

College: A Saddleback College  
Division/School: TS Advanced Technology and Applied Science  
Department:  
Program:  
Subject: AABENC Adult Education - Adult Basic Education

O F F I C I A L C O U R S E O U T L I N E

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HISTORY AND STATUS

Course Status: L Launched  
Course Originator: Clifford Meyer

Technical Change Date:  
Technical Change Comment:

Comments:

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BRIEF DESCRIPTION

Short Title: TIA ATS-TPMS  
Full Title: BASIC AUTOMOTIVE TIRE SERVICE (ATS)&TIRE PRESSURE MONITORING

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BRIEF DESCRIPTION

Catalog Description:

Basic Automotive Tire Service (ATS) is a TIA 200-level minimum skills training and certificate program that outlines and explains the guidelines for servicing passenger and light truck tire and wheel assemblies. It includes the step-by-step procedures for: lifting the vehicle; removing the assembly; demounting, mounting and inflating; balancing; tire repair; and wheel installation. Basic ATS places special emphasis on the relationship between torque and clamping force so technicians have a thorough understanding of the necessary steps to ensure wheel retention on steel and aluminum wheels. Advanced Tire Pressure Monitoring Systems (TPMS) is a 250-level TIA program that focuses on the manufacturer-specific requirements for the most popular domestic and import vehicle/sensor manufacturers.

Prerequisite:

None

Enrollment Limitation:

None

Corequisite:

None

Recommended Preparation:

AUTO 100

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COURSE FUNCTIONS

Course Prior to:

Course Classification: I Career Technical Education

SC/IVC GE Code:

CSU GE Code: TR Does not fit CSU GE Pattern,transferabl

IGETC GE Code:

UC Transferable Course:

Comparable SC/IVC:

Comparable CSU:

Comparable UC:

Comparable CCC Baccalaureate:

TOP Code: 0948.00 Automotive Technology

SAM Code: B Advanced Occupational

CAN Number:

CID Number:

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COURSE OPTIONS

Grading Option: GR Letter Grade or Pass/No Pass

Open Entry: N No

Fixed, Optional or Variable Units: F Fixed Units

Repeatability Status: N No

Repeatability Model:

Repeatability Limit: 0

Cross-Listed Courses: NONE

Cross-Listed Parent: No

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COURSE VALUES

Method of Instruction:	L-L	Lecture/Lab Combination	
Maximum Enrollment:	25	Maximum WSCH:	100
Average Enrollment:	25	Average WSCH:	100

	Lecture	Lab	Learn Ctr	Total
WFCH	1.00	3.00	0.00	4.00
TFCH	16.60	49.80	0.00	66.40
TSCH	16.60	49.80	0.00	66.40
LHE	1.00	2.50	0.00	3.50
FTEF	6.67	16.67	0.00	23.34
UNITS	1.00	1.00	0.00	2.00

Schedule Description:

Basic Automotive Tire Service & Advanced Tire Pressure Monitoring System course covering all necessary diagnostics, service & repair of late model vehicle tire, wheel, TPMS systems.

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COURSE CONTENT  
(Topics Covered)

**Lecture Topics:**

- I. Overview of Certified Automotive Tire Service Program
- II. Introduction
  - A. Safety procedures
  - B. SP2 safety program
- III. Tires
- IV. Wheels and fasteners
- V. Raising the vehicle
- VI. Tire and wheel assembly
- VII. Torque and clamping force
- VIII. RIST overview
  - IX. Demounting, mounting and inflation
  - X. Balance and wheel run-out
  - XI. Puncture repair
- XII. Tire condition analysis
- XIII. Tire Pressure Monitoring System, TPMS Identification
- XIV. TPMS service requirements
  - XV. TPMS relearn procedures
  - XVI. TPMS diagnostics

