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**1. Automotive Technology I
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correlated to

**North Carolina
Trade and Industrial Education
Course Blueprint for 7511
Automotive Technology I**

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COURSE BLUEPRINT FOR 7511 – AUTOMOTIVE TECHNOLOGY I

OBJECTIVES	PAGE REFERENCES
A LEADERSHIP DEVELOPMENT	
001. Demonstrate speaking, career development, and business meeting skills.	
001.01 Demonstrate basic techniques of parliamentary procedure.	The opportunity to address this objective is available. See the following: SE: HB13–HB15, HB16–HB17 IRG: 85–88, 225–226, 431–432
001.02 Demonstrate steps for processing a motion and the methods of voting.	The opportunity to address this objective is available. See the following: SE: HB13–HB15, HB16–HB17 IRG: 85–88, 225–226, 431–432
01.03 Establish short and long-term goals.	SE: HB4–HB15, HB16–HB17 IRG: 225–226, 431–432
01.04 Identify career goals and review career development plan.	SE: HB8–HB15, HB16–HB17 IRG: 89–92, 93–98, 225–226, 431–432
B ORIENTATION TO AUTOMOTIVE TECHNOLOGY	
002. Identify facts concerning the occupational outlook for the automotive industry and its impact on the economy.	
002.01 Identify facts concerning the occupational opportunities of the automotive industry.	SE: HB8–HB15, HB16–HB17 IRG: 89–92, 93–98, 225–226, 431–432
002.02 Describe the history of the automobile and its impact on the economy.	SE: HB3–HB4, HB8, HB16–HB17 IRG: 225–226, 431–432

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OBJECTIVES	PAGE REFERENCES
002.03 Identify basic components and shop procedures.	SE: HB4–HB8, HB16–HB17 IRG: 225–226, 431–432
C SAFETY	
003. List rules for personal safety, shop safety, and rules for safe use of shop equipment and materials.	
003.01 Define accident, safety, first aid, OSHA, EPA, and safety color code.	SE: HB19–HB23, HB32–HB33 IRG: 165–170, 178, 183–190, 227–228
003.02 Identify rules for personal and general shop safety and complete a safety pledge form.	SE: HB19–HB23, HB24–HB26, HB32–HB33 IRG: 175–177, 227–228
003.03 Identify safety rules for hand tools, power tools, and lifting devices.	SE: HB27–HB31, HB32–HB33 IRG: 171–174, 227–228
003.04 Identify safety rules involving engines, batteries, and flammable liquids.	SE: HB20–HB21, HB32–HB33 IRG: 181–182, 227–228
003.05 Identify rules for handling and disposal of waste materials.	SE: HB20–HB21, HB32–HB33 IRG: 191–201, 227–228
003.06 Define classes of fires and methods used to extinguish them.	SE: HB21–HB23, HB32–HB33 IRG: 181–182, 227–228

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OBJECTIVES	PAGE REFERENCES
D HAND TOOLS	
004.00 Identify hand tools, general shop tools, and special tools for each major area of vehicle repair.	
004.01 Identify general shop and hand tools used in automotive repair.	SE: HB35–HB46, HB46–HB53, HB64–HB65 IRG: 229–230
004.02 Identify special purpose tools and equipment used in auto repair.	SE: HB54–HB63, HB64–HB65 IRG: 229–230
004.03 Describe procedures for proper care and maintenance of automotive tools and equipment.	SE: HB35–HB36, HB64–HB65 IRG: 229–230
E MEASURING	
005. Identify, describe, and use semi-precision and precision-measuring tools.	
005.01 Describe basic automotive measurements and identify the types of tools used for taking measurements.	SE: HB54–HB58, HB64–HB65 IRG: 229–230
005.02 Describe and demonstrate the use of semi-precision measuring tools.	SE: HB54–HB58, HB64–HB65 IRG: 229–230
005.03 Describe and demonstrate the use of precision measuring tools.	SE: HB54–HB58, HB64–HB65 IRG: 229–230

