



Broward Community College

Course Outline

LAST REVIEW: 2003-2004

NEXT REVIEW: 2008-2009

STATUS: A

COURSE TITLE: Introduction to Automotive Technology

COMMON COURSE NUMBER: AER1081C

CREDIT HOURS: 4

CONTACT HOUR BREAKDOWN

(per 16 week term)

CLOCK HOURS:

Lecture: 48 Lab: 48

Clinic: Other: 39

PREREQUISITE(S):

COREQUISITE(S):

PRE/COREQUISITE(S):

<p>COURSE DESCRIPTION: A course designed to introduce the field of automotive service. Topics include auto service careers, shop safety, fuels, lubricants, fasteners, tools, and equipment. An introduction to the major automobile systems and instruction in minor service procedures are provided.</p>

UNIT TITLES:

1. Introduction to Automotive Technology
2. The Automotive Shop
3. Automotive Systems
4. Automotive Classifications
5. Minor Service Procedures

I. Course Overview:

Upon successful completion of this course, the students should be able to demonstrate an understanding of the automobile service field, the automotive shop, shop safety, tools, fasteners, fuels, lubricants, the major automobile systems, and minor service procedures.

II. Units:

Unit 1. Introduction to Automotive Technology

General Outcome:

1.0 The students should be able to discuss the automotive career field.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 1.1 Describe the automotive technology degree program.
- 1.2 Identify and define career opportunities in the automobile service industry.
- 1.3 Utilize flat-rate manuals, service manuals, and service bulletins.

Unit 2. The Automotive Shop

General Outcome:

2.0 The students should be able to discuss the automotive shop, shop safety, tools, fasteners, fuels, lubricants gaskets, seals, bearings, belts, lines and fittings.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 2.1 Describe typical automotive shop safety hazards and identify methods to prevent and deal with accidents.
- 2.2 Identify and describe the purpose of typical automotive shop tools and equipment, fasteners, lines, fittings, and belts.
- 2.3 Identify and describe typical automotive lubricants and fuels.
- 2.4 Identify and describe typical automotive lubricants and fuels.
- 2.5 Identify and describe typical automotive gaskets, seals, bearings, belts and hoses.
- 2.6 Identify and describe Material Safety Data Sheets (MSDS).

Unit 3. Automotive Systems

General Outcome:

3.0 The students should be able to describe the major automobile systems and the manner in which they interact.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 3.1 Identify the components of the typical automobile engine and describe their operation.
- 3.2 Identify the components of the typical automotive suspension and steering system and describe their operation.
- 3.3 Identify the components of the typical automotive brake system and describe their operation.
- 3.4 Identify the components of the typical automotive transmission and drive train and describe their operation.
- 3.5 Identify the operation of the typical automotive air conditioning and heating system and describe their operation.
- 3.6 Identify the components of the typical automotive electrical and electronic system and describe their operation.
- 3.7 Identify and describe the operation of supplemental restraint systems, including air bags.
- 3.8 Identify and describe hybrid, CNG and fuel cell technology in current and prototype vehicles.

Unit 4. Automotive Classifications

General Outcome:

4.0 The students should be able to classify automobiles.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 4.1 Identify automobiles by front, rear, or mid-engine location.
- 4.2 Identify automobiles by front, rear, or four-wheel drive systems.
- 4.3 Identify automobiles by passenger capacity and purpose.

Unit 5. Minor Service Procedures

General Outcome:

5.0 The students should be able to perform minor service procedures.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 5.1 Perform a complete automobile safety check.
- 5.2 Identify, check, and replace all fluids.
- 5.3 Perform a complete chassis lubrication according to the manufacturer's recommendations.
- 5.4 Check vehicle electrical system. Includes load test battery, check charging/starting system and perform parasitic drain check on electrical system.
- 5.5 Perform tire repairs and wheel balancing.
- 5.6 Inspect, diagnose, and repair and replace faulty exhaust pipes, mufflers, resonators, catalytic converters, tail pipes, clamps, and hangers.
- 5.7 Install radios, speakers, wheel covers, and trim; perform pre-delivery inspection and cleaning; and complete other typical new automobile preparation procedures.
- 5.8 Trouble shoot and repair and replace weather stripping, seals, power windows, locks, mirrors, seats, tailgates, and windshield wiper mechanisms.
- 5.9 Identify and disable supplemental inflatable restraints systems when indicated in a repair procedure.