Texas CTE

# Automotive Basics (One Credit) (2015)

**Knowledge and skills.** D

**1 The student demonstrates appropriate personal and communication skills. The student is expected to:** D.1

- A describe, demonstrate, and apply ethical and legal responsibilities for appropriate workplace conduct; D.1.A
- B demonstrate proper etiquette and behavior; D.1.B
- C demonstrate appropriate personal appearance and hygiene; D.1.C
- D demonstrate effective written and oral communication skills and employ effective listening skills; D.1.D
- E demonstrate advanced technical writing and preparation skills; and D.1.E
- F demonstrate effective speaking skills through prepared and extemporaneous oral presentations. D.1.F

**2 The student demonstrates academic skills related to the requirements of automotive technology. The student is expected to:** D.2

- A demonstrate effective oral communication skills with individuals from various cultures such as fellow students, coworkers, and customers; D.2.A
- B demonstrate effective written communication skills, including documenting on a repair order the customer concern/complaint, root cause of the failure, and corrective action to complete the repair; and D.2.B
- C demonstrate mathematical skills in performing addition, subtraction, multiplication, division, and measurements using decimals and fractions in the metric and U.S. standard systems as appropriate. D.2.C

**3 The student understands the technical knowledge and skills of basic automotive systems. The student is expected to:** D.3

- A describe the eight major vehicle systems; D.3.A
- B locate, read, and interpret vehicle maintenance and service information; and D.3.B
- C describe the basic and emerging vehicle power systems. D.3.C

**4 The student knows the functions and applications of the tools, equipment, technologies, and materials used in automotive services. The student is expected to:** D.4

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A demonstrate the proper way to safely use hand and power tools and equipment commonly employed in the maintenance and repair of vehicles; D.4.A

B discuss the proper handling and disposal of environmentally hazardous materials used in servicing vehicles; D.4.B

C identify diagnostic tools and equipment; and D.4.C

D identify hand and shop tools and describe their proper usage. D.4.D

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**5 The student applies technical knowledge and skills in simulated or actual work situations. The student is expected to:** D.5

A demonstrate the procedures for ordering and locating parts; D.5.A

B demonstrate an understanding of the operation theory of internal combustion engines; D.5.B

C identify brake system components, including drum, disc, power assist, and anti-lock braking system (ABS D.5.C

D demonstrate an understanding of basic concepts related to hydraulic brakes systems, including Pascal's Theory of Hydraulics; D.5.D

E demonstrate an understanding of basic concepts related to electrical and electronic systems such as Ohm's law, voltage drop, resistance, amperage, voltage, and wiring diagram symbols; D.5.E

F identify air-conditioning, heating, and accessory system components; D.5.F

G inspect and identify chassis and power train components and systems; D.5.G

H identify cooling and lubrication system components; D.5.H

I identify steering and suspension components, including power steering; D.5.I

J identify and interpret tire sidewall data information such as Department of Transportation (DOT D.5.J

K compare the preventative maintenance schedules for a variety of vehicles based on their use; D.5.K

L perform a preventative maintenance inspection; D.5.L

M explain and perform a "jump-start" of a vehicle using jumper cables and a booster battery or an auxiliary power supply according to manufacturer recommended procedures; and D.5.M

N perform regular audits and inspections to maintain compliance with safety, health, and environmental regulations. D.5.N