

VoCATS Course Blueprint

Agriculture Education

6831 Agricultural Mechanics I

*Public Schools of North Carolina
State Board of Education • Department of Public Instruction
Curriculum and School Reform Services
Division of Instructional Services*

*Raleigh, North Carolina
Winter 2004*

Special thanks to the following educators who assisted with the development of this blueprint.

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This blueprint has been reviewed by business and industry representatives for technical content and appropriateness for the industry. Contact benjie_forrest@ncsu.edu 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, Division of Instructional Services, North Carolina Department of Public Instruction, 6358 Mail Service Center, Raleigh, North Carolina 27699-5358, 919/807-3876, email: rwelfare@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..

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AGRICULTURAL EDUCATION
COURSE BLUEPRINT FOR 6831 - AGRICULTURAL MECHANICS I
(Recommended hours of instruction: 135-180)

Comp# Obj.#	Unit Titles/Competency and Objective Statements (The learner will be able to:)	Time Hours	Course Weight		Type Behavior	Integrated Skill Area	Core Supp
			Cognitive	Performance			
1	2	3	4	5	6	7	8
			100%				
	Total Course Weight		64%	36%			
A	LEADERSHIP DEVELOPMENT		5%	2%			
AE01.00	Investigate organizations related to the agricultural mechanics industry.		2%		C3	A/CD/E/ SC/SS	Core
<i>AE01.01</i>	<i>Describe opportunities for leadership development in agricultural mechanics industry organizations.</i>		<i>1%</i>		<i>C1</i>	<i>CD/E/SS</i>	<i>Core</i>
<i>AE01.02</i>	<i>Examine youth activities provided by agricultural mechanics industry organizations.</i>		<i>1%</i>		<i>C3</i>	<i>A/CD/SC/ SS</i>	<i>Core</i>
AE02.00	Demonstrate the process used to conduct business meetings in agricultural mechanics organizations.		3%	2%	C3P	E/M/SS	Core
<i>AE02.01</i>	<i>Explain the role of parliamentary procedure in conducting business meetings.</i>		<i>3%</i>		<i>C2</i>	<i>E/SS</i>	<i>Core</i>
<i>AE02.02</i>	<i>Demonstrate key parliamentary procedure abilities that would be used in a business meeting.</i>			<i>2%</i>	<i>C3P</i>	<i>E/M/SS</i>	<i>Core</i>
AE03.00	Research aspects of public speaking and their importance to agricultural mechanics businesses.				C3P	CD/E/M/ SC	Supp
<i>AE03.01</i>	<i>Compare techniques of public speaking.</i>				<i>C3P</i>	<i>E</i>	<i>Supp</i>
<i>AE03.02</i>	<i>Demonstrate a conversational knowledge of agricultural mechanics and the agricultural mechanics industry.</i>				<i>C3P</i>	<i>CD/E/M/ SC</i>	<i>Supp</i>

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	3	4	5	6	7	8
B	EMPLOYABILITY SKILLS		8%	3%			
AE04.00	Describe skills needed for employment and careers in the agricultural mechanics industry.		2%		C1	CD/E/SC	Core
<i>AE04.01</i>	<i>Identify agricultural mechanics industry careers and their required skills.</i>		<i>1%</i>		<i>C1</i>	<i>CD/E/SC</i>	<i>Core</i>
<i>AE04.02</i>	<i>Describe various skills that are necessary for employment in an agricultural mechanics career.</i>		<i>1%</i>		<i>C1</i>	<i>CD/E//SC</i>	<i>Core</i>
AE05.00	Describe agricultural mechanics as a profession and its importance in relation to the National, State, and local economy.		2%		C1	CD/E/M	Core
<i>AE05.01</i>	<i>Describe the broad field of agricultural mechanics and the different categories.</i>		<i>1%</i>		<i>C1</i>	<i>CD/E</i>	<i>Core</i>
<i>AE05.02</i>	<i>Specify how agricultural mechanics is important to our economy.</i>		<i>1%</i>		<i>C1</i>	<i>E/M</i>	<i>Core</i>
AE06.00	Explore occupations in the field of agricultural mechanics and its common career paths.				C3	CD/E/SC	Supp
<i>AE06.01</i>	<i>Analyze agricultural mechanics industry careers and related employment opportunities.</i>				<i>C3</i>	<i>CD/E/SC</i>	<i>Supp</i>
<i>AE06.02</i>	<i>Compare characteristics, preparation and credentials needed in agricultural mechanics industry careers.</i>				<i>C3</i>	<i>CD/E/SC</i>	<i>Supp</i>
AE07.00	Examine opportunities for work-based learning experiences related to the agricultural mechanics industry.				C3P	CD/E/M/ SC	Supp
<i>AE07.01</i>	<i>Revise career development plans to reflect agricultural mechanics career opportunities.</i>				<i>C3P</i>	<i>CD/E/ SC</i>	<i>Supp</i>
<i>AE07.02</i>	<i>Research opportunities for career development in agricultural mechanics.</i>				<i>C3</i>	<i>CD/E/M/ SC</i>	<i>Supp</i>

