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**2. Automotive Technology II
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correlated to

**North Carolina
Trade and Industrial Education
Course Blueprint for 7512
Automotive Technology II**

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NORTH CAROLINA
TRADE AND INDUSTRIAL EDUCATION
COURSE BLUEPRINT FOR 7512 –AUTOMOTIVE TECHNOLOGY II**

OBJECTIVES	PAGE REFERENCES
A LEADERSHIP (Level 2)	
2A01. Demonstrate communication, problem solving, and team building skills.	
2A01.01 Demonstrate communication skills.	SE: ER11, ER21, ER104, ER136, HA20, MD20, MD84, MD105, MD108, MD125 IRG: 289–290, 291–293, 300–302, 305–306, 310–311, 343–345, 353–355, 356–357, 358–359
2A01.02 Demonstrate problem solving and team building skills.	SE: HB13–HB15, HB16–HB17 IRG: 225–226
B. SAFETY	
2A02. List rules for personal safety, shop safety, and rules for safe use of shop equipment and materials.	
2A02.01 Define accident, safety, first aid, OSHA, EPA, and safety color code.	SE: HB19–HB23, HB32–HB33 IRG: 165–170, 178, 183, 185, 227–228
2A02.02 Identify rules for personal and general shop safety and complete a safety pledge form.	SE: HB19–HB23, HB23–HB26, HB32–HB33 IRG: 165–169, 173–179, 227–228
2A02.03 Identify safety rules for hand tools, power tools, and lifting devices.	SE: HB27– HB31, HB32– HB33 IRG: 171–174, 227–228
2A02.04 Identify safety rules involving engines, batteries, and flammable liquids.	SE: HB21– HB23, HB32– HB343 IRG: 227–228

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OBJECTIVES	PAGE REFERENCES
2A02.05 Identify rules for handling and disposal of waste materials.	SE: HB20– HB21, HB32– HB33 IRG: 191–201, 227–228
2A02.06 Define classes of fires and methods used to extinguish them.	SE: HB21– HB23, HB32– HB33 IRG: 180–182, 227–228
C. HAND TOOLS	
2A03. Identify hand tools, general shop tools, and special tools for each major area of vehicle repair.	
2A03.01 Identify general tools.	SE: HB35– HB36, HB46– HB53, HB64– HB65 IRG: 229–330
2A03.02 Identify general shop and hand tools used in automotive repair.	SE: HB35– HB46, HB46– HB53, HB64– HB65 IRG: 229–330
2A03.03 Describe procedures for proper care and maintenance of automotive tools and equipment.	SE: HB35– HB36, HB64– HB65 IRG: 229–330
D. MEASURING	
2A04. Identify, describe, and use semi-precision and precision-measuring tools.	
2A04.01 Describe basic automotive measurements and identify the types of tools used for taking measurements.	SE: HB54– HB58, HB64– HB65 IRG: 229–330

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OBJECTIVES	PAGE REFERENCES
2A04.02 Demonstrate the use of semi-precision measuring tools.	SE: HB54– HB58, HB64– HB65 IRG: 229–330
2A04.03 Demonstrate the use of precision measuring tools.	SE: ER81– ER87, ER104– ER105 IRG: 300–302
E. HYDRAULIC SYSTEM DIAGNOSIS AND REPAIR	
2A05. Demonstrate how to diagnosis and repair hydraulic systems.	
2A05.01 Demonstrate how to adjust pedal height.	SE: MD15– MD23, MD24– MD25 IRG: 343–345
2A05.02 Diagnose, repair or replace master cylinder and bench bleed.	SE: MD12– MD14, MD24– MD 25 IRG: 343–345
2A05.03 Diagnose problems with hydraulic system.	SE: AT65– AT73, AT73– AT76, AT77– AT81, AT82– AT83 IRG: 333–334
2A05.04 Inspect and repair lines, fittings, and hoses.	SE: AT65– AT73, AT82– AT83 IRG: 333–334
2A05.05 Select and install brake fluids.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR8–BR10 IRG: 231–232

