

# VoCATS Course Blueprint

## Trade and Industrial Education

### *7513 Automotive Service Technology III*

*Public Schools of North Carolina  
State Board of Education • Department of Public Instruction  
Office of Curriculum and School Reform  
Secondary Education Division  
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*Raleigh, North Carolina  
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*Special thanks to the following educators who developed this blueprint.*

*Gordon Powell, Person County*

*This blueprint has been reviewed by business and industry representatives for technical content and appropriateness for the industry. Contact [Tandleducation@dpi.state.nc.us](mailto:Tandleducation@dpi.state.nc.us) for more information.*

## VoCATS Course Blueprint

A course blueprint is a document laying out the framework of the curriculum for a given course.

Shown on the blueprint are the units of instruction, the core competencies in each unit, and the specific objectives for each competency. The blueprint illustrates the recommended sequence of units and competencies and the cognitive and performance weight of the objective within the course.

The blueprint should be used by teachers to plan the course of work for the year, prepare daily lesson plans, construct instructionally valid interim assessments. Statewide assessments are aligned directly with the course blueprint.

For additional information about this blueprint, contact program area staff. For additional information about VoCATS, contact program area staff or VoCATS, Career-Technical Education, Secondary Education Division, North Carolina Department of Public Instruction, 6359 Mail Service Center, Raleigh, North Carolina 27699-5359, email: VoCATS@dpi.state.nc.us.

### Interpretation of Columns on VoCATS Course Blueprints

No.	Heading	Column information
1	Comp# Obj.#	Comp=Competency number (two digits); Obj.=Objective number (unique course identifier plus competency number and two-digit objective number).
2	Unit Titles/Competency and Objective Statements	Statements of unit titles, competencies per unit, and specific objectives per competency. Each competency statement or specific objective begins with an action verb and makes a complete sentence when combined with the stem "The learner will be able to. . ." (The stem appears once in Column 2.) Outcome behavior in each competency/objective statement is denoted by the verb plus its object.
3	Time Hrs	Space for teachers to calculate time to be spent on each objective based on the course blueprint, their individual school schedule, and analysis of students' previous knowledge on the topic.
4&5	<u>Course Weight</u>  Cognitive  Performance	Shows the relative importance of each objective, competency, and unit. Weight is broken down into two components: cognitive and performance. Add the cognitive and performance weights shown for an objective in columns 4 and 5 to determine its total course weight. Course weight is used to help determine the percentage of total class time that is spent on each objective. The breakdown in columns 4 and 5 indicates the relative amount of class time that should be devoted to cognitive and performance activities as part of the instruction and assessment of each objective. Objectives with performance weight should include performance activities as part of instruction and/or assessment.
6	Type Behavior	Classification of outcome behavior in competency and objective statements. (C=Cognitive; P=Performance)
7	Integrated Skill Area	Shows links to other academic areas. Integrated skills codes: A=Arts; E=English Language Arts; CD=Career Development; CS=Information/Computer Skills; H=Healthful Living; M=Math; SC=Science; SS=Social Studies.
8	Core Supp	Designation of the competencies and objectives as Core or Supplemental. Competencies and objectives designated "Core" must be included in the Annual Planning Calendar and are assessed on the statewide assessments..

*Career-Technical Education conducts all activities and procedures without regard to race, color, creed, national origin, gender, or disability. The responsibility to adhere to safety standards and best professional practices is the duty of the practitioners, teachers, students, and/or others who apply the contents of this document.*

**TRADE AND INDUSTRIAL EDUCATION**  
**COURSE BLUEPRINT for 7513 AUTOMOTIVE SERVICE TECHNOLOGY III**  
 Recommended hours of instruction: 270

Comp # Obj #	Unit Titles/Competency and Objective Statements (The Learner will be able to:)	NATEF	Course Weight		Type Behavior	Integrated Skill Area	Core Supp
			Cognitive 4	Performance 5			
1	2		4	5	6	7	8
	<b>Total Course Weight</b>		<b>100%</b>				
	<b>Total Cognitive and Performance Weights</b>		<b>5%</b>	<b>95%</b>			
<b>A</b>	<b>LEADERSHIP</b>			<b>2%</b>			
<b>3A01.00</b>	<b>Apply basic business meeting skills and goal setting.</b>					<b>CD/SS</b>	<b>Core</b>
3A01.01	<i>Execute basic business meeting skills.</i>			1%		SS	Core
3A01.02	<i>Implement a procedure for establishing personal educational and career goals.</i>			1%		CD	Core
<b>B</b>	<b>BRAKES</b>		<b>4%</b>	<b>24%</b>			
<b>3A02.00</b>	<b>Analyze system and apply repair procedures.</b>		<b>4%</b>	<b>3%</b>	<b>C3</b>	<b>M/SC</b>	<b>Core</b>
3A02.01	<i>Understand safety rules relevant to brake repair.</i>		1%		C2	M/SC	Core
3A02.02	<i>Understand the rules and tools appropriate for brake repair.</i>		3%		C2	M/SC	Core
3A02.03	<i>Apply methods for locating and using manufacturer's procedures for repairing height sensing proportioning valves, warning light systems and flush brake hydraulic systems.</i>	P2/3		2%	C3		Core
3A02.04	<i>Execute work orders.</i>	P1		1%	C3	E/M	Core
<b>3A03.00</b>	<b>Evaluate system conditions and apply correct repair procedures.</b>			<b>21%</b>	<b>C3</b>	<b>M/SC</b>	<b>Core</b>
3A03.01	<i>Critique brake drum condition and repair according to manufacturers recommendations.</i>	P1		4%	C3	M/SC	Core
3A03.02	<i>Execute procedure for wheel installation and adjustments.</i>	P1		3%	C3	M/SC	Core
3A03.03	<i>Implement manufacturer's procedures for repairing disc brake caliper, including integrated parking brakes, install wheel assembly and make final checks and adjustments</i>	P1/2		14%	C3	M/SC	Core
<b>C</b>	<b>MISCELLANEOUS REPAIRS</b>		<b>1%</b>	<b>20%</b>			
<b>3A04.00</b>	<b>Apply manufacturer's procedures to diagnosis and repair wheel bearings, parking brakes, and warning lamp systems.</b>			<b>9%</b>	<b>C3</b>	<b>M/SC</b>	<b>Core</b>
3A04.01	<i>Evaluate hydraulically assisted power brake system condition and master pushrod length</i>	P3		2%	C3	M/SC	Core
3A04.02	<i>Implement diagnosis and repair of park brake system.</i>	P2		3%	C3	M/SC	Core
3A04.03	<i>Execute manufacturer's procedures for removing and installing sealed wheel bearing assembly.</i>	P2		4%	C3	M/SC	Core

