Affairs
CC:	Dr. Jill Koslosky, Dean, School of Business, Agriculture, & Technical Studies
	Troy Amick, Program Director, Information Technology
Date:	15 June, 2021
Subject:	Proposed Credentials, Information Technology

The Guided Pathways initiative at the College has created a deep examination of our academic offerings. This examination has challenged us to ensure our programs adhere to the tenets of the Pathways framework in supporting our students' success. Specifically, the College has committed to offering academic programs that are clear and intentional in design to meet students' goals in employment or further education. It is with respect for these tenets that I seek approval for four new credentials.

In March 2021 the LCCC Board of Trustees approved the creation of the Information Technology (IT) Pathway. The Pathway proposal detailed the planned modifications to existing programs as well as the development of several new credentials designed to meet the anticipated workforce needs of our regional employers. The proposed programs outlined below represent the first new developments in the implementation of the Information Technology Pathway. Each of the proposed programs has completed the required development and review process and has received approval of the Academic Standards Committee.

PROGRAMS' OVERVIEW:

Data Analytics AAS
The Data Analytics Associate of Applied Science program will prepare students for entry-level positions in fields related to data analysis, presentation, and warehousing. Students can earn various credit diplomas and stackable industry certifications while concurrently earning this AAS. Specifically, students complete the Datacenter Specialist CD during their first two semesters and then complete the Data Analytics Systems Administrator CD during their third and fourth semesters.

Data Analytics Systems Administrator CD
The Data Analytics Systems Administrator CD is completed in the second year of the Data Analytics AAS. The credential provides students with the essential skills and knowledge to administer core data warehousing and analysis systems.

Telecommunications Specialist CD
The Telecommunications Specialist Credit Diploma prepares students with the industry-established skills necessary for a career in telecommunications deployment, maintenance, and repair. Students gain expertise in ethernet, copper, and fiber optic networking, as well as structural access and design, and workplace communications.

Virtualization and Cloud Administrator CD
The Virtualization and Cloud Administrator Credit Diploma prepares students with the core skills set and experience to deploy, administer, and manage modern enterprise IT services on virtualized and cloud platforms. Successful completers of this credential can earn four (4) industry certifications, and gain experience on the most prevalent platforms.

PROGRAMS' OUTCOMES:
When fully implemented the Information Technology Pathway will serve many careers in the industry through an array of AAS degrees and stackable Credit Diplomas. The Credit Diplomas have been designed to be short in duration to maximize access for a broad student population. The Credit Diplomas also offer College exit ramps for students seeking immediate workforce entry while preserving the option to return to further study as career interests and requirements allow. The Associate of Applied Science degrees are built with this student flexibility in mind and are structured to include the CDs.

Data Analytics AAS
The Data Analytics AAS is comprised of 66 credits and has been designed as a 4-semester program. The first two semesters of the program sequence are identical to other AAS degrees in this pathway and result in the Datacenter Specialist Credit Diploma. The second year of the program comprises the Data Analytics Systems Administrator CD.

Upon successful completion of the AAS students will be able to:

1. Identify and describe uses for visualization controls including pie, bar, donut, and scatter plots and KPIs within the Power Platform infrastructure
2. Demonstrate the ability to develop a data model that applies cross-filter direction, security filtering, calculated table creation, hierarchies, and row-level security roles
3. Demonstrate the ability to create project and resource management planning tools to include interactive Gantt charts, Kanban boards, Resource Utilization boards, and Schedule boards within the vendor environment
4. Demonstrate the ability to develop and deploy predictive solutions using machine learning resources
5. Demonstrate understanding of the relationship between data management and data governance
6. Demonstrate essential knowledge and skills needed to design, configure, manage, and troubleshoot any wired and wireless network
7. Support IT infrastructures through understanding of the most common hardware and software
8. Plan, secure, and maintain IT environments using a variety of server equipment

Students will have the opportunity to meet these outcomes through the following program sequence:

Data Analytics AAS | Program Sequence			
1st Semester			
	CMAP 1615	Operating Systems	3
	CMAP 1920	Computer Hardware Maintenance	4
	MATH 1400	College Algebra	3
	STRT 1000	Strategies for Success	3
	ENGL 1010	English Composition I	3
		Semester Total:	**16**
2nd Semester			
	CSCO 2000	Cisco: Internetworking I	3
	CMAP 1960	Server Installation and Administration	3
	CMAP 2551	Scripting and Automation for IT Professionals	3
	HMDV 1510	Success in the Workplace: Soft Skills	3
	COMM 2010	Public Speaking	3
	HIST 1251 ECON 1200 HIST 1211 HIST 1221 POLS 1000	Wyoming History or Economics, Law, and Government or US to 1865 or US from 1865 or American and Wyoming Government	3
		Semester Total:	**18**
3rd Semester, Semester 1 of Data Analytics Systems Administrator CD			
	STAT 2010	Statistical Concepts – Business	4
	MSFT 2825	Microsoft Power Platform Fundamentals	3
	MSFT 2830	Analyzing Data with Microsoft PowerBI	4
	CMAP 1815	Database Applications	3
	CMAP 1200	Computer Information Systems	3
		Semester Total:	**17**
4th Semester, Semester 2 of Data Analytics Systems Administrator CD			
	MATH 2355	Mathematical Applications for Business	4
	CMAP 2620	Data Governance – Policy and Ethics	3
	MSFT 2925	Microsoft Dynamics 365 Fundamentals	4
	MSFT 2950	Introduction to Azure Machine Learning	4
		Semester Total:	**15**
		PROGRAM TOTAL	**66**