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OBJECTIVES	PAGE REFERENCES
2A05.06 Inspect, test and replace metering, proportioning, pressure differential, and combination valves.	SE: ER90– ER95, ER104– ER105, ER113– ER114, AT77– AT81, AT82– AT83 IRG: 300–302, 303–304, 333–334
2A05.07 Inspect, test, replace, and adjust height sensing proportioning valve.	SE: ER113– ER114 IRG: 303–304
2A05.08 Inspect, test, and replace components of brake warning light system.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: EL89–EL90, EL99-EL101 IRG: 253–254
2A05.09 Bleed and flush hydraulic system.	SE: ER30– ER32, ER42– ER43, MD12– MD13, MD24– MD25 IRG: 343–345
F. DRUM BRAKES	
2A06. Demonstrate how to diagnosis and repair drum brakes.	
2A06.01 Diagnose drum brake problems.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR38–BR43 IRG: 235–235

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OBJECTIVES	PAGE REFERENCES
2A06.02 Service and repair brake drums.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR44–BR49 IRG: 235–235
2A06.03 Machine brake drums.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR45 IRG: 235–235
2A06.04 Remove and reassemble brake shoes.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR46 IRG: 235–235
2A06.05 Remove and reinstall wheel cylinders.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR46–BR48 IRG: 235–235
2A06.06 Pre-adjust and install brake shoes.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR48–BR49 IRG: 235–235

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OBJECTIVES	PAGE REFERENCES
G. DISC BRAKES	
2A07. Demonstrate how to diagnosis and repair disc brakes.	
2A07.01 Diagnose disc brake problems and determine needed repairs.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR58–BR63 IRG: 237–238
2A07.02 Remove, inspect, and clean calipers.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR63–BR65 IRG: 237–238
2A07.03 Remove, inspect, and clean slides and hardware.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR64–BR65 IRG: 237–238
2A07.04 Disassemble, repair, and reassemble caliper assembly.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR65–BR67 IRG: 237–238

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OBJECTIVES	PAGE REFERENCES
2A07.05 Remove and replace caliper and pads.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR67–BR71 IRG: 237–238
2A07.06 Clean and inspect rotor.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR68–BR69 IRG: 237–238
2A07.07 Machine rotor.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR69–BR71 IRG: 237–238
2A07.08 Adjust calipers with integrated parking brake.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR92–BR97 IRG: 241–242
2A07.09 Fill master cylinder and replace wheel.	This objective is addressed in Glencoe/McGraw-Hill Automotive Excellence, Volume 1. See the following: SE: BR21–BR23 IRG: 233–234

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H. ELECTRICAL THEORY	
2A08. Demonstrate electrical fundamentals and concepts.	
2A08.01 Demonstrate electrical theory and operation.	SE: AT105– AT113, AT126– AT127 IRG: 338–339
2A08.02 Demonstrate ohm’s law in automotive circuits.	SE: MA115, HA126– HA 27 IRG: 324–325
I. SAFETY	
2A09. List rules for personal safety, shop safety, and rules for safe use of shop equipment and materials.	
2A09.01 Define accident, safety, first aid, OSHA, EPA, & safety color code.	SE: HB19– HB23, HB32– HB3 IRG: 165–170, 178, 183, 185, 227–228
2A09.02 Identify rules for personal and general shop safety.	SE: HB19– HB23, HB23– HB26, HB32– HB33 IRG: 165–169, 173–179, 227–228
2A09.03 Identify safety rules, fires, and electrical systems.	SE: HB21– HB23, HB32– HB33 IRG: 180–182, 227–228
J. TEST EQUIPMENT AND MEASUREMENT	
2A10. Demonstrate electrical test equipment and measurement.	
2A10.01 Demonstrate voltage, ampere tester (starting, charging analyzer).	SE: AT115– AT119, AT126– AT127 IRG: 338–339

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2A10.02 Demonstrate use of DMM.	The opportunity to address this objective is available. See the following: SE: AT115– AT119, AT126– AT127 IRG: 338–339
2A10.03 Demonstrate how to use a test light (including self powered) and proper use of a jumper wire.	The opportunity to address this objective is available. See the following: SE: HB45, HB48, HB64– HB65 IRG: 229–230
K. GENERAL ELECTRICAL DIAGNOSIS	
2A11. Diagnose the electrical system.	
2A11.01 Use wiring diagrams during diagnosis of electrical problems.	SE: AT105– AT112, AT113– AT115, AT116– AT119, AT120– AT125, AT126– AT127 IRG: 338–339
2A11.02 Check electrical circuits with a test light to determine needed repairs.	The opportunity to address this objective is available. See the following: SE: HB45, AT115– AT119, AT120– AT125, AT126– AT127 IRG: 338–339

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