

SAN DIEGO COMMUNITY COLLEGE DISTRICT
CONTINUING EDUCATION
COURSE OUTLINE

SECTION I

SUBJECT AREA AND COURSE NUMBER

AUTO 420

COURSE TITLE

AUTOMOTIVE SERVICES

ALTERNATE TITLE(S)

AUTOMOTIVE SERVICES-DIESEL;
AUTOMOTIVE SERVICES-GAS
ENGINE; TUNE YOUR OWN CAR

TYPE COURSE

FEE

CATALOG COURSE DESCRIPTION

Designed to offer a general overview of the major systems of the automobile. Includes preventive maintenance techniques, consumer information, minor tune-ups using electronic equipment, brake inspection and repair and lubrication. (FT)

Students who successfully complete the course will be able to perform minor tune-ups and general preventive maintenance on their own cars.

LECTURE HOURS

1 hour per week
(for 9 weeks)

LABORATORY HOURS

2 hours per week

ADVISORY

NONE

RECOMMENDED SKILL LEVEL

Ability to read English at the 8th grade level, knowledge of general math, ability to communicate orally in English.

INSTITUTIONAL STUDENT LEARNING OUTCOMES

1. Social Responsibility
SDCE students demonstrate interpersonal skills by learning and working cooperatively in a diverse environment.
2. Effective Communication
SDCE students demonstrate effective communication skills.

INSTITUTIONAL STUDENT LEARNING OUTCOMES (CONTINUED)

3. Critical Thinking
SDCE students critically process information, make decisions, and solve problems independently or cooperatively.
4. Personal and Professional Development
SDCE students pursue short term and life-long learning goals, mastering necessary skills and using resource management and self-advocacy skills to cope with changing situations in their lives.

COURSE GOALS

COURSE OBJECTIVES

Students will show, orally, in writing, or through demonstration that they are able to:

1. Use auto repair vocabulary as specified by the instructor.
2. Do simple "trouble shooting" to the satisfaction of the instructor.
3. Do simple maintenance to the satisfaction of the instructor.
4. Perform tune-ups on their own automobiles to the satisfaction of the instructor.

SECTION II

COURSE CONTENT AND SCOPE

1. Introduction
 - 1.1. Course content and outline
 - 1.2. Fundamentals of the gasoline engine
2. Tune-Up
 - 2.1. Why a tune-up?
 - 2.2. What is a tune-up?
 - 2.3. Testing areas of a tune-up
 - 2.4. Testing essentials for a tune-up
 - 2.5. Where to get a tune-up?
 - 2.6. Tools necessary to do a tune-up
 - 2.7. Review of four cycles
 - 2.8. Types of compression testing
3. Battery
 - 3.1. Function of the battery
 - 3.2. How the battery produces current
 - 3.3. Ratings and servicing a battery
 - 3.4. Methods of testing a battery
 - 3.5. Cleaning the battery
4. Ignition System
 - 4.1. Function of the ignition
 - 4.2. How the ignition system produces high voltage to ignite air/fuel mixture
 - 4.3. Sparkplugs

COURSE CONTENT AND SCOPE (CONTINUED)

- 4.4. Electronic ignitions
- 4.5. Methods of altering ignition timing
- 5. Fuel System
 - 5.1. Function of the fuel system
 - 5.2. Carburetor circuits
 - 5.3. How the fuel pump operates and how to test on the road
- 6. Emission Controls
 - 6.1. Crankcase emissions
 - 6.2. Exhaust emissions
 - 6.3. Vapor recovery systems
- 7. Starting System
 - 7.1. Function of the starting motor and solenoid
 - 7.2. Starting motor circuit tests
 - 7.3. Trouble shooting the starting system problems
- 8. Brake System
 - 8.1. History of brakes
 - 8.2. Brake inspection
 - 8.3. Overhauling Brake Systems
 - 8.4. Trouble shooting common brake complaints
- 9. Cooling System
 - 9.1. Function of the cooling system
 - 9.2. Types of cooling systems
 - 9.3. Coolants and antifreeze
 - 9.4. Trouble shooting cooling system complaints
- 10. Lubrication
 - 10.1. Function of the lubrication system
 - 10.2. What is a lube job?
 - 10.3. When to change oil and oil filter
 - 10.4. Grading of oils
 - 10.5. Pros and cons of synthetic oil
 - 10.6. Pros and cons of reclaimed oil
- 11. Tires
 - 11.1. Function of tires
 - 11.2. Tire construction
 - 11.3. New tires vs. recaps
 - 11.4. Mixing of tires
 - 11.5. Maintenance of tires
 - 11.6. Balancing methods
 - 11.7. Repairing tires
 - 11.8. Trouble shooting tire wear

APPROPRIATE READINGS

NONE

AUTOMOTIVE SERVICES
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WRITING ASSIGNMENTS

NONE

OUTSIDE ASSIGNMENTS

NONE

APPROPRIATE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING

NONE

EVALUATION

Completion of individualized projects, class participation, oral quizzes, written tests, performance tests, attendance, and punctuality.

METHOD OF INSTRUCTION

Lecture, demonstration, and experimental learning. Audio-visual presentations.

TEXTS AND SUPPLIES

Texts:

Automotive Mechanics, Wm. Crouse, 8th edition, McGraw-Hill Inc.
Automotive Tune-up Principles and Procedures, Ignition Manufacturer Institute
Fundamentals of the Gasoline Engine, Ford Marketing Corp.

Marketable description:

Designed to offer a general overview of the major systems of the automobile. Includes preventive maintenance techniques, consumer information, minor tune-ups using electronic equipment, brake inspection and repair and lubrication.

PREPARED BY Raymond Ramirez DATE July, 1982

REVISED BY Instructional Services, SLOs added DATE March 8, 2017

Instructors must meet all requirements stated in Policy 3100 (Student Rights, Responsibilities and Administrative Due Process), and the Attendance Policy set forth in the Continuing Education Catalog.

REFERENCES:

San Diego Community College District Policy 3100
California Community Colleges, Title 5, Section 55002
Continuing Education Catalog