CALIFORNIA COMMUNITY COLLEGES
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PROGRAM APPROVAL APPLICATION

NEW or SUBSTANTIAL CHANGE or LOCALLY APPROVED

(This application may not exceed 3 pages)

Fill In Form

Rail Systems Technology: Rail Vehicle Maintenance
Proposed Program Title

Spring, 2017
Projected Program Start Date

Los Angeles Trade-Technical College
College

Los Angeles Community College District
District

Contact Information

Marcia Wilson
Voting Member

Director
Title

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Phone Number

WilsonMR@lattc.edu
Email

Goal(s) of Program (Check all that apply):

☒ Career Technical Education (CTE) ☐ Transfer ☐ Other

Type of Program (Check all that apply):

☐ Certificate of Achievement 12-17 (or 17-27 quarter) units
☒ Certificate of Achievement 18+ semester (or 27+ quarter) units
☒ Associate of Science Degree
☐ Associate of Arts Degree

Reason for Approval Request (Check One):

☒ New Program ☐ Substantial Change ☐ Locally Approved

Program Information

0947.40 Recommended Taxonomy of Program (TOP) Code

_____ Units for Major-Degree

40 Total Units for Degree

40 Required Units-Certificate

Written Form

1. **Insert the description of the program as it will appear in the catalog. (See PCAH pp. 142 and 170)**
For many of us, it is obvious how the US transportation system affects our daily lives as we move from one place to another and rely on the system to transport items we purchase and use on a daily basis—particularly through rail transportation. In the Los Angeles region, rail transportation supports the largest container port complex in the U.S., 9th largest in the world, and the 3rd largest transit agency in the U.S. where nearly 1/5th of transit trips in the region are by commuter, light, or heavy rail. A career in rail transportation, as a rail mechanic, provides an opportunity to work within large rail companies and transportation agencies providing competitive wages, health and retirement benefits, and opportunities for career advancement. Employment at these companies/agencies often requires starting within entry positions and advancing through promotional opportunities. Because nearly half of the workforce will be eligible to retire within the next 10 years, employment outlook and career advance opportunities are promising. Program completers will also have the

requisite competencies to be employed as Installation, Maintenance, and Repair Worker Helpers and Machinery Maintenance Workers that also provide many employment opportunities.

In this program, students garner safety, electrical, and mechanical competencies required for the maintenance and repair of rail vehicles in these core areas: couplers, truck and axle, propulsion and dynamic braking, auxiliary inverters and batteries, friction brakes, HVAC, current collection and distribution, monitoring and diagnosing, car body, doors, communications systems, and car-borne cab signal control systems. Upon completion of the program, students are able to: • Identify and explain the operation of rail vehicle systems (such as engine, transmissions, brakes, electrical and suspension) along with their related subsystems. • Utilize the various manufacturer diagnostic software to accurately diagnose and repair rail vehicles. • Demonstrate proficiency in utilizing specialized tools and shop equipment in the repair of rail vehicles while adhering to all applicable industry safety standards.

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2. **Provide a brief rationale for the program.**
Rail transportation (commuter, light, and heavy rail) faces a technical skills shortage driven by changing technologies, shifting workforce demographics, record-breaking growth, continuing expansion of transit systems and users, and a rapidly aging workforce where nearly half of the workforce will be eligible to retire within the next 10 years. Industry leaders acknowledge the capacity of most agencies to train skilled technicians and new entrants/employees in the effective diagnosis, repair and maintenance of advanced capital equipment has been surpassed resulting in a shortage of skilled vehicle mechanics (American Public Transportation Association). This is particularly evident in the Los Angeles region. No rail technology education program, focusing on vehicle maintenance, exists in the region even though rail transportation supports the largest container port complex in the U.S., 9th largest in the world, and the 3rd largest transit agency in the U.S. (APTA, 2013). 17% of transit trips in the region are by commuter, light, or heavy rail. Moreover, rail usage has steadily increased due to significant investments in a regional rail network and these investments will continue over the next 15 to 20 years in order to meet population and goods movement growth/demand (Southern California Association of Governments, 2016 Regional Transportation Plan). Having the requisite workforce in rail transportation, particularly rail vehicle maintenance, is critical to the economic vitality and quality of life of the region.

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3. **Summarize the Labor Market Information (LMI) and employment outlook (including citation for the source of the data) for students exiting the program. (See PCAH pp. 85-88, 136, 147, 148, 165, 168, and 176)**
We anticipate approximately 20-30 students/yr will graduate within 3 years of implementation. The primary occupation this program addresses is Rail Car Repairer (SOC Code 49-3043.00). Program completers will also have the requisite competencies to be employed as Helper-Installation, Maintenance, and Repair Worker and Maintenance Worker, Machinery. The following is current labor market information on these occupations within a 50-mile radius of LATTC (Source: Economic Modeling Specialists, Inc., Career Coach, August 2016):

Job Title	Entry Wage	Median Wage	High Wage	Currently Employed	Annual Job Openings	Projected Increase in Next 4 Years	% Workforce Over Age 55
Rail Car Repairer	$13.72	$19.49	$28.00	613	42	12.7%	20%
Helper--Installation, Maintenance, and Repair Worker	$9.41	$14.00	$22.38	7,002	284	34%	13%
Maintenance Worker, Machinery	$12.22	$19.31	$33.42	4,444	78	-.7%	27%

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4. **List similar programs at other colleges in the Los Angeles and Orange County Region which may be adversely impacted. (There is space for 10 listings, if you need more, please contact laocrc@rsccd.edu).** All

colleges that comprise the LAOC Regional Consortium were consulted at a Consortium meeting attended by Vice President Leticia Barajas, Department Chair Jess Guerra, and Director Marcia Wilson. No college in southern California offers a program in rail technology nor has similar programs that address all requisite competencies required for rail occupations, vehicle maintenance.

College	Program	Who You Contacted	Outcome of Contact
None			

5. **List all courses required for program completion, including core requirements, restricted electives and prerequisites. (There is space for 20 listings, if you need more, please contact laocrc@rsccd.edu). (See PCAH pp. 143 and 171)**

Courses	Course Number	Course Title	Units
Diesel Technology	401	Rail System Overview, Safety, Tools, and Mechanical Principles	10
Diesel Technology	402	Rail Electrical and Electronic Principles	10
Diesel Technology	403	Rail Vehicle Pneumatic & Hydraulic Controls and HVAC & Car Body Maintenance	10
Diesel Technology	404	Rail Diesel Engine Fundamentals and Rail Accessory/Support Systems	10

6. **Include any other information you would like to share.**

Both the Los Angeles Metropolitan Transportation Agency (LA Metro) and the US Federal Transportation Administration (US FTA) recognize the critical importance of expanding educational programs that prepare the middle-skills workforce, particularly in rail technology vehicle maintenance. LA Metro has been instrumental in providing many subject matter experts, participating in several meetings and hundreds of hours, to assist with competency modeling that informed the development of this program over the past 2 years. The collage has also held meetings with Metrolink in order to landscape the competencies needed to address the maintenance of commuter rail vehicles. In addition, the college received a grant from US FTA to establish the Transportation Workforce Institute (TWI) at LATTC and a key outcome of the grant/TWI being the development of this program and the sharing of the resulting curriculum and related workforce development resources with other colleges throughout the U.S. In collaboration with the American Public Transit Association (APTA), national landscape analysis of rail-related transportation education and training programs and a cross-walk with APTA Rail Vehicles Maintenance Training Standards was conducted to the inform the development of this program.