EL CAMINO COLLEGE
COURSE OUTLINE OF RECORD - Approved

Subject:	NATE
Course Number:	3
Descriptive Title:	Automotive Manufactures Training 1
Division:	Industry and Technology
Department:	Automotive Technology
Course Disciplines:	Automotive Technology
Catalog Description:	This is the first of two courses designed to prepare students for entry-level employment from an automotive manufactures dealership training program to meet the requirements set by the learning management system. The principles of engines, automatic transmissions, manual drive trains, axles, brakes, steering, and suspension will be vital topics defined by the manufacture. Topics are to be administered according to the student's course of study.
Recommended Preparation:	Automotive Technology 14 or Automotive Technology 16 or Automotive Technology 34 or Automotive Technology 35 or Automotive Technology 43
Course Length:	Full Term
Hours Lecture (per week):	2.5
Hours Laboratory (per week):	0
Outside Study Hours:	5
Total Course Hours:	45
Course Units:	0
Grading Method:	Pass/No Pass only
Credit Status:	Non Credit
Transfer CSU:	No
Effective Date:	
Transfer UC:	No
Effective Date:	
General Education ECC:	
Term:	
Other:	
CSU GE:	
Term:	
Other:	
IGETC:	
Term:	
Other:	

Student Learning Outcomes:	**SLO #1 Safety** Recognize and identify shop safety, environmental hazards and sustainable environmental practices in an automotive shop. **SLO #2Basic Skills** Develop the skills needed to perform repairs on engines, automatic transmissions, manual drive trains, axles, brakes, steering, and suspension systems. **SO #3 Research** Perform basic research on proper safety precautions, established maintenance scheduling, accurate inspection processes, and repair procedures resulting in efficient repairs.
Course Objectives:	1. Comply with shop and vehicle safety practices established by learning management system. 2. Understand maintenance related to engines, automatic transmissions, manual drive trains, axles brakes, steering and suspension as defined by the manufactures standards. 3. Understand new models training needs that are set with each new model year. 4. Evaluate the cause of a customer complaint and determine the corrective action needed that complies with manufacturer's specifications as described by the course content. 5. Understand the various fluid level check points, fluid characteristics and filling procedure for each fluid for multiple automotive systems as described by the course content. 6. Perform multipoint vehicle inspection, identifying and documenting various maintenance components and systems as described by the course content. 7. Identify damaged, defective, or inoperable components as described by the course content. 8. Follow preventive maintenance schedule as defined by the manufacturer, based on the type of driving done as described by the course content. 9. Accurately document repairs and maintenance procedures on a service repair order as described by the course content. 10. Recognize maintenance indicators used for various systems and research how to properly reset maintenance indicators based on various factors as described by the course content.
Major Topics:	**I. Overview, Safety and Industry (5 hours, lecture)** A. Course requirements & policies B. Automotive shop safety C. Health & safety D. Automotive tools & equipment E. Introduction to Automotive Industry F. Careful communications **II. Research, Measurement and Documentation (5 hours, lecture)** A. Completing an efficient inspection B. Technical Service Bulletins (TSB) C. Ethical sales practices D. Warranty solution E. Pay for service F. Labor rates & time G. Basic business terms & math H. Privacy issues

	A. Measurement; tools, systems & math **III. Vehicle Service (6 hours, lecture)** A. Express service B. General maintenance C. Model A service D. Model B service E. Model C service **IV. Gasoline and Diesel Engine Systems (6 hours, lecture)** A. Gasoline engine operation diagnosis & repair B. Diesel engine operation diagnosis & repair C. Diesel air inlet, fuel supply, fuel injection systems & exhaust after treatment D. Noise, Vibration & Harshness (NVH) E. Turbocharging & direct injection **V. Automatic Transmission/Transaxle (6 hours, lecture)** A. Basic operation & models B. Mechanical components C. Electronic control systems D. Diagnosis service & overhaul **VI. Manual Drive Train and Axles (6 hours, lecture)** A. Operation, types, diagnosis & service B. Driveline systems operation, diagnosis & service C. Differential operation, diagnosis & service D. Transfer case & rear wheel drive (RWD) based 4WD Systems operation and diagnosis E. Front wheel drive (FWD) based All-Wheel Drive (AWD) Systems Diagnosis & Service **VII. Brakes (5.5 hours, lecture)** A. Brake types, theory & operations B. Brake diagnosis & service C. Advanced brake system theory, operation & diagnosis D. Advanced driver assistance systems E. Collision avoidance & driver support **VIII. Steering and Suspension (5.5 hours, lecture)** A. Theory & operation B. Tools & testing C. Alignment D. Tire essentials, inspection & maintenance E. Tire pressure monitor systems (TPMS) F. Tire & wheel vibration analysis
Total Lecture Hours:	45
Total Laboratory Hours:	0
Total Hours:	45
Primary Method of Evaluation:	2) Problem solving demonstrations (computational or non-computational)
Typical Assignment Using Primary Method of Evaluation:	Complete various web-based training associated with the automotive course being completed by the student to be assigned by participating manufacturer's representative and reviewed by the instructor.

Critical Thinking Assignment 1:	Document the benefits of having manufactures training by visiting manufactures service center and meeting with designated representatives to discuss apprenticeships and training requirements needed for successful employment. Document this through a report and submitted to the instructor to be evaluated by a rubric.
Critical Thinking Assignment 2:	Gather information on the requirements needed to complete the manufactures training program being sought and write a one-page summary on how these requirements lead to employment. Form an action plan and submit to the instructor for review.
Other Evaluation Methods:	Class Performance, Completion, Homework Problems, Matching Items, Multiple Choice, Objective Exam, Performance Exams, Quizzes, Term or Other Papers, True/False, Written Homework
If Other:	
Instructional Methods:	Demonstration, Field trips, Group Activities, Guest Speakers, Lecture, Discussion, Multimedia presentations, Role play/simulation
If other:	Role play/simulation
Work Outside of Class:	Answer questions, Observation of or participation in an activity related to course content (such as theatre event, museum, concert, debate, meeting), Problem solving activity, Required reading, Skill practice, Study, Written work (such as essay/composition/report/analysis/research)
If Other:	
Up-To-Date Representative Textbooks:	
Alternative Textbooks:	Access to Manufactures LMS
Required Supplementary Readings:	
Other Required Materials:	
Requisite	
Category	
Requisite course:	
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	
Requisite Skill:	
Requisite Skill and Matching skill(s): Bold the requisite skill(s). if applicable	
Requisite course:	Automotive Technology 14 or Automotive Technology 16 or Automotive Technology 34 or Automotive Technology 35 or Automotive Technology 43

Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	**Evaluate and diagnose various brake, suspension, driveline, transmission, and engine mechanical systems faults and make appropriate repairs.** ATEC 14- Diagnose and repair drum, disc, and ABS system functions. ATEC 16 - Inspect, test and evaluate suspension systems. ATEC 34 - The student must be able to diagnose various faults in automatic transmission and transaxle. ATEC 35 - Diagnose and repair manual transmission and clutch malfunctions. ATEC 43 - Evaluate an engine condition in accordance with manufacturer's specifications.
Requisite Skill:	
Requisite Skill and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s). if applicable	
Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Edward Matykiewicz
Date:	11/15/21
Original Board Approval Date:	01/18/2021