

## **Inland Empire/Desert Regional Consortium**

### **Copper Mountain College New Certificates of Achievement/Automotive**

- 1. Automotive Technology Certificate of Achievement**
- 2. Alternative Fuel Vehicles Certificate of Achievement**
- 3. Transmission Service, Repair and Overhaul Certificate of Achievement**
- 4. (Automotive) Air Conditioning and Heating Service and Repair Certificate of Achievement**
- 5. Engine Performance and Driveability Certificate of Achievement**
- 6. Steering and Suspension Service Certificate of Achievement**

#### **First Read**

##### **A. Overview**

1. Overview of program being proposed.

The Copper Mountain College (CMC) Automotive Technology curriculum is designed to meet the requirements and standards set forth by the National Technician Education Foundation (NATEF) and to provide the automotive student with a solid foundation in the fundamentals of state of the art automotive systems theory and repair practices. This approach is intended to provide the student with the minimum training necessary to gain an entry-level position within the automotive service and/or repair industry. The Automotive program is not a new program and students currently may obtain an Associate Degree in Automotive Technology. These Certificates of Achievement will allow students the ability to present more solid verification of skills that they have learned in the courses.

##### **Overall Program Student Learning Outcomes**

Upon successful completion of this program students will be able to:

1. Identify the components, perform service on, and describe the construction features, theory and/or operating principles of all eight general automotive areas of ASE certification. (Mapping to Institutional SLOs: Information Competency)
2. Use various automotive test equipment: to diagnose vehicle component failures, determine the logical cause of the failure through complete and accurate analysis (either mechanical or electrical), evaluate and discuss findings, prepare a written estimate of needed system repairs, estimate the related costs, and perform and verify correct repairs in all eight general automotive areas of ASE certification. (Mapping to Institutional SLOs: Communication, Critical Thinking, and Information Competency)
3. Utilize applicable vehicle service information to locate pertinent procedures and specifications related to the inspection, service, diagnosis, repair, and adjustment of all automotive systems. (Mapping to Institutional SLOs: Information Competency)

4. Demonstrate proper use and safety practices associated with common automotive technician hand tools, precision measuring tools, power equipment, standard automotive laboratory equipment, and repair and service associated with electrical, hydraulic and mechanical systems. (Mapping to Institutional SLOs: Information Competency)
  5. Work independently and in groups to diagnose, service, repair, and maintain vehicles. (Institutional SLOs: Personal Development)
  6. Exhibit professionalism, sensitivity, tact, integrity, and appropriate communication skills when handling customer/co-worker needs, complaints, questions, and special challenges. (Mapping to Institutional SLOs: Personal Development, Ethics, Communication)
  7. Demonstrate computer information literacy for accessing data and documenting service. (Institutional SLOs: Information)
2. Labor Market information detail is included below.

## **B. Need**

- a. Labor Market Information & Analysis (CTE only)

### **Automotive Service Technicians and Mechanics**

#### **Inland Empire Data**

Jobs 2014 9055

Jobs 2017 9284

Projected Increase by 229

Median wage \$15.30 hourly

#### **San Bernardino County Data**

Annual Openings 181

Median Hourly Wage \$18.72

- b. Employer Survey (CTE only)\*

A qualitative survey of various automotive shop owners and employees was conducted during the Spring semester 2015 to determine if students with earned automotive certificates in any of the following areas would be of greater benefit as perspective employees and work cohorts. Additionally, they were asked “would such specialized certificates be of greater benefit to the Morongo Basin and the general service area of Copper Mountain College?” The specific certificates that the shop owners were asked about included: Automotive Technology, Alternative Fuel Vehicles, Transmission Service, Repair and Overhaul, Air Conditioning and Heating Service and Repair, Engine Performance and Driveability, and Steering and Suspension Service.

The survey was administered to various automotive shop owners and managers and peripheral associates within the automotive industry such as automotive part suppliers, tire repair shops, and smog inspection stations.

Respondents overwhelmingly perceive the implementation of specialized certificates to be of great benefit for their businesses and strongly endorsed the addition of specialized certificates to the current CMC curriculum offerings. The generalized perception from respondents included automotive repair now being parceled out in specific functions by multiple repair shops versus the former model of “one stop” repair facilities that once existed. In this regard, the respondents felt assured that students possessing specialty certificates would better serve their interests. They indicated that having cohorts specifically trained allows a new worker to be more easily trained in a specific repair area, which means the veteran employee would spend less time having to train new employees in the nuances often associated with their work.

In summary employers unanimously indicated a strong support for offering specialized certificates within the current automotive curriculum and those certificates would better serve students who are seeking employment in the automotive industry.

c. Explanation of Employer Relationship (CTE only)

The employers that were surveyed are either potential employers of CMC graduates or have already employed CMC graduates.

d. List of Members of Advisory Committee (CTE only)

**Yucca Valley, Ca:**

Robert Sterman, Autozone

John Hughes, Big O Tires

Jeff Stieringerm, CarQuest Auto Parts

Chris Fields, Jiffy Lube

Alex Cruz, Walmart Auto Dept.

James Snyder, NAPA Auto Parts

Allen Cross, O-Reilly Auto Parts

Bill Neff, Yucca Valley Quick Lube

**Twenty Nine Palms, Ca:**

David Bailey, Bailey's Towing Service

Alberto Reyes, E-Z Lube

Mark Mayes, Smoggy's

**Joshua Tree, Ca:**

Mike Sheppman, Garry's Tires

e. Recommendations of Advisory Committee (CTE only)

\*This is not **required** for first read if it is not yet available

As stated in the employer survey; CTE advisory members agreed that offering certificates to indicate specialized training is beneficial to the student and to the employers.

