



Discipline: Transportation
Date Submitted: April 1, 2024

**Cerritos College
 ARTICULATION AGREEMENT**

<p>Cerritos College Course: AUTO 100 - Automotive Maintenance and Operation (4 units)</p> <p>Cerritos College 11110 Alondra Blvd. Norwalk, CA 90650</p>	<p>Downey High School Course: Automotive Maintenance and Operation</p> <p>Downey High School 11040 Brookshire Ave. Downey, CA 90241</p>
<p>General Course Description: The course introduces the fundamentals of major automobile systems, including safety and preventative maintenance services. Students learn methodologies for inspecting and providing basic maintenance common to most vehicles. Students will work with the tools and equipment used for inspection, maintenance, repair, and diagnostic work, including the theory of operation, basic maintenance, lubrication, cooling, fuel, lighting, brakes, tires, ignition system, and roadside emergency procedures.</p> <p>The Automotive Technologies: Maintenance and Light Repair 2-year pathway prepares students with the industry-defined entry-level skills needed for an automotive technician position in multiple industry settings, including dealerships, independent automotive repair facilities, or city/county agencies. The program provides in-depth training with extensive hands-on experiences. Students learn the theoretical aspects of automotive diagnosis, repair, and service.</p>	
<p>College Prerequisite(s): none</p>	<p>HS Prerequisite(s): none</p>
<p>Advisories/Recommendations: none</p>	
<p>Course Content:</p> <ol style="list-style-type: none"> 1. Automotive Safety, Skills, and Tools <ul style="list-style-type: none"> • Introduction • Automotive Background • Shop Safety <ul style="list-style-type: none"> ○ Shop Safety Checklist • Environment and Hazardous <ul style="list-style-type: none"> ○ Materials Material Safety Data Sheets • Fasteners and Thread Repair • Hand Tools • Measuring Systems and Tools <ul style="list-style-type: none"> ○ Micrometer ○ Vernier Caliper • Service Information VIN code • Under-hood Inspection Safety Check 	

2. Engines and Operations

- Lube, Oil and Filter Service
 - Fluids Check
 - Vehicle Hoisting
- Gasoline Engine Operation
 - Gasoline Engine Identification
 - General Engine Specification
- Diesel Engine Operation
 - Diesel Engine Identification
- Engine Lubrication and Cooling Systems
 - Engine Cooling System Identification
 - Engine Cooling System Inspection
 - Engine Oil Change

3. Electrical Fundamentals, Ignition Systems, and Diagnosis

- Electrical Fundamentals
 - Digital Multimeter Use for Electrical Problems
 - Test Light Usage
- Electrical Circuits
 - Circuit Testers and Digital Meters
- Starting and Charging Systems
 - Battery Specifications
 - Battery and Capacity Tests
- Ignition Systems
 - Ignition System Identification
 - Spark Plug Specification
 - Ignition Inspection and Testing
- Computers and Sensors
 - Temperature Sensor Operation
 - Oxygen Sensor Operation
- Scan Tool and Diagnostic Procedures
 - Scan Tool Diagnosis

4. Fuels, Brakes, Tires, and Wheels

- Fuel Injection Systems
 - Air Intake Inspection
- Emission Control Devices
 - Evap System Component Inspection
 - PCV System Inspection
 - Catalytic Converter Rattle Test
- Brakes and Anti-Lock Braking Systems
 - Brake System Component Identification
 - Brake Fluid
 - Drum Brake Identification
 - Install Wheel and Torque Lug Nuts
 - Disc Brake Identification
 - Brake Pad Wear Indicator System
- Tires and Wheels
 - Tire Identification
 - Tire Pressure Monitoring System
 - Tire Inspection and Air Loss

- Tire Rotation
- 5. Steering Systems, Transmissions, and Heating/Air Conditioning Systems
 - Suspension and Steering Systems
 - Suspension Steering and Lubrication
 - Power Steering Fluid
 - Pre-Alignment Inspection
 - Manual Transmissions and Transaxles
 - Drain and Fill manual Transmission /Transaxle
 - Transmission/Transaxle Inspection
 - Differential Fluid Leaks
 - Automatic Transmissions and Transaxles
 - Automatic Transmission/Transaxle Inspection
 - Service Automatic Transmission/Transaxle
 - Diagnose Fluid Loss
 - Heating and Air Conditioning Systems
 - AC Component Identification
 - Heating System Performance Test
 - Inspect Belts and Hoses
- 6. Automotive Technologies Careers
 - Industry Knowledge
 - Problem Solving Skills
 - Interpersonal Skills
 - Attention to Detail
 - Customer Service Skills
 - Work Ethics
 - Business Practices
 - Job Outlook
 - Postsecondary Education at Cerritos College
 - Industry Certifications

Competencies and Skill Requirements.

At the conclusion of this course, the student should be able to:

- Perform a thorough vehicle safety inspection.
- Perform basic preventative maintenance on a vehicle.
- Identify, describe, and detail safe work practices of base engine components and the process of internal combustion.
- Discuss and demonstrate application of the major concepts of electrical theory.
- Identify the braking system components and demonstrate common repair scenarios.
- Explain the operation of the fuel and ignition systems. Present workplace safety procedures for working with these systems.

Measurement Methods:

- Quizzes
- Midterm examination
- Outside assignments
- Notebook
- Skills demonstration
- Safety
- Graded written assignments

Textbooks or Other Support Materials:

Automotive Technology Principles, Diagnosis, and Service, 6th edition 9780135257490 2020





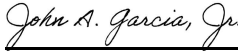

Procedures for Course Articulation:

Cerritos College credit for the articulated course listed above may be received when the following criteria are met:

1. Student has completed the articulated course listed above, *Automotive Maintenance and Operation*, with a grade of "B" or higher.
3. Student must enroll at Cerritos College within two (2) years from the semester date in which the course was completed.
4. Student will complete and submit the Cerritos College *Petition for Credit by Examination for Articulated High School Course* form to the Office of Educational Partnerships & Programs at Cerritos College.
5. A maximum of 30 units may be awarded through credit by examination.

This Agreement will be reviewed annually and will remain in effect until cancelled by either party giving 30 days written notice.

High School/ROP District Signatures**Cerritos College Signatures**

 <u>Trinidad Linares (May 8, 2024 19:28 PDT)</u>	May 8, 2024	 <u>Joe Mulleary (May 10, 2024 08:36 PDT)</u>	May 10, 2024
Instructor/Department Chair	Date	Faculty/Department Chair	Date
 <u>Tom Houts (May 9, 2024 07:58 PDT)</u>	May 9, 2024	 <u>Yannick Real (May 10, 2024 08:36 PDT)</u>	May 10, 2024
Principal	Date	Dean of Instruction	Date
 <u>John A. Garcia, Jr. (May 10, 2024 08:36 PDT)</u>	May 10, 2024		May 10, 2024
Superintendent	Date	Vice President	Date