

Wyoming Community College Commission
Request for New or Modified Degree or Certificate Programs

A. College Laramie County Community College

B. Date submitted to WCCC staff: December 19, 2018

C. Program

1. Request for:

New Program Modified Existing Program

2. **Program Title:** Plumbing Technology

3. Degree or Certificate to be awarded:

AA AS AAS Other Certificate

4. Total number of credit hours: 18 credits

5. CIP code (6-digit): 46.0503

6. Complete this section only if a certificate approval is requested (not required for modification request):

a. Choose one:

- transfer preparation
- short-term workforce placement
- one-year workforce placement
- special need

b. Certificate description – Which of these descriptors apply to this certificate request. 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** apprenticeship
- Yes** **No** stackable

c. Is completion of this certificate requested to count as a certificate of completion for WCCC degree and certificate completion metrics?

Yes **No**

- d. Is this certificate designed to be Title IV financial aid eligible?
 Yes No
- e. Planned semester/year new program will begin: Fall of 2019
- f. Will any part of this program be provided by non-accredited vendor(s)?
 Yes (provide details below) No

Click or tap here to enter text.

D. Rationale for this request

List state priorities addressed by program; pertinent partnerships; coordination with citizens; business; industry; non-profit organizations; or K-12 education; if applicable:

Southeastern Wyoming has formed a Next Generation Sector Partnership (NEXTGEN) with a focus on Construction to meet the needs of Wyoming as identified in the recently released ENDOW report. NEXTGEN states that "Secondary and post-secondary educational institutions are being called to engage with industry and align their curriculum and programming in new innovative ways." In order to meet the needs of Wyoming, NEXTGEN and the ENDOW initiative, LCCC has created this program to help build a skilled workforce to support the growing infrastructure.

LCCC has worked closely with local industries, the Wyoming State Government (Department of Workforce Services) and the Wyoming representative for the Office of Apprenticeship to gauge the level of interest in starting a program of study in Plumbing Technology. LCCC met with four local plumbing companies to discuss the need for a new program. The consensus of the group was that "basic knowledge is needed and is very much lacking in the applicant pool."

LCCC has been working to align the program's competencies with national competency standards to meet local needs. LCCC is now an Accredited Training Sponsor as part of the National Center for Construction Education and Research (NCCER) allowing us to align our local curriculum to national standards. By using national and local input for the program, we will provide the best curriculum and learning environment for our students. Also, locally we have created an Unified Advisory Board consisting of members from the HVAC, Electrical and Plumbing industries as well as the Office of Apprenticeship and LCSD#1 offices to help guide us in creating training programs to better develop a skilled workforce for Wyoming.

E. Program curriculum

1. Program description of a new or modified program:

The Plumbing Technology certificate is designed to give individuals the opportunity to acquire skills to assist with the installation and repair of plumbing systems in residential and small buildings. Students are introduced to diagrams, interpretation of blueprints, and practices in plumbing assembly. Students will gain knowledge of state codes and requirements.

Completion of the Industrial Systems Technology certificate is required for enrollment in Plumbing Technology certificate courses.

2. Previous program description (for modification request only):

Click or tap here to enter text.

F. New curriculum

Does this program include new curriculum? **Yes** (provide details below) **No**

Click or tap here to enter text.

1. List alphabetically the courses that are included in the program (include prefix, course number, course name, credit hours):

EXAMPLE:

<i>DRON</i>	<i>1010</i>	<i>Introduction to Drones</i>	<i>3 credits</i>
<i>DRON</i>	<i>1012</i>	<i>Drone Flying Techniques</i>	<i>2 credits</i>
<i>DRON</i>	<i>1020</i>	<i>Unmanned Aircraft Systems Maintenance</i>	<i>5 credits</i>
<i>ENGL</i>	<i>1010</i>	<i>English I: Composition</i>	<i>3 credits</i>
<i>MATH</i>	<i>1400</i>	<i>College Algebra</i>	<i>3 credits</i>
<i>TOTAL</i>			<i>16 credits</i>

CMGT 1520	Introduction to Blueprint Reading and Building Codes	3 Credits
FMT 1700	Introduction to Plumbing	3 Credits
FMT 1710	Plumbing Pipefitting	3 Credits
FMT 1720	Plumbing Piping, Water	3 Credits
FMT 1730	Plumbing Installation	3 Credits
HVAC 1600	Mechanical Piping Systems	3 Credits
TOTAL		18 Credits

2. Previous program curriculum (for program modification request only).
List alphabetically the courses that are included in the program (include prefix, course number, course name, credit hours):

Click or tap here to enter text.