3. Are there other similar programs within Region 9 which may be adversely impacted?

Due to the geographical distance between CMC and the nearest college which is approximately a one hour drive there is no adverse impact expected.

4. Alignment with secondary programs in the region to develop pathways and the CTE pipeline. List where applicable, otherwise indicate 'NONE'.

<p>a. List the secondary and ROP feeder districts in the college's service area. District</p> <p><b>The Morongo Unified School District (MUSD) does not have an automotive program in their CTE offerings.</b></p>	<p>Feeder classes/programs currently being offered</p>
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b. What is the plan for coordination with feeder districts to build the CTE pipeline for this program? N/A

5. Is there a coordination of pathways with secondary and transfer post-secondary programs in the area?

There is not a specific pathway in place however CMC and the College of the Desert are collaborating on training equipment and curriculum for the alternative fuel (hybrid) training.

6. Other information the college wishes to share.

The students in the automotive program are currently learning much of the curriculum offered in these certificates. Offering the certificates will allow them to move forward with something to show the specific skills that they have. There has been discussion about future collaboration with MUSD.

**COPPER MOUNTAIN COLLEGE GENERAL AUTOMOTIVE TECHNOLOGY - PROPOSED  
CERTIFICATE OF ACHIEVEMENT**

DEPARTMENT	NO.	TITLE	UNITS
Required Courses:			
AUTO	004	Automotive Principles	4
AUTO	018	Engine Performance I	4
AUTO	020	Automotive Electrical Systems I	4
AUTO	021	Automotive Electrical Systems II	4
AUTO	035	Automotive, Steering, Suspension, and Alignment	4
AUTO	036	Automotive Brake Systems	4
AUTO	044	Automotive Engine Rebuild	4
RESTRICTED ELECTIVES		Choose one course from the list below:	
AUTO	027	Basic and Advanced Clean Air Car Course Engine and Emission Control Training (Level 1) and Smog Check Training (Level 2)	5
AUTO	045	Automatic Transmissions	4
AUTO	060	Automotive Heating and Air Conditioning	4
AUTO	065	Manual Transmissions and Transaxles	4
		REQUIRED COURSES	28
		RESTRICTED ELECTIVES	4-5
		CERTIFICATE TOTAL	32-33
		Advisor: Friedt	

**COPPER MOUNTAIN COLLEGE STEERING AND SUSPENSION SERVICE - PROPOSED  
CERTIFICATE OF ACHIEVEMENT**

DEPARTMENT	NO.	TITLE	UNITS
Required Courses:			
AUTO	004	Automotive Principles	4
AUTO	020	Automotive Electrical I	4
AUTO	035	Automotive, Steering, Suspension, and Alignment	4
AUTO	036	Automotive Brake Systems	4
RESTRICTED ELECTIVES		none	
		REQUIRED COURSES	16
		RESTRICTED ELECTIVES	0
		CERTIFICATE TOTAL	16
		Advisor: Friedt	

**COPPER MOUNTAIN COLLEGE ENGINE PERFORMANCE AND DRIVEABILITY - PROPOSED  
CERTIFICATE OF ACHIEVEMENT**

DEPARTMENT	NO.	TITLE	UNITS
Required Courses:			
AUTO	004	Automotive Principles	4
AUTO	018	Engine Performance I	4
AUTO	020	Automotive Electrical I	4
AUTO	029	Engine Performance II	4
AUTO	045	Automatic Transmissions	4
RESTRICTED ELECTIVES		none	
REQUIRED COURSES			20
RESTRICTED ELECTIVES			0
CERTIFICATE TOTAL			20
Advisor: Friedt			

**COPPER MOUNTAIN COLLEGE AIR CONDITIONING AND HEATING SERVICE AND - PROPOSED  
CERTIFICATE OF ACHIEVEMENT**

<b>DEPARTMENT</b>	<b>NO.</b>	<b>TITLE</b>	<b>UNITS</b>
Required Courses:			
AUTO	004	Automotive Principles	4
AUTO	020	Automotive Electrical I	4
AUTO	044	Engine Repair	4
AUTO	060	Automotive Air Conditioning and Heating	4
RESTRICTED ELECTIVES		none	
		REQUIRED COURSES	16
		RESTRICTED ELECTIVES	0
		CERTIFICATE TOTAL	16
		Advisor: Friedt	



**COPPER MOUNTAIN COLLEGE TRANSMISSION SERVICE, REPAIR AND OVERHAUL - PROPOSED  
CERTIFICATE OF ACHIEVEMENT**

DEPARTMENT	NO.	TITLE	UNITS
Required Courses:			
AUTO	004	Automotive Principles	4
AUTO	018	Engine Performance I	4
AUTO	020	Automotive Electrical I	4
AUTO	045	Automatic Transmissions	4
AUTO	065	Manual Transmissions	4
RESTRICTED ELECTIVES		none	
		REQUIRED COURSES	20
		RESTRICTED ELECTIVES	0
		CERTIFICATE TOTAL	20
		Advisor: Friedt	

**COPPER MOUNTAIN COLLEGE ALTERNATIVE FUEL VEHICLES - PROPOSED  
CERTIFICATE OF ACHIEVEMENT**

DEPARTMENT	NO.	TITLE	UNITS
Required Courses:			
AUTO	004	Automotive Principles	4
AUTO	018	Engine Performance I	4
AUTO	020	Automotive Electrical I	4
AUTO	045	Automatic Transmissions	4
AUTO	078	Hybrid and Alternative Fuel Vehicles	4
RESTRICTED ELECTIVES		none	
REQUIRED COURSES			20
RESTRICTED ELECTIVES			0
CERTIFICATE TOTAL			20
Advisor: Friedt			