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OBJECTIVES	PAGE REFERENCES
F AUTOMOTIVE MAINTENANCE AND BASIC SERVICE	
006. Identify and describe common automotive maintenance problems and perform routine maintenance/servicing in the areas of safety, lubrication, air conditioning, suspension and steering, automatic transmissions and transaxles.	
006.01 Describe automotive lubricants and the problems resulting from lack of scheduled maintenance.	SE: HB62, BR71, EP14, EP16–EP17, SS28–SS29, SS42–SS43, SS75 IRG: 258–259, 282–284
006.02 Inspect, test, and repair/replace cooling system components, and check coolant levels.	SE: EP14–EP15, EP16–EP17, EP27–EP29, EP30–EP31 IRG: 260–261
006.03 Inspect and service air cleaners and filters utilizing proper techniques.	SE: EP13, EP57–EP59, EP68–EP69 IRG: 265–266
006.04 Inspect tires for abnormal tire patterns/pressure.	SE: SS52, SS67–SS69, SS80–SS81 IRG: 287–288
006.05 Service, charging and replacing a battery.	SE: EL27–EL43, EL44–EL45 IRG: 247–248
006.06 Perform vehicle safety inspection.	The opportunity to address this objective is available. See the following: SE: HB35–HB53, HB64–HB65 IRG: 229–230

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OBJECTIVES		PAGE REFERENCES	
006.07	Identify suspension parts and operation.	SE:	SS21–SS30, SS31–SS38, SS38–SS41, SS42–SS43
		IRG:	282–284
006.08	Inspect and service drive train.	SE:	EP19–EP24, EP25–EP26, EP30–EP31
		IRG:	260–262
G BRAKES			
007. Demonstrate brake fundamentals and concepts.			
007.01	Explain basic hydraulic theory.	SE:	BR15–BR18, BR30–BR31
		IRG:	233–234
007.02	Explain brake operation including ABS.	SE:	BR3–BR11, BR12–BR13, BR101–BR115, BR116–BR117
		IRG:	231–232, 243–244
007.03	Identify brake system components.	SE:	BR19–BR24, BR25–BR29, BR30–BR31
		IRG:	233–234
007.04	Demonstrate basic brake service.	SE:	BR33–BR49, BR50–BR51, BR53–BR71, BR72–BR73, BR75–BR83, BR84–BR85, BR87–BR97, BR98–BR99, BR101–BR115, BR116–BR117
		IRG:	235–236, 237–238, 239–240, 241–242, 243–244

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OBJECTIVES	PAGE REFERENCES
H ENGINE	
008. Theory and operation.	
008.01 Explain engine fundamentals.	SE: EP3, EP8–EP15, EP16–EP17 IRG: 258–259
008.02 Explain and i.d. parts and operation of short block.	SE: EP4–EP7, EP16–EP17, EP25 IRG: 258–259
008.03 Explain and i.d. parts of valve trains.	SE: EP10–EP11, EP16–EP17, EP25–EP26, EP30–EP31 IRG: 258–259
008.04 Explain basic lubrication system operation.	SE: EP14, EP16–EP17 IRG: 258–259
008.05 Explain basic cooling system operation.	SE: EP14–EP15, EP27–EP29, EP30–EP31 IRG: 260–261
C008.06 Explain basic fuel systems operation.	SE: EP71–EP74, EP75–EP77, EP78–EP89, EP90–EP91 IRG: 267–268
008.07 Explain basic ignition systems operation.	SE: EP93–EP104, EP105–EP107, EP108–EP109 IRG: 269–271

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OBJECTIVES		PAGE REFERENCES	
008.08	Explain basic exhaust system operation.	SE:	EP15, EP16–EP17, EP43–EP46, EP54–EP55
		IRG:	258–259, 263–264
008.09	Explain basic emission systems operation.	SE:	EP137–EP147, EP147–EP149, EP150–EP151
		IRG:	276–277
I ELECTIRCAL SYSTEMS			
009. Basic Electrical fundamentals and concepts.			
009.01	Demonstrate basic electrical theory and operation.	SE:	EL3–EL5, EL6–EL11, EL20–EL23, EL124–EL125
		IRG:	245–246
009.02	Demonstrate basic electrical measurement and measuring equipment.	SE:	EL11–EL20, EL20–EL23, EL24–EL25
		IRG:	245–246
009.03	Explain battery operation and service.	SE:	EL27–EL31, EL31–EL37, EL38–EL43, EL44–EL45
		IRG:	247–248
009.04	Explain starting system operation.	SE:	EP93–EP104, EP105–EP107, EP108–EP109
		IRG:	269–271
009.05	Explain charging system operation.	SE:	EL63–EL71, EL72–EL75, EL76–EL77, EL78–EL79, EL80–EL81
		IRG:	251–252

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OBJECTIVES		PAGE REFERENCES	
009.06	Identify and service lighting systems.	SE:	EL83–EL93, EL94–EL99, EL99–EL101, EL102–EL103
		IRG:	253–254
09.07 09.08	Demonstrate basic computer and scan tool knowledge.	SE:	EP111–EP114, EP115–EP121, EP122–EP123, EP125–EP127, EP128–EP133, EP134–EP135
		IRG:	272–273, 274–275

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