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			Cognitive 4	Performance 5			
1	2		4	5	6	7	8
<b>3A05.00</b>	<b>Evaluate antilock brake and traction control systems.</b>			<b>7%</b>	<b>C3</b>	<b>M/SC</b>	<b>Core</b>
3A05.01	Check antilock brake system (ABS) and traction control (TCS), electronic control(s) and components using self-diagnosis and/or recommended test equipment.	P1		4%	C3	M/SC	Core
3A0.5.02	Implement correct procedures to depressurize high-pressure components of the antilock brake system (ABS) and to bleed circuits.	P3		3%	C3	M/SC	Core
<b>3A06.00</b>	<b>Apply manufacturer's ABS repair procedures.</b>		<b>1%</b>	<b>4%</b>	<b>C3</b>	<b>M/SC</b>	<b>Core</b>
3A06.01	Implement correct manufacturer's procedures and equipment to remove and install antilock brake system (ABS) electrical/electronic and hydraulic components.	P3		4%	C3	M/SC	Core
3A06.02	Understand antilock brake system (ABS) braking concerns caused by vehicle modifications.	P3	1%		C2	M/SC	Core
<b>D</b>	<b>ELECTRICAL/ELECTRONICS SYSTEMS</b> For every task in Electrical/Electronics Systems, the following safety requirement must be strictly enforced. Comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.			<b>25%</b>			
<b>3A07.00</b>	<b>Apply rules and procedures to repair electrical/electronic systems.</b>			<b>14%</b>	<b>C3</b>	<b>H/M/SC</b>	<b>Core</b>
3A07.01	Execute safety rules relevant to electrical systems.			1%	C3	H/M/SC	Core
3A07.02	Execute repair of electrical circuits and components using wiring diagrams.	P-1		6%	C3	M/SC	Core
3A07.03	Implement correct procedure to repair shorts, grounds, opens, resistance and key-off battery drain problems in electrical/electronic circuits.	P-1		7%	C3	M/SC	Core
<b>3A08.00</b>	<b>Apply correct manufacturer's repair procedure for electrical system repairs.</b>			<b>11%</b>	<b>C3</b>	<b>M/SC</b>	<b>Core</b>
3A08.01	Execute proper repair indicated by a starter circuit voltage drop test according to manufacturer's directions.	P1/2		5%	C3	M/SC	Core
3A08.02	Implement manufacturer's procedure to diagnose and repair charging system components.	P1/2		4%	C3	M/SC	Core

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3A08.03	<i>Implement necessary repair procedure as result of charging circuit voltage drop test.</i>	P1		2%	C3	M/SC	Core
<b>E</b>	<b>ADVANCED ELECTRICAL/ELECTRONICS</b>			<b>24%</b>			
<b>3A09.00</b>	<b>Apply procedures for a complete diagnosis of lighting and warning systems.</b>			<b>15%</b>	<b>C3</b>	<b>M/SC</b>	<b>Core</b>
3A09.01	<i>Execute necessary action determined by diagnosis of turn signal, hazard light operation, and horn concerns.</i>	P2		4%	C3	M/SC	Core
3A09.02	<i>Execute necessary action determined by diagnosis of incorrect gauge readings.</i>	P1		5%	C3	M/SC	Core
3A09.03	<i>Execute proper diagnostics and repair of warning devices and information systems.</i>	P1		2%	C3	M/SC	Core
3A09.04	<i>Execute proper diagnostics and repair of printed circuit boards, sensors, connectors, and wires of electronic instrument circuits and horn system.</i>	P2		4%	C3	M/SC	Core
<b>3A10.00</b>	<b>Analyze and repair accessories and restraint systems.</b>			<b>9%</b>	<b>C3</b>	<b>M/SC</b>	<b>Core</b>
3A10.01	<i>Execute proper diagnostics and repair of motor-driven and other accessory circuits and door panel removal</i>	P2		4%	C3	M/SC	Core
3A10.02	<i>Execute manufacturer's procedure to disarm, enable, and repair airbag system (SRS). (NOTE: FOLLOW MANUFACTURER'S SAFETY PROCEDURE TO PREVENT ACCIDENTAL DEPLOYMENT OF AIR BAG)</i>			2%	C3	M/SC	Core
3A10.03	<i>Execute manufacturer's procedure to diagnose body electronic system circuits using scan tool including cause of false, intermittent, or inoperable of anti-theft system.</i>	P2/3		3%	C3	M/SC	Core