

**PALOMAR COLLEGE**  
**COURSE OUTLINE OF RECORD FOR**  
**DEGREE CREDIT COURSE**

X Transfer Course X A.A. Degree applicable course  
(check all that apply)

**COURSE NUMBER AND TITLE:** AT 115 Automotive Carburetion and Fuel Systems

**UNIT VALUE:** 3

**MINIMUM NUMBER OF SEMESTER HOURS:** 80

**BASIC SKILLS REQUIREMENTS:** Appropriate language and computational skills

**ENTRANCE REQUIREMENTS**

**PREREQUISITE:** None

**COREQUISITE:** None

**RECOMMENDED PREPARATION:** None

**SCOPE OF COURSE:**

The principles, technical knowledge, and work experience in the field of carburetion. Specific topics include single, dual, and four barrel carburetors; fuel injection; fuel supply systems; and combustion evaluation instruments.

**SPECIFIC COURSE OBJECTIVES:**

The students will:

1. Apply repair principles of current carburetion and electronic fuel injection systems.
2. Anticipate and pose problems in the operation of various diagnostic machines, interpret, and analyze data.
3. Identify and describe the function of every part in modern carburetors.
4. Compare throttle-body and port fuel injection systems.
5. Apply principles of shop safety.

**CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:**

- I. Basic Fuel System
  - A. Parts
  - B. Function

- II. Fuel Supply System
  - A. Tank and Filters
  - B. Pump
  - C. Lines and Fittings
- III. Automotive Fuel
  - A. Types and Blends
  - B. Octane
  - C. Engine Requirements
- IV. Rochester Carburetors
  - A. Operation
  - B. Service
- V. Holley Carburetors
  - A. Operation
  - B. Service
- VI. Diagnostic Equipment
  - A. Dynamometer
  - B. Carburetor Flow Bench
  - C. Infrared Gas Analyzer
  - D. Volt-Ohm Meter / Volt -Ohm
  - E. Computer Scanner
- VII. Fuel Injection
  - A. GM Throttle Body
    - 1. Operation
    - 2. Service
  - B. GM Port Injection
    - 1. Operation
    - 2. Service
- VIII. Super Charging
  - A. Turbo Charging
  - B. Roots Type

**REQUIRED READING:**

Chek-Chart. Fuel Systems and Emission Controls. New York: Harper and Row, 1988.

**SUGGESTED READING:**

Automotive manuals and trade journals as assigned by instructor.

**REQUIRED WRITING:**

Students will complete ten laboratory reports each consisting of at least two pages.

**OUTSIDE ASSIGNMENTS:**

**Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short-term classes.**

Homework assignments from text and other selected reading. Assignments will require about four hours per week to complete.

**INSTRUCTIONAL METHODOLOGY:**

**Check all that apply:**

- lecture
- laboratory
- lecture-laboratory combination
- directed study

**DISTANCE LEARNING:**

**This course may be offered as a distance learning course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.**

Yes  No

**If yes, check all that apply:**

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
- Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
- Two-Way Video Conferencing (Two-way interactive video and audio)
- One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
- Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

**GRADING POLICY AND STANDARDS (include methods of determining whether the stated objectives have been met by students):**

- 25% = Written Exams
- 25% = Bi-weekly exams
- 10% = Written diagnostic reports
- 25% = Laboratory worksheets
- 15% = Final Exam

**IS COURSE REPEATABLE FOR REASON (S) OTHER THAN DEFICIENT GRADE?**

Yes  No  Number of times course may be taken for credit:

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable:

SIGNATURES ON FILE