Data Analytics Systems Administrator CD
The Data Analytics Systems Administrator CD is comprised of 32 credits and has been designed as a 2-semester program.

Upon successful completion of the CD students will be able to:

1. Identify and describe uses for visualization controls including pie, bar, donut, and scatter plots and KPIs within the Power Platform infrastructure
2. Demonstrate the ability to develop a data model that applies cross-filter direction, security filtering, calculated table creation, hierarchies, and row-level security roles
3. Demonstrate the ability to create project and resource management planning tools to include interactive Gantt charts, Kanban boards, Resource Utilization boards, and Schedule boards within the vendor environment
4. Demonstrate the ability to develop and deploy predictive solutions using machine learning resources
5. Demonstrate understanding of the relationship between data management and data governance

Students will have the opportunity to meet these outcomes through the program sequence identified above.

Telecommunications CD
The Telecommunications CD is a 1-semester option for students pursuing an AAS in the Pathway and can also serve certification and/or upskill goals as a stand-alone credential.

Upon successful completion of the CD students will be able to:

1. Analyze common network problems from an OSI model, layered approach
2. Identify key industry standards necessary to specify, install, and test network cabling
3. Discuss ANSI/TIA-568 performance specifications for the optical fiber cables recognized in premises cabling standards
4. Interpret aspects of basic facility infrastructure construction, entry, and repair with regard to telecommunications services

Students will have the opportunity to meet these outcomes through the following program sequence:

Telecommunications CD	Program Sequence		
1st Semester			
	CSCO 2000	Cisco: Internetworking I	3
	HMDV 1510	Success in the Workplace: Soft Skills	3
	CMAP 1925	Telecommunications Infrastructure Design and Access	3
	CMAP 2515	Structured Cabling: Copper and Ethernet	4
	CMAP 2525	Structured Cabling: Fiber Optics	4
		PROGRAM TOTAL:	17

Virtualization and Cloud Administrator CD
The Virtualization and Cloud Administrator CD is a single-semester, 16-credit program. It can serve certification and/or upskill goals as a stand-alone credential or as an embedded CD in the pursuit of an AAS in the Information Technology Pathway.

Upon successful completion of the CD students will be able to:

1. Describe key services on the Cloud provider platform and their common use cases (for example, computer and analytics)
2. Demonstrate knowledge of Cloud provider service characteristics, including concepts, services, workloads, security and privacy, as well as pricing and support
3. Demonstrate understanding of virtualization and the related concepts as they apply to data center technology and basic troubleshooting processes
4. Demonstrate ability to implement, manage, and troubleshoot virtual infrastructure, using best practices for the defined vendor

Students will have the opportunity to meet these outcomes through the following program sequence:

Virtualization and Cloud Administrator CD | Program Sequence			
1st Semester			
	CMAP 2540	AWS Essentials	4
	CMAP 2535	Azure Fundamentals	4
	CMAP 2750	VMWare Virtualization I	4
	CMAP 2775	VMWare Virtualization II	4
		PROGRAM TOTAL:	16

The structure of the Information Technology Pathway is unique for its inclusion of multiple degree options and stackable certificates. I've included the proposed Pathway design in the attachments to offer visual clarification for the placement of these proposed programs within that structure.