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AE08.00	Examine the Supervised Agricultural Experience component of the agricultural mechanics course.		2%	2%	C3P	CD/E/M	Core
<i>AE08.01</i>	<i>Identify the component parts of the Supervised Agricultural Experience Record used in the agricultural mechanics course.</i>		<i>2%</i>		<i>C1</i>	<i>CD/E/M</i>	<i>Core</i>
<i>AE08.02</i>	<i>Correctly record entries in the SAE Record.</i>			<i>2%</i>	<i>C3P</i>	<i>CD/E/M</i>	<i>Core</i>
AE09.00	Explore methods of financial record keeping in an agricultural mechanics business.		2%	1%	C3P	E/M	Core
<i>AE09.01</i>	<i>Define the terminology used in financial record-keeping systems, such as asset, liability, inventory, net worth, etc.</i>		<i>2%</i>		<i>C1</i>	<i>E/M</i>	<i>Core</i>
<i>AE09.02</i>	<i>Correctly record entries in a financial record system.</i>			<i>1%</i>	<i>C3P</i>	<i>E/M</i>	<i>Core</i>
AE10.00	Research alternative methods of record keeping.				C3P	CS/M	Supp
<i>AE10.01</i>	<i>Compare computer software programs designed to aid record keeping.</i>				<i>C3P</i>	<i>CS/M</i>	<i>Supp</i>
<i>AE10.02</i>	<i>Examine the Internet for methods of record-keeping assistance.</i>				<i>C3</i>	<i>CS/M</i>	<i>Supp</i>
AE11.00	Research customer relations techniques for working in agricultural mechanics businesses.				C3P	CD/CS/E/M	Supp
<i>AE11.01</i>	<i>Apply customer relations techniques in an agricultural mechanics business situation.</i>				<i>C3P</i>	<i>CD/CS/E/M</i>	<i>Supp</i>
<i>AE11.02</i>	<i>Compare various markets, marketing methods, and salesmanship techniques in the agricultural mechanics industry.</i>				<i>C3</i>	<i>CD/E/M</i>	<i>Supp</i>
AE12.00	Investigate techniques for marketing agricultural mechanics products and services.				C3P	A/CS/E/M/ISS	Supp
<i>AE12.01</i>	<i>Design advertisements and arrange displays of agricultural mechanics products and services which appeal to the public.</i>				<i>C3P</i>	<i>A/CS/E</i>	<i>Supp</i>
<i>AE12.02</i>	<i>Explain the principles of supply and demand.</i>				<i>C3</i>	<i>E/ M/SS</i>	<i>Supp</i>

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C	SAFE WORK PRACTICES		6%				
AE13.00	Describe safety aspects of agricultural mechanics.		6%		C3	E/H	Core
<i>AE13.01</i>	<i>Explain safety rules including color codes and the importance of good housekeeping.</i>		4%		C2	E/H	Core
<i>AE13.02</i>	<i>Research safety aspects of agricultural mechanics.</i>		2%		C3	E/H	Core
D	AGRICULTURAL TOOLS		10%	10%			
AE14.00	Demonstrate the safe use of agricultural mechanics hand tools.		6%	6%	C3P	E/H/M	Core
<i>AE14.01</i>	<i>Explain the uses of agricultural mechanics hand tools.</i>		6%		C2	E/H/M	Core
<i>AE14.02</i>	<i>Use agricultural mechanics hand tools properly and safely.</i>			6%	C3P	E/H/M	Core
AE15.00	Demonstrate the proper use of agricultural mechanics power tools.		4%	4%	C3P	E/H/M/SS	Core
<i>AE15.01</i>	<i>Explain the uses of power tools to perform tasks in agricultural mechanics.</i>		4%		C2	E/SS	Core
<i>AE15.02</i>	<i>Use agricultural mechanics power tools properly and safely.</i>			4%	C3P	H/M	Core
E	ELECTRIC WIRING		12%				
AE16.00	Explain principles of electricity.		6%		C3	E/H/M/ SC	Core
<i>AE16.01</i>	<i>Define common electrical terms.</i>		3%		C1	E/SC	Core
<i>AE16.02</i>	<i>Compute electrical energy use and cost.</i>		2%		C3	M/SC	Core
<i>AE16.03</i>	<i>Investigate safe practices involving electricity.</i>		1%		C3	E/H/SC	Core
AE17.00	Explore basic electrical wiring.		6%		C3P	E/M/SC	Core
<i>AE17.01</i>	<i>Describe materials used in electric wiring.</i>		3%		C1	E/SC	Core
<i>AE17.02</i>	<i>Explain the procedure for installing switches, making common splices, and doing other electrical wiring tasks.</i>		3%		C3	E/M/SC	Core
<i>AE17.03</i>	<i>Install switches, receptacles, and light fixtures.</i>				C3P	H/M/SC	Supp