G. New course prefixes, numbers, and descriptions

1. This program request includes courses new to Wyoming Community Colleges?
 Yes (if yes, complete items 1-4) **No**
2. This program would introduce a new course number new to Wyoming.
 Yes **No**
3. This program would introduce a course prefix new to Wyoming.
 Yes **No**
4. New course numbering, prefixes, course names, credit hours and LOIs have been coordinated with UW and WCCC staff:
 Yes **No** (coordination is required)
5. List courses new to Wyoming public higher education institutions that are included in the program (include prefix, course number, course name, credit hours, requested level of instruction (LOI of 1, 2, or 3) and course description):

EXAMPLE:

Course Prefix & Number	Course Title	Semester Credit Hour	Level of Instruction
<i>DRON 1010</i>	<i>Introduction to Drones</i>	<i>3</i>	<i>2</i>

Description: This course is designed to provide an introduction to the vast field of unmanned aircraft systems (drones) that are used across many industries including agriculture, civil engineering, construction, industrial, etc. This is a dynamic, emerging technology that is used for inspection, observation, security, surveillance, and progress updates in those many fields. The course provides both classroom instruction in the history of drones and how the technology is used in business and industry applications, along with lab and field experience in the basic operation of piloting drones safely and legally.

FMT 1700 Introduction to Plumbing (3CR) LOI 2
Students become familiar with the tools and equipment of the plumbing trade.
Basic skills needed to enter the plumbing career field will be developed. Students

will identify safety practices and methods used in the workplace as described in the Plumbing Code.

FMT 1710 Plumbing Pipefitting

(3CR) LOI 2

Students practice the procedures and safety requirements of installing components used for various plumbing applications. Students will complete a typical pipefitting project to include drawing its layout.

FMT 1720 Plumbing Piping, Water

(3CR) LOI 2

Students examine different types of water piping, fittings, and proper installation procedures. Students develop skills in joining and supporting various piping according to the Plumbing Code.

FMT 1730 Plumbing Installation

(3CR) LOI 3

Students examine the installation and repair of fixtures, faucets, and various valves used in the plumbing trade. Students will also be introduced to manufacturer's installation recommendations, uniform plumbing code, and good housekeeping practices.

H. Additional resources

Are additional resources needed through college or other external funds?

Yes (provide details below) **No**

Faculty members have completed the LCCC Space Reutilization Form requesting the lab space, CT 135 (old welding bay), to be repurposed into a training facility to better train students in our HVAC, Electrical and Plumbing programs.

Instructors will work with members of industry to acquire donated equipment to help get the program operational. A one-time funding request will be made to the College to help get CT 135 cleaned and built out. Dollar amount to be determined after approval of program and completion of any bidding process.

I. Projected demand in Wyoming and Nation

1. List current state and national data and estimated data for ten years from proposal date (not required for modification request).

United States	Employment		Percent Change	Job Openings
	Year: 2018	+ 10 years		
	480,600	555,800	+16%	6,100
Wyoming	Employment		Percent Change	Job Openings
	Year: 2018	+ 10 years		

United States	Employment		Percent Change	Job Openings
	Year: 2018	+ 10 years		
	1,309	1,730	+24%	340

List data sources:

<http://www.onetonline.org/link/summary/47-2152.02>

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2. State and National Wages

Location	Pay Period	Year: 2018				
		10%	25%	Median	75%	90%
United States	Hourly	\$15.13	\$18.97	\$25.28	\$33.52	\$44.14
	Yearly	\$31,470	\$39,470	\$52,590	\$69,710	\$91,810
Wyoming	Hourly	\$15.39	\$19.42	\$23.80	\$29.60	\$35.31
	Yearly	\$32,020	\$40,400	\$49,510	\$61,570	\$73,450

List data sources:

<http://www.onetonline.org/link/summary/47-2152.02>

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3. Primary student audience identified for this program (not required for modification request).

We anticipate targeting several different groups within the community, including: local high school, recent high school graduates, incumbent workers who are currently in the plumbing field and want to or are required to expand their knowledge; those that are seeking advancement opportunities; displaced workers desiring retraining; poverty-to-self-sufficiency training programs; and high school graduates who are interested in technical fields.

