

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

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

COURSE NUMBER AND TITLE: AT 110 Automotive Tune-up and Engine Analysis

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 use of tune-up testing and diagnostic equipment; the study of conventional and electronic ignition systems; compression, cylinder, cylinder balance, and dynamometer testing.

SPECIFIC COURSE OBJECTIVES:

The student will be able to:

1. Apply principles of repair to modern automotive ignition and computer control systems.
2. Anticipate and solve novel problems in order to operate various diagnostic machines.
3. Interpret and analyze data.
4. Justify corrective action.
5. Apply principles of shop safety.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Batteries
 - A. Construction
 - B. Operation
 - C. Testing
 - 1. Hydrometer
 - 2. Load Test
 - D. Servicing
- II. Ignition Systems
 - A. Breaker Point Type
 - 1. Operation
 - 2. Testing & Troubleshooting
 - 3. Servicing
 - B. Electronic Type
 - 1. Operation
 - 2. Testing
 - 3. Servicing
 - C. Distributor less Type
 - 1. Operation
 - 2. Testing
 - 3. Servicing
 - D. Coll Over Plug Type
 - 1. Operation
 - 2. Testing
 - 3. Servicing
- III. Computer Control Systems
 - A. Computer Operation
 - B. Sensor Operation
 - C. Actuator Operation
 - D. System Testing
 - 1. Use of Volt –Ohm Meter
 - 2. Use of OTC Scanner
 - 3. Use of IBM Computer Interface
 - 4. Use of Brake-Out Box
 - E. Drivability Diagnosis
- IV. Principles of Shop Safety

REQUIRED READING:

Check-Chart. Automotive Tune-up and Electronic Systems. 3rd Edition, 1990. New York: Harper and Row.

SUGGESTED READING:

Automotive manuals and trade journals as assigned by instructor.

REQUIRED WRITING:

Diagnostic test reports, specification sheets, laboratory activity (approximately 2 pages each week) And assigned research report (approximately 3 pages.) The student may spend 64 hours in this activity.

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.

Reading assignments from the text. As well as written reviews of each 16 chapters (approximately 16 pages total).

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

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

Lecture to explain and illustrate the construction and function of various ignition and computer controlled components. Use of visual aides, mock-ups, cut-aways, and live operating units to demonstrate component diagnosis and service. Extensive use of chalkboard, videotapes, and live demonstration is employed. Hands-on laboratory reinforces the lecture material.

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% = Exams
- 20% = Written Reports
- 40% = Laboratory
- 15% = Final Exam

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

Yes ____ No x 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:

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SIGNATURES ON FILE