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F	CONCRETE		4%	1%			
AE18.00	Examine materials needed for concrete.		3%		C3	E/M/S	Core
<i>AE18.01</i>	<i>Describe characteristics of concrete ingredients.</i>		2%		C1	E/SC	Core
<i>AE18.02</i>	<i>Explain the procedure for mixing concrete.</i>		1%		C3	E/M/SC	Core
AE19.00	Perform various concrete skills.		1%	1%	C3P	E/M/SC	Core
<i>AE19.01</i>	<i>Distinguish between site preparation, placing, finishing, and curing.</i>		1%		C3	E/M/SC	Core
<i>AE19.02</i>	<i>Demonstrate basic concrete tasks.</i>			1%	C3P	M/SC	Core
G	CARPENTRY		8%	7%			
AE20.00	Explore wood construction materials.		2%	2%	C3P	E/M	Core
<i>AE20.01</i>	<i>Describe grades of lumber and plywood.</i>		2%		C1	E/M	Core
<i>AE20.02</i>	<i>Calculate board feet.</i>			2%	C3P	M	Core
AE21.00	Use nails, staples, screws, bolts, nuts, washers, and corrugated fasteners.		2%	1%	C3P	E/M/SC	Core
<i>AE21.01</i>	<i>Identify types of fasteners.</i>		2%		C1	E/SC	Core
<i>AE21.02</i>	<i>Use wood fasteners.</i>			1%	C3P	M/SC	Core
AE22.00	Plan cost-effective construction.		4%	4%	C3P	A/CS/E/ M/SC	Core
<i>AE22.01</i>	<i>Explain major factors to consider in planning new construction or repair work.</i>		2%		C3	E/M/SC	Core
<i>AE22.02</i>	<i>Calculate the amount of materials needed for a construction project.</i>			1%	C3P	M	Core
<i>AE22.03</i>	<i>Explain the purpose of sketching construction plans including the types of drawings used.</i>		2%		C3	CS/E	Core
<i>AE22.04</i>	<i>Construct a carpentry project.</i>			3%	C3P	A/M/SC	Core

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H	PAINTS AND PRESERVATIVES		2%				
AE023.00	Prepare materials for painting.		2%		C3	E/M/SC	Core
AE23.01	<i>Describe problems in surface preparation and paint application.</i>		1%		C1	E/SC	Core
AE23.02	<i>Compare different painting techniques and the tools and supplies needed.</i>		1%		C3	E/M/SC	Core
I	METAL SKILLS		17%	5%			
AE24.00	Research cold metal skills.		3%	3%	C3P	E/M/SC	Core
AE24.01	<i>Explain which skills are needed to perform cold metal tasks.</i>		3%		C2	E/SC	Core
AE24.02	<i>Identify, cut, drill, bend, shape, file, and grind cold metals.</i>			3%	C3P	M/SC	Core
AE25.00	Demonstrate proper procedures for oxyacetylene processes.		8%		C3	E/SC	Core
AE25.01	<i>Examine oxy-fuel procedures.</i>		4%		C3	E/SC	Core
AE25.02	<i>Explain how cutting and welding tips are used to cut and weld metal.</i>		4%		C2	E/SC	Core
AE26.00	Research arc welding equipment.		4%		C3	E/SC	Core
AE26.01	<i>Compare types of arc welding machines, welding equipment, and electrodes.</i>		2%		C3	E/SC	Core
AE26.02	<i>Describe the uses of arc welding equipment.</i>		2%		C1	E/SC	Core
AE27.00	Demonstrate basic arc welding.		2%	2%	C3P	E/M/SC	Core
AE27.01	<i>Explain basic arc welding procedures.</i>		2%		C3	E/M/SC	Core
AE27.02	<i>Practice basic steps of arc welding in the flat position.</i>			2%	C3P	M/SC	Core
AE27.03	<i>Describe types of out-of-position welds.</i>				C1	E/M/SC	Supp
AE27.04	<i>Demonstrate out-of-position welds.</i>				C3P	M/SC	Supp