4. Three-year anticipated unduplicated headcount (not required for modification request).

Year One: 12
 Year Two: 12
 Year Three: 12

Basis for estimate:

Based on discussions with local industry, there is a shortage of skilled workers available to meet the need across many of our trades industries.

J. Identification of similar programs

1. List similar programs at other Wyoming community Colleges (not required for modification request).

Community College	Degree/Certificate	Number of Semester Credit Hours
CC	N/A	N/A
CWC	N/A	N/A
EWC	N/A	N/A
LCCC	N/A	N/A
NWCCD	N/A	N/A
NWC	N/A	N/A
WWCC	N/A	N/A

2. Summary of discussions with other Wyoming community college(s) faculty and administrators (not required for modification request).

N/A

K. Other program information (optional)

Additional information to assist the Commission to better understand this program

request may be provided if not previously included. (Additional information related to the WCCC Statewide Strategic Plan could assist the Commission.)

Recruitment & Marketing:

LCCC will utilize industry contacts from many different companies and industries to identify and recruit students currently in the workforce who need to update their skills. Industry partners are very supportive and have committed to referring students to the college. We plan to market to Department of Workforce Services, high school counselors and students, veterans and transitioning military personnel, poverty to self-sufficiency programs and other displaced workers. Also, a full marketing campaign if needed, will be designed for this program that would include: LCCC Website, Facebook, and other social media venues, college marketing opportunities such as television stations, press releases, radio interviews and other areas as identified by the respective public relations departments.

Partnerships

LCCC has been working to align the program's competencies with national competency standards to meet local needs. LCCC is now an Accredited Training Sponsor as part of the National Center for Construction Education & Research (NCCER) allowing us to align our local curriculum to national standards. By using national and local input for the program, we will provide the best curriculum and learning environment for our students. Also, locally we have created an Unified Advisory Board consisting of members from the HVAC, Electrical and Plumbing industries as well as the Office of Apprenticeship and LCSD#1 offices to help guide us in creating training programs to better develop a skilled workforce for Wyoming.

Program Outcomes

Program Outcome

Assemble pipe sections, tubing, or fittings, using couplings, clamps, screws, bolts, cement, plastic solvent, caulking, or soldering, brazing, or welding equipment in accordance with national standards.

FMT 1700 - Introduction to Plumbing

Identify the types of valves used with cast-iron pipe.

Program Outcome

Demonstrate installation of pipe assemblies, fittings, valves, appliances such as dishwashers or water heaters, or fixtures such as sinks or toilets, using hand or power tools.

FMT 1730 - Plumbing Installation

Demonstrate proper lavatory faucet installation.

Demonstrate proper kitchen sink installation.

Demonstrate proper softener bypass installation.

Demonstrate proper vacuum breaker installation.

Demonstrate proper disposal installation.

HVAC 1600 - Mechanical Piping Systems

Identify the type of piping material to be used in specific HVAC applications

Fabricate a copper tubing system to simulate installation of sealed hot water, steam and refrigerant systems in the field.

Program Outcome

Demonstrate knowledge of design techniques, tools, and principals involved in production of blueprints and drawings.

FMT 1700 - Introduction to Plumbing

Identify the major components of a water distribution system.

Program Outcome

Detect and locate leaks in plumbing by filling pipes or plumbing fixtures with water or air and observe pressure gauges.

FMT 1730 - Plumbing Installation

Explain drainage enzyme maintainers.

Demonstrate proper lavatory faucet installation.

Demonstrate proper kitchen sink installation.

Demonstrate proper softener bypass installation.

Demonstrate proper vacuum breaker installation.

Demonstrate proper disposal installation.

Program Outcome

Document and keep accurate and detailed records of work assignments.

FMT 1700 - Introduction to Plumbing

Identify the basic tools used in the plumbing trade.

SIGNATURE PAGE

By signing below the Vice President for Academic Affairs verifies that institutional curriculum approval processes have been completed and that the Community College Board of Trustees has approved this program request as per institutional policy.

Submitted by the Vice President for Academic Affairs:

Clark Harris

01/18/2019

Signature

Date

Clark Harris

Vice President of Academic Affairs

Printed Name

Title

Approved by the WCCC Academic Affairs Council:

Signature

Date

Joseph E. McCann

Programs Team Leader

Printed Name

Title

Approved by the Program Review Committee:

Signature

Date

Joseph E. McCann

Programs Team Leader

Printed Name

Title