**Lab/Learning Center Content:**

- I. Evaluate personal safety, PPE, personal protective equipment and general shop safety
- II. Investigate wheel and tire design
- III. Investigate lifting a vehicle with an above-ground lift and in-ground lift
- IV. Demonstrate removal and installation of a tire-wheel assembly
  - V. Investigate the methods to demount, mount and inflate a tire-wheel assembly
- VI. Address the principles of balance and run-out using pin-plates to secure the assembly to the wheel balancer
- VII. Perform a tire puncture repair following recommended industry guidelines
- VIII. Use images from the Passenger and Light Truck Tire Condition Manual to show signs of common problems that may require removal from service
- IX. Investigate the different types of Tire Pressure Monitor Systems, TPMS currently in use and how they can be identified
  - X. Perform a TPMS relearn for the most popular domestic and foreign vehicles
- XI. Diagnose and complete the necessary steps to correct a malfunction using industry standard scan tools including the replacement of a sensor on popular Asian model vehicles

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COURSE CONTENT  
(Learning Objectives)

Students participating in this class will:

1. Evaluate tire and wheel construction, nomenclature, sizing, application, and replace guidelines following Tire Industry Association standards
2. Demonstrate the use of an above-ground lift and an in-ground lift following the Lift Institute procedures
3. Demonstrate the removal and installation of a tire-wheel assembly on a vehicle following Tire Industry Association procedures
4. Investigate the correct procedures covering step-by-step procedures for demounting, mounting and inflating tires on rims with valve stems and band-mounted sensors
5. Address the basic principles of balance and run-out including the use of pin-plates to secure the wheel assembly to the balancer
6. Cover the industry guidelines for puncture repairs in passenger and light truck tires as well as the step-by-step procedures for installing one-piece and two-piece repair systems
7. Use images from the Passenger and Light Truck Tire Condition Manual to show technicians the signs of common problems that may require removal from service
8. Explain the different types of Tire Pressure Monitoring Systems (TPMS) and how they can be identified
9. Cover the industry procedures for Tire Pressure Monitor System (TPMS) relearn procedures
10. Discover the necessary steps to correct a malfunction with common industry standard scan tools including the replacement of a TPMS sensor on popular Asian model vehicles

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COURSE CONTENT  
(Student Learning Outcomes)

Students completing this course satisfactorily will be able to:

1. diagnose and replace a TPMS sensor.
2. balance a wheel and tire assembly to industry standards.
3. explain in detail the correct procedure to repair a flat tire following current industry standards.
4. define the size, load index, and speed rating of a passenger or light truck vehicle.
5. pass the TIA Tire Industry Association final exam with 70% accuracy

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COURSE CONTENT  
(Methods of Evaluation)

Evaluation of the student will be based upon the following items:

1. Writing Assignments
  - short answers
  - term or other paper(s)
  - laboratory reports
2. Problem Solving Demonstrations

- exams
- quizzes
- homework problems
- other (specify)

- a. student will demonstrate to the instructor the proper procedures for each lab section

3. Skill Demonstrations

- class performance(s)
- performance (exam)

4. Examinations

- multiple choice, true/false
- matching items
- completion

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COURSE CONTENT  
(In and Out-of-Class Assignments)

1. Typical Reading Assignments:
  1. Tire Industry Association (TIA) manual
  2. Technical reference manuals
  3. Use of computer-based information systems for specifications
2. Typical Writing Assignments:
  1. Recording of specifications for repair procedures
  2. Lab sheet work orders
3. Typical Oral Assignments:

Class discussion
4. Typical Other Assignments:

Practical work experience in the lab demonstrating the lab objectives

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COURSE CONTENT  
(Other Requirements)

Textbooks / Supplies:

Tire Industry Association, Level 1 TIA Certification Textbook, 1st Ed. TIA Tire Industry Association. 2017

Material Fees:                      \$ 0.00                      Transaction Code:



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VALIDATION  
(Corequisite, Limitation on Enrollment,  
Prerequisite and Recommended Preparation)

Recommended Preparation:

AUTO 100

- I. Identify and define the major components of the automotive body, chassis and power train.
- II. Perform a comprehensive safety check of their automobile.
- III. Design a preventive maintenance guide and record keeping system for an automobile.
- IV. Demonstrate proper and safe usage of tools and equipment while working in the lab.
- V. Solve minor repair problems and service operations on an automobile.