

# VoCATS

## Course Blueprint

### Technology Education

#### *8110 Fundamentals of Technology*

*Public Schools of North Carolina  
State Board of Education • Department of Public Instruction  
Office of Instructional and Accountability Services  
Division of Instructional Services*

*Raleigh, North Carolina  
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*Special thanks to the following educators who reviewed and approved this blueprint for technical content and appropriateness for industry.*

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## 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 is intended to be used by teachers in planning the course of work for the year, preparing daily lesson plans, and constructing instructionally valid assessments.

For additional information about this blueprint, contact program area staff. For additional information about the VoCATS Competency Achievement Tracking System, contact program area staff or VoCATS, Workforce Development, Division of Instructional Services, North Carolina Department of Public Instruction, 301 North Wilmington Street, Raleigh, North Carolina 27601-2825, 919/715-1674, email: [rwelfare@dpi.state.nc.us](mailto:rwelfare@dpi.state.nc.us).

### Interpretation of Columns on VoCATS Course Blueprints

No.	Heading	Column information
1	Comp# Obj.#	Comp=Competency number (three digits); Obj.=Objective number (competency number plus 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 the students' performance on preassessments.
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 VoCATS Annual Planning Calendar shows how to use the course weight to determine the approximate number of days to be devoted to 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=Psychomotor; A=Affective)
7	Integrated Skill Area	Shows links to other academic areas. Integrated skills codes: A=Arts; C=Communications; CD=Career Development; CS=Information/Computer Skills; H=Health and Safety; 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 pre- and postassessments..

*Workforce Development 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.*

**TECHNOLOGY EDUCATION**  
**COURSE BLUEPRINT for 8110 - FUNDAMENTALS OF TECHNOLOGY**  
(Recommended hours of instruction: 135 Hours)

Comp # Obj #	Unit Titles/Competency and Objective Statements (The Student will be able to:)	Time Hours	Course Weight		Type Behavior	Integrated Skill Area	Core Supp
			Cognitive	Performance			
1	2		4	5	6	7	8
			<b>100%</b>				
	<b>Total Course Weight</b>	<b>135</b>	<b>40%</b>	<b>60%</b>			
<b>A</b>	<b>Nature of Technology</b>						
<b>001.00</b>	<b>Analyze technology and its relationship to the designed world</b>		<b>9%</b>	<b>3%</b>			
001.01	<i>Define and characterize technology</i>		2%		C1	SC	Core
001.02	<i>Recognize and describe the interaction of technology and society.</i>		3%		C1	SS	Core
001.03	<i>Analyze and assess the evolution and influence of technology.</i>		2%		C3	SC	Core
001.04	<i>Analyze how technology relates to other disciplines</i>		1%		C3	SC	Core
001.05	<i>Investigate trends in technology (tie careers into this objective)</i>		1%		C3	SC/CD	Core
001.06	<i>Produce a career development plan</i>			3%	C3P	CD	Core
<b>002.00</b>	<b>Develop a safe and an effective workplace</b>		<b>3%</b>	<b>3%</b>			
002.01	<i>Recognize safety procedures and practices in a technological world</i>		1%		C1	H	Core
002.02	<i>Apply safety procedures and practices in a technological world</i>			1%	C3P	H	Core
002.03	<i>Outline leadership skills and team building</i>		1%		C2	SS	Core
002.04	<i>Demonstrate leadership skills and team building</i>			1%	C3P	SS	Core
002.05	<i>Outline how a computer is used as an information management tool</i>		1%		C2	CS	Core
002.06	<i>Utilize a computer as an information management tool</i>			1%	C3P	CS	Core
<b>B</b>	<b>DESIGN</b>						
<b>003.00</b>	<b>Apply a formal problem-solving method</b>		<b>5%</b>	<b>4%</b>			
003.01	<i>Explain the concepts of DEAL problem solving method</i>		2%		C2	SC	Core
003.02	<i>Apply the DEAL problem solving method</i>			2%	C1P	SC	Core
003.03	<i>Explain the Universal Systems Model</i>		2%		C3	SC	Core
003.04	<i>Describe research and development strategies</i>		1%		C2	SC	Core
003.05	<i>Apply research and development strategies</i>			2%	C3P	SC	Core
<b>004.00</b>	<b>Communicate the design process</b>		<b>5%</b>	<b>9%</b>			
004.01	<i>Explain terms and procedures involving measurement tools</i>		2%		C3	SC	Core

Comp # Obj #	Unit Titles/Competency and Objective Statements (The Student will be able to:)	Time Hours	Course Weight		Type Behavior	Integrated Skill Area	Core Supp
			Cognitive	Performance			
1	2		4	5	6	7	8
004.02	<i>Apply measuring techniques</i>			3%	C3P	SC/M	Core
004.03	<i>Explain terms and procedures utilized in technical sketching</i>		2%		C3	C	Core
004.04	<i>Apply technical sketching utilizing orthographic and pictorial layout</i>			4%	C3P	C	Core
004.05	<i>Explain computer processes used in computerized 2D/3D modeling</i>		1%		C1	CS/C	Core
004.06	<i>Utilize the computer as a design tool including 2D/3D modeling</i>			2%	C3P	CS/C	Core
<b>005.00</b>	<b>Apply the principles and elements of design</b>		<b>6%</b>	<b>8%</b>			
005.01	<i>Identify the principles and elements of design</i>		2%		C1	C/A	Core
005.02	<i>Describe how the design process relates to technology and other disciplines</i>		3%		C2	SC/C	Core
005.03	<i>Create a product based on the principles and elements of design</i>			4%	C3P	C/A	Core
005.04	<i>Explain computer processes used as a graphic design</i>		1%		C1	CS/C	Core
005.05	<i>Utilize the computer as a graphic design tool</i>			4%	C3P	CS/C	Core
<b>006.00</b>	<b>Develop abilities to communicate effectively in a technological world</b>		<b>2%</b>	<b>3%</b>			
006.01	<i>Explain the abilities to communicate effectively in a technological world</i>		2%		C1	C	Core
006.02	<i>Produce a technical report</i>			1%	C3P	C/SC	Core
006.03	<i>Deliver an oral presentation</i>			1%	C3P	C	Core
006.04	<i>Produce a technology related portfolio</i>			1%	C3P	C	Core
<b>C</b>	<b>THE DESIGNED WORLD</b>						
<b>007.00</b>	<b>Develop an awareness of the designed world</b>		<b>10%</b>	<b>30%</b>			
007.01	<i>Explain the concepts and principles of communications systems</i>		2%		C2	SC	Core
007.02	<i>Apply the concepts and principles of communication systems</i>			6%	C3P	SC	Core
007.03	<i>Explain the concepts and principles of transportation systems</i>		2%		C2	SC	Core
007.04	<i>Apply the concepts and principles of transportation systems</i>			6%	C3P	SC	Core
007.05	<i>Explain the concepts and principles of manufacturing systems</i>		2%		C2	SC	Core
007.06	<i>Apply the concepts and principles of manufacturing systems</i>			6%	C3P	SC	Core
007.07	<i>Explain the concepts and principles of structural systems</i>		2%		C2	SC	Core
007.08	<i>Apply the concepts and principles of structural systems</i>			6%	C3P	SC	Core
007.09	<i>Explain the concepts and principles of energy and power</i>		1%		C2	SC	Core
007.10	<i>Apply the concepts and principles of energy and power</i>			3%	C3P	SC	Core
007.11	<i>Explain the concepts and principles of biotechnology</i>		1%		C2	SC	Core
007.12	<i>Apply the concepts and principles of biotechnology</i>			3%	C3P	SC	Core