

VoCATS Course Blueprint

Trade and Industrial Education

*7902 Scientific & Technical
Visualization II*

Technology Education

*8007 Scientific & Technical
Visualization II*

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

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This blueprint has been reviewed by business and industry representatives for technical content and appropriateness for the industry. Contact tshown@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, Division of Instructional Services, North Carolina Department of Public Instruction, 301 North Wilmington Street, Raleigh, North Carolina 27601-2825, 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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TECHNOLOGY EDUCATION
COURSE BLUEPRINT FOR 8007-Scientific and Technical Visualization II
 [Recommended hours of instruction: 135-180]

Comp # Obj #	Unit Titles / Competency and Objective Statements (The learner will be able to:)	Time Hours	Cognitive Weight		Type Behavior	Integrated Skill Area	Core Supp
			Cognitive	Performan ce			
1	2	3	4	5	6	7	8
	Course Level II	135	100%				
			50%	50%			
A	LEADERSHIP DEVELOPMENT						
V201.	Explain oral communication and job seeking skills.		2%	2%	CP3	CD	Core
V201.01	Describe how to deliver an extemporaneous technical presentation.		1%		C1	