PROPOSED IT PATHWAY

		CURRENT COMPUTER INFORMATION SYSTEMS			PATHWAY AAS	CYBERSECURITY AAS	DATA ANALYTICS AAS	APPLIED PROGRAMMING AAS
SEMESTER 1		^CIS 1 — Datacenter Technician CD (16)			IT 1 (16)			
SEMESTER 2		^^CIS 2 — CIS Network Administrator (CCNA) CD (18)			IT 2 (18) — Datacenter Specialist CD complete			
SEMESTER 3		CIS 3 (18)	OR	CYBER 3 (17)	IT 3 (13-16) CHOICE CD	CYBER 1 (16) CCNA CD	DATA 1 (17)	APPLIED 1 (16) Programming Fundamentals CD
SEMESTER 4		CIS 4 (17)		CYBER 4 (18)	IT 4 (16) CHOICE CD	CYBER 2 (16) Cyber Administrator CD	DATA 2 (15)	APPLIED 2 (16) Programming Core CD
CREDITS		69		69	63-66	66	66	66
Credentials Earned		Computer Information Systems AAS; Datacenter Technician CD; CIS – Network Administrator (CCNA) CD; CIS – Systems Administrator CD		Cybersecurity AAS; Datacenter Technician CD; CIS – Network Administrator (CCNA) CD	Datacenter Specialist CD; Information Technology AAS; 1 or 2 choice CDs	Datacenter Specialist CD; Cybersecurity AAS; CCNA CD; Cybersecurity Administrator CD	Datacenter Specialist CD; Data Analytics AAS; Data Analytics Systems Administrator CD	Datacenter Specialist CD; Applied Programming AAS; Applied Programming Fundamentals CD; Applied Programming Core CD

IT 3 CHOICE CDs
CCNA (16)
Database Administrator (first half) (13) (FA24)
Programming Fundamentals (16)
Telecommunications Specialist (16)

IT 4 CHOICE CDs
Cyber Security Administrator (16)
Database Administrator (second half) (16) (SP25)
Virtualization and Cloud Administrator (16)

Wyoming Community College Commission

NEW PROGRAM REQUEST FORM

College	Laramie County Community College
Date	May 10, 2021
Program Title	Data Analytics

Type of Credential	☐ AA	☐ AS	☐ AFA	☒ AAS	☐ Certificate
	☐ Other	Click or tap to enter text.			

Total Credit Hours	66
CIP Code	11.0401

Classification of Instructional Programs/CIP obtained from the National Center for Educational Statistics at https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=55 . Double check your recommendation with the course coordinator and/or Student Records.

Title	Data Analyst/Data Warehouse Specialist

Rationale for request	
Type of Program	☐ Transfer preparation ☒ Short term workforce placement ☐ One-year workforce placement ☐ Special need endorsement
Certificate Questions *More than one may apply*	☒ **Yes** ☐ **No** local or state employer or industry specific ☐ **Yes** ☒ **No** nationally recognized ☒ **Yes** ☐ **No** examination or licensure preparation ☐ **Yes** ☒ **No** practicum ☐ **Yes** ☒ **No** stackable Title IV Financial Aid Eligible ☒ **Yes** ☐ **No** *(minimum of 16 semester hours)* *(Stafford Loans, Perkins Grants, Pell Grants and Federal Campus-based Grants)*
New program start	☐ NA **OR** identify the semester the program will start: **Fall 2022**
Taught by non-accredited vendors?	☐ YES (see below) ☒ NO Click or tap to enter text.
WCCC or State Priority	☒ YES (see below) ☐ NO *(See the WCCC website, there are several programs which have a state priority, such as the Governor's Economically Needed Diversity Options for Wyoming/ENDOW* Information Technology – Data Warehousing and Business Data Intelligence

Program Curriculum	
Program Description	The Data Analytics Associate of Applied Science program is specifically designed to prepare students for entry-level positions in fields related to data analysis, presentation, and warehousing. Students can earn various credit diplomas and stackable industry certifications while concurrently earning this A.A.S. Students complete the Datacenter Specialist credit diploma during their first two semesters and then complete the Data Analytics Systems credit diploma during their third and fourth semesters.

New Curriculum	☒ YES (see below) ☐ NO

*List the new courses **alphabetically**. Include prefix, course number, course title, credit hours. Check the [Wyoming Transfer Catalog](#) for possible courses and numbers. Additionally, WCCC has a statewide common course numbering system (CCNS). Colleges must ensure all new courses are aligned with the CCNS. Confirm this alignment with the course coordinator and/or Student Records. Note that CCNS alignment and/or new course title and number requests to the WCCC will take at least a week to process.*

College Catalog Considerations (check all that apply)	Prefix	Number	Title	Credits	^LOI
☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	CMAP	2551	Scripting and Automation for IT Professionals	3	3
☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	MSFT	2825	Microsoft Power Platform Fundamentals	3	3
☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	MSFT	2830	Analyzing Data with Microsoft Power BI	4	3
☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	CMAP	2620	Data Governance – Policy and Ethics	3	3
☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	MSFT	2925	Microsoft Dynamics 365 Fundamentals	4	3
☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	MSFT	2950	Introduction to Azure Machine Learning	4	3
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
			TOTAL CREDITS	**21**	

^Course Coordinator can provide.

Similar programs in Wyoming? *(See WCCC Program List)*	☐ **Yes (list Colleges below)** ☒ **No** Click or tap here to enter text.		
Discussions with other Community Colleges	☐ **Yes (see below)** ☒ **No (see rationale below)** This is a new program for the state, and is not currently being pursued by other colleges, as per conversations during course equivalency discussions in Spring 2021. These discussions included Jennifer Allen, WWCC; Troy Amick, LCCC; Nicole Anderson, WCCC; Leesa Lee, WWCC; Christina Rigdon, NWCCD; Stu Moore, WWCC; Krissy Wallage, CWC; Brandon Wilson, EWC; Matt Herr, CWC; Marjorie Anderson, CCC; and Lisa McClure, WWCC.		
Additional Resources (faculty, support services, equipment or supplies*)*	☒ **Yes (see below)** ☐ **No** **STAFFING IMPACT:** Faculty training requirements, adjunct faculty identification and employment, full-time faculty to assist with additional instructional load. **BUDGET IMPACT:** Minimal impact associated with program implementation; eventual faculty positions in information technology discipline are anticipated as demand for this credential rises.		
Primary Student Audience	Data science professionals, industry professionals, students seeking careers in business intelligence and data warehousing		
Anticipated three-year unduplicated headcount	Year one: 12	Year two: 14	Year three: 17

Projected Demand in Wyoming and Nationally
(Labor market anticipated demand upon completion of the program and wages for this career field)

Suggested data sources for Occupational Outlook and Wages:

- Career One Stop- US Department of Labor
- Bureau of Labor Statistics (occupational outlook handbook) https://www.bls.gov/ooh/
- Wyoming Labor Market Information (WLMI) http://doe.state.wy.us/lmi/

Projected Demand

Location	Employment			
	Year 2020	**+10 years**	**Percent Change**	**Job Openings**
UNITED STATES	50,042	96,544	+92.9%	46,502
	Employment			
	Year 2020	**+10 years**	**Percent Change**	**Job Openings**
WYOMING	1100	3085	+180.5%	1,985

State and National Wages

Location	Pay Period	Year 2019				
		10%	25%	Median	75%	90%
UNITED STATES	Hourly	$25.86	$33.39	$44.04	$57.28	$70.80
	Yearly	$53,800	$69,500	$91,600	$119,100	$147,300
WYOMING	Hourly	$23.96	$31.19	$40.14	$51.50	$63.36
	Yearly	$49,800	$64,900	$83,500	$107,100	$131,800

APPENDIX A- PROGRAM TERM BY TERM PLAN
Provide the program's term by term plan below

WCCD PROPOSED PROGRAM OF STUDY FOR: Data Analytcis Associate of Applied Science

RECOMMENDED CURRICULUM SEQUENCE: PROPOSED			
COURSE			
Prefix	**Number**	**Title**	**Credits**
Fall Semester 1st Year			
CMAP	1615	Operating Systems	3
CMAP	1920	Computer Hardware Maintenance	4
MATH	1400	College Algebra	3
STRT	1000	Strategies for Success	3
ENGL	1010	English 1: Composition	3
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
		TOTAL FALL SEMESTER	**16**
Spring Semester 1st Year			
CSCO	2000	Cisco: Internetworking I	3
CMAP	1960	Server Installation and Administration	3
CMAP	2551	Scripting and Automation for IT Professionals	3
HMDV	1510	Success in the Workplace: Soft Skills	3
COMM	2010	Public Speaking	3
HIST ECON HIST HIST POLS	1251 1200 1211 1221 1000	Wyoming History or Economics, Law, and Government or US to 1865 or US from 1865 or American and Wyoming Government	3
		TOTAL SPRING SEMESTER	**18**
Summer Semester 1st Year			
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		TOTAL SUMMER SEMESTER	0
Fall Semester 2nd Year			
STAT	2010	Statistical Concepts - Business	4
MSFT	2825	Microsoft Power Platform Fundamentals	3
MSFT	2830	Analyzing Data with Microsoft PowerBI	4
CMAP	1815	Database Applications	3
CMAP	1200	Computer Information Systems	3
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
		TOTAL FALL SEMESTER	**17**
Spring Semester 2nd Year			

MATH	2355	Mathematical Applications for Business	4
CMAP	2620	Data Governance – Policy and Ethics	3
MSFT	2925	Microsoft Dynamics 365 Fundamentals	4
MSFT	2950	Introduction to Azure Machine Learning	4
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
		TOTAL SPRING SEMESTER	15
		TOTAL PROPOSED PROGRAM CREDITS	**66**

Wyoming Community College Commission

NEW PROGRAM REQUEST FORM

College	Laramie County Community College
Date	May 10, 2021
Program Title	Data Analytics Systems Administrator

Type of Credential	☐ AA	☐ AS	☐ AFA	☐ AAS	☐ Certificate
	☒ Other	Credit Diploma			

Total Credit Hours	32
CIP Code	11.0802

Classification of Instructional Programs/CIP obtained from the National Center for Educational Statistics at https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=55 . Double check your recommendation with the course coordinator and/or Student Records.

Title	Business Intelligence Analyst

Rationale for request	
Type of Program	☐ Transfer preparation ☐ Short term workforce placement ☒ One-year workforce placement ☐ Special need endorsement
Certificate Questions *More than one may apply*	☒ **Yes** ☐ **No** local or state employer or industry specific ☐ **Yes** ☒ **No** nationally recognized ☒ **Yes** ☐ **No** examination or licensure preparation ☐ **Yes** ☒ **No** practicum ☐ **Yes** ☒ **No** stackable Title IV Financial Aid Eligible ☒ **Yes** ☐ **No** *(minimum of 16 semester hours)* *(Stafford Loans, Perkins Grants, Pell Grants and Federal Campus-based Grants)*
New program start	☐ NA **OR** identify the semester the program will start: Fall 2022
Taught by non-accredited vendors?	☐ YES (see below) ☒ NO Click or tap to enter text.
WCCC or State Priority	☒ YES (see below) ☐ NO *(See the WCCC website, there are several programs which have a state priority, such as the Governor's Economically Needed Diversity Options for Wyoming/ENDOW* Information Technology – Data Warehousing and Business Data Intelligence

Program Curriculum	
Program Description	The Data Analytics Systems credit diploma is designed to provide students with the essential skills and knowledge to administer core data warehousing and analysis systems. Graduates of this program demonstrate the expertise necessary to leverage data systems for actionable business intelligence.
New Curriculum	☒ YES (see below) ☐ NO

*List the new courses **alphabetically**. Include prefix, course number, course title, credit hours. Check the Wyoming Transfer Catalog for possible courses and numbers. Additionally, WCCC has a statewide common*

course numbering system (CCNS). Colleges must ensure all new courses are aligned with the CCNS. Confirm this alignment with the course coordinator and/or Student Records. Note that CCNS alignment and/or new course title and number requests to the WCCC will take at least a week to process.

College Catalog Considerations (check all that apply)	Prefix	Number	Title	Credits	^LOI
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☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	CMAP	2620	Data Governance – Policy and Ethics	3	2
☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	MSFT	2925	Microsoft Dynamics 365 Fundamentals	4	3
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☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
			TOTAL CREDITS	**18**	

^Course Coordinator can provide.

Similar programs in Wyoming? *(See WCCC Program List)*	☐ **Yes (list Colleges below)** ☒ **No** Click or tap here to enter text.		
Discussions with other Community Colleges	☐ **Yes (see below)** ☒ **No (see rationale below)** This is a new program for the state, and is not currently being pursued by other colleges, as per conversations during course equivalency discussions in Spring 2021. These discussions included Jennifer Allen, WWCC; Troy Amick, LCCC; Nicole Anderson, WCCC; Leesa Lee, WWCC; Christina Rigdon, NWCCD; Stu Moore, WWCC; Krissy Wallage, CWC; Brandon Wilson, EWC; Matt Herr, CWC; Marjorie Anderson, CCC; and Lisa McClure, WWCC.		
Additional Resources (faculty, support services, equipment or supplies)	☒ **Yes (see below)** ☐ **No** **STAFFING IMPACT:** Faculty training requirements, adjunct faculty identification and employment, full-time faculty to assist with additional instructional load **BUDGET IMPACT:** Minimal impact associated with program implementation; eventual faculty positions in information technology discipline are anticipated as demand for this credential rises.		
Primary Student Audience	Data science professionals, industry professionals, students seeking careers in business intelligence and data warehousing, IT Pathway graduates looking to expand skillsets		
Anticipated three-year unduplicated headcount	Year one: 12	Year two: 14	Year three: 17

Projected Demand in Wyoming and Nationally
(Labor market anticipated demand upon completion of the program and wages for this career field)

Suggested data sources for Occupational Outlook and Wages:

- Career One Stop- US Department of Labor
- Bureau of Labor Statistics (occupational outlook handbook) https://www.bls.gov/ooh/
- Wyoming Labor Market Information (WLMI) http://doe.state.wy.us/lmi/

Projected Demand

Location	Employment			
UNITED STATES	**Year** 2020	**+10 years**	**Percent Change**	**Job Openings**
	50,042	96,544	+92.9%	46,502
	Employment			
WYOMING	**Year** 2020	**+10 years**	**Percent Change**	**Job Openings**
	1100	3085	+180.5%	1,985

State and National Wages

Location	Pay Period	Year 2019				
		10%	25%	Median	75%	90%
UNITED STATES	Hourly	$25.86	$33.39	$44.04	$57.28	$70.80
	Yearly	$53,800	$69,500	$91,600	$119,100	$147,300
WYOMING	Hourly	$23.96	$31.19	$40.14	$51.50	$63.36
	Yearly	$49,800	$64,900	$83,500	$107,100	$131,800

APPENDIX A- PROGRAM TERM BY TERM PLAN
Provide the program's term by term plan below

WCCD PROPOSED PROGRAM OF STUDY FOR: Data Analytics Systems Credit Diploma

RECOMMENDED CURRICULUM SEQUENCE: PROPOSED			
COURSE			
Prefix	**Number**	**Title**	**Credits**
Fall Semester 1st Year			
STAT	2010	Statistical Concepts – Business	4
MSFT	2825	Microsoft Power Platform Fundamentals	3
MSFT	2830	Analyzing Data with Microsoft Power BI	4
CMAP	1815	Database Applications	3
CMAP	1200	Computer Information Systems	3
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
		TOTAL FALL SEMESTER	17
Spring Semester 1st Year			
MATH	2355	Statistical Concepts - Business	4
CMAP	2620	Data Governance – Policy and Ethics	3
MSFT	2925	Microsoft Dynamics 365 Fundamentals	4
MSFT	2950	Introduction to Azure Machine Learning	4
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
		TOTAL SPRING SEMESTER	15
		TOTAL PROPOSED PROGRAM CREDITS	**32**

Wyoming Community College Commission

NEW PROGRAM REQUEST FORM

College	Laramie County Community College
Date	May 10, 2021
Program Title	Telecommunications Specialist

Type of Credential	☐ AA	☐ AS	☐ AFA	☐ AAS	☐ Certificate
	☒ Other	Credit Diploma			

Total Credit Hours	17
CIP Code	11.0901 / SOC: 49-9052

Classification of Instructional Programs/CIP obtained from the National Center for Educational Statistics at https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=55 . Double check your recommendation with the course coordinator and/or Student Records.

Title	Fiber Optics Network Technician

Rationale for request	
Type of Program	☐ Transfer preparation ☒ Short term workforce placement ☐ One-year workforce placement ☐ Special need endorsement
Certificate Questions *More than one may apply*	☒ **Yes** ☐ **No** local or state employer or industry specific ☐ **Yes** ☒ **No** nationally recognized ☒ **Yes** ☐ **No** examination or licensure preparation ☐ **Yes** ☒ **No** practicum ☒ **Yes** ☐ **No** stackable Title IV Financial Aid Eligible ☐ **Yes** ☐ **No** *(minimum of 16 semester hours)* *(Stafford Loans, Perkins Grants, Pell Grants and Federal Campus-based Grants)*
New program start	☐ NA **OR** identify the semester the program will start: Fall 2022
Taught by non-accredited vendors?	☐ YES (see below) ☒ NO Click or tap to enter text.
WCCC or State Priority	☒ YES (see below) ☐ NO *(See the WCCC website, there are several programs which have a state priority, such as the Governor's Economically Needed Diversity Options for Wyoming/ENDOW* Information Technology – Telecommunications and Fiber Optics Specilists to support broadband expansion of ISPs.

Program Curriculum	
Program Description	The Telecommunications Specialist Credit Diploma is designed to prepare students with the industry-established skills necessary for a career in telecommunications deployment, maintenance, and repair. Students gain expertise in ethernet, copper, and fiber optic networking, as well as structural access and design, and workplace communications.
New Curriculum	☒ YES (see below) ☐ NO

*List the new courses **alphabetically**. Include prefix, course number, course title, credit hours. Check the [Wyoming Transfer Catalog](#) for possible courses and numbers. Additionally, WCCC has a statewide common course numbering system (CCNS). Colleges must ensure all new courses are aligned with the CCNS. Confirm this alignment with the course coordinator and/or Student Records. Note that CCNS alignment and/or new course title and number requests to the WCCC will take at least a week to process.*

College Catalog Considerations (check all that apply)	Prefix	Number	Title	Credits	^LOI
☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	CMAP	1925	Telecommunications Infrastructure Design and Access	3	3
☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	CMAP	2515	Structured Cabling: Copper and Ethernet	4	3
☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	CMAP	2525	Structured Cabling: Fiber Optics	4	3
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
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☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
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☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
			TOTAL CREDITS	**11**	

^Course Coordinator can provide.

Similar programs in Wyoming? *(See WCCC Program List)*	☐ **Yes (list Colleges below)** ☒ **No** Click or tap here to enter text.

Discussions with other Community Colleges	☐ **Yes (see below)** ☒ **No (see rationale below)**
	This is a new program for the state, and is not currently being pursued as for-credit courses by other colleges, as per conversations during course equivalency discussions in Spring 2021*. These discussions included Jennifer Allen, WWCC; Troy Amick, LCCC; Nicole Anderson, WCCC; Leesa Lee, WWCC; Christina Rigdon, NWCCD; Stu Moore, WWCC; Krissy Wallage, CWC; Brandon Wilson, EWC; Matt Herr, CWC; Marjorie Anderson, CCC; and Lisa McClure, WWCC. *WWCC expressed interest in Fiber-optics courses and telecommunications programs through Workforce Development non-credit paths during discussion panels with telecom providers.
Additional Resources (faculty, support services, equipment or supplies)	☐ **Yes (see below)** ☒ **No** **STAFFING IMPACT:** Existing faculty and adjunct resources will be leveraged for support of this program. **BUDGET IMPACT:** Minimal impact associated with program implementation; eventual faculty positions in information technology discipline are anticipated as demand for this credential rises.
Primary Student Audience	Industry professionals. Career changers, IT Pathway students seeking a career in fiber optics and telecommunications

Anticipated three-year unduplicated headcount	Year one: 12	Year two: 14	Year three: 15

Projected Demand in Wyoming and Nationally
(Labor market anticipated demand upon completion of the program and wages for this career field)

Suggested data sources for Occupational Outlook and Wages:

- Career One Stop- US Department of Labor
- Bureau of Labor Statistics (occupational outlook handbook) https://www.bls.gov/ooh/
- Wyoming Labor Market Information (WLMI) http://doe.state.wy.us/lmi/

Projected Demand

Location	Employment			
UNITED STATES	**Year** 2020	**+10 years**	**Percent Change**	**Job Openings**
	16,896	14,242	-15.4%	1903
	Employment			
WYOMING	**Year** 2020	**+10 years**	**Percent Change**	**Job Openings**
	331	532	+60.7%	38

State and National Wages

Location	Pay Period	Year 2019				
		10%	25%	Median	75%	90%
UNITED STATES	Hourly	$18.75	$23.63	$30.51	$40.01	$51.16
	Yearly	$39,000	$49,200	$63,500	$83,200	$106,400
WYOMING	Hourly	$17.27	$21.64	$28.11	$36.90	$45.74
	Yearly	$35,900	$45,000	$58,500	$76,800	$95,100

APPENDIX A- PROGRAM TERM BY TERM PLAN
Provide the program's term by term plan below

WCCD PROPOSED PROGRAM OF STUDY FOR: Telecommunication Specialist Credit Diploma

RECOMMENDED CURRICULUM SEQUENCE: PROPOSED			
COURSE			
Prefix	**Number**	**Title**	**Credits**
Fall Semester 1st Year			
CSCO	2000	Cisco: Internetworking I	3
HMDV	1510	Success in the Workplace: Soft Skills	3
CMAP	1925	Telecommunications Infrastructure Design and Access	3
CMAP	2515	Structured Cabling: Copper and Ethernet	4
CMAP	2525	Structured Cabling: Fiber Optics	4
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
		TOTAL FALL SEMESTER	17
Spring Semester 1st Year			
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		TOTAL SPRING SEMESTER	Click or tap here to enter text.
		TOTAL PROPOSED PROGRAM CREDITS	**17**

Wyoming Community College Commission

NEW PROGRAM REQUEST FORM

College	Laramie County Community College
Date	May 10, 2021
Program Title	Virtualization and Cloud Administrator

Type of Credential	☐ AA	☐ AS	☐ AFA	☐ AAS	☐ Certificate
	☒ Other	Credit Diploma			

Total Credit Hours	16
CIP Code	11.1002 / SOC: 15-1211
Classification of Instructional Programs/CIP obtained from the National Center for Educational Statistics at https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=55 . Double check your recommendation with the course coordinator and/or Student Records.	
Title	System, Networking, and LAN/WAN Management/Manager

Rationale for request	
Type of Program	☐ Transfer preparation ☒ Short term workforce placement ☐ One-year workforce placement ☐ Special need endorsement
Certificate Questions *More than one may apply*	☒ **Yes** ☐ **No** local or state employer or industry specific ☐ **Yes** ☒ **No** nationally recognized ☒ **Yes** ☐ **No** examination or licensure preparation ☐ **Yes** ☒ **No** practicum ☒ **Yes** ☐ **No** stackable Title IV Financial Aid Eligible ☒ **Yes** ☐ **No** *(minimum of 16 semester hours)* *(Stafford Loans, Perkins Grants, Pell Grants and Federal Campus-based Grants)*
New program start	☐ NA **OR** identify the semester the program will start: Spring 2023
Taught by non-accredited vendors?	☐ YES (see below) ☒ NO Click or tap to enter text.
WCCC or State Priority	☒ YES (see below) ☐ NO *(See the WCCC website, there are several programs which have a state priority, such as the Governor's Economically Needed Diversity Options for Wyoming/ENDOW* Information Technology – Advanced Technologies Support

Program Curriculum	
Program Description	The Virtualization and Cloud Administrator Credit Diploma is designed to prepare students with the core skills set and experience to deploy, administer, and manage modern enterprise IT services on virtualized and cloud platforms. Students can earn four (4) industry certifications, and gain experience on the most prevalent platforms. 16
New Curriculum	☒ YES (see below) ☐ NO

*List the new courses **alphabetically**. Include prefix, course number, course title, credit hours. Check the [Wyoming Transfer Catalog](#) for possible courses and numbers. Additionally, WCCC has a statewide common course numbering system (CCNS). Colleges must ensure all new courses are aligned with the CCNS. Confirm this alignment with the course coordinator and/or Student Records. Note that CCNS alignment and/or new course title and number requests to the WCCC will take at least a week to process.*

College Catalog Considerations (check all that apply)	Prefix	Number	Title	Credits	^LOI
☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	CMAP	2540	AWS Essentials	4	3
☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	CMAP	2535	Azure Fundamentals	4	3
☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	CMAP	2750	VMWare Virtualization I	4	3
☒ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	CMAP	2775	VMWare Virtualization II	4	3
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
☐ New course ☐ New number ☐ New prefix ☐ New title ☐ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
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□ New course □ New number □ New prefix □ New title □ CCNS alignment	Click or tap here.	Click or tap here.	Click or tap here to enter text.	Click or tap here.	Click or tap here.
			TOTAL CREDITS	**16**	

^Course Coordinator can provide.

Similar programs in Wyoming? *(See WCCC Program List)*	□ **Yes (list Colleges below)** ☒ **No** Click or tap here to enter text.		
Discussions with other Community Colleges	□ **Yes (see below)** ☒ **No (see rationale below)** This is a new program for the state, and is not currently being pursued by other colleges, as per conversations during course equivalency discussions in Spring 2021. These discussions included Jennifer Allen, WWCC; Troy Amick, LCCC; Nicole Anderson, WCCC; Leesa Lee, WWCC; Christina Rigdon, NWCCD; Stu Moore, WWCC; Krissy Wallage, CWC; Brandon Wilson, EWC; Matt Herr, CWC; Marjorie Anderson, CCC; and Lisa McClure, WWCC.		
Additional Resources (faculty, support services, equipment or supplies)	□ **Yes (see below)** ☒ **No** **STAFFING IMPACT:** Existing faculty can deliver this content. Impacts to instructional load will be mitigated by adjunct faculty in the near term; we anticipate full-time faculty needs in the future, but not for program implementation. **BUDGET IMPACT:** Minimal impact associated with program implementation; eventual faculty positions in information technology discipline are anticipated as demand for this credential rises.		
Primary Student Audience	Industry professionals, IT Pathway AAS students, graduates looking to expand skillsets		
Anticipated three-year unduplicated headcount	Year one: 12	Year two: 14	Year three: 15

Projected Demand in Wyoming and Nationally
(Labor market anticipated demand upon completion of the program and wages for this career field)

Suggested data sources for Occupational Outlook and Wages:

- Career One Stop- US Department of Labor
- Bureau of Labor Statistics (occupational outlook handbook) https://www.bls.gov/ooh/
- Wyoming Labor Market Information (WLMI) http://doe.state.wy.us/lmi/

Projected Demand

Location	Employment			
UNITED STATES	**Year** 2020	**+10 years**	**Percent Change**	**Job Openings**
	63,904	97,246	+52.2%	20,742
WYOMING	Employment			
	Year 2020	**+10 years**	**Percent Change**	**Job Openings**

		927	2,199	+137.2%	80

State and National Wages

Location	Pay Period	Year 2019				
		10%	**25%**	**Median**	**75%**	**90%**
UNITED STATES	Hourly	$26.68	$34.08	$44.48	$57.36	$71.89
	Yearly	$55,500	$70,900	$92,500	$119,300	$149,500
WYOMING	Hourly	$24.47	$30.99	$39.43	$49.33	$61.21
	Yearly	$50,900	$64,500	$82,000	$102,600	$127,300

APPENDIX A- PROGRAM TERM BY TERM PLAN
Provide the program's term by term plan below

WCCD PROPOSED PROGRAM OF STUDY FOR: Virtualization and Cloud Administrator

RECOMMENDED CURRICULUM SEQUENCE: PROPOSED			
COURSE			
Prefix	**Number**	**Title**	**Credits**
Fall Semester 1ˢᵗ Year			
CMAP	2540	AWS Essentials	4
CMAP	2535	Azure Fundamentals	4
CMAP	2750	VMWare Virtualization I	4
CMAP	2775	VMWare Virtualization II	4
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		TOTAL FALL SEMESTER	**16**
Spring Semester 1ˢᵗ Year			
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		TOTAL SPRING SEMESTER	Click or tap here to enter text.
		TOTAL PROPOSED PROGRAM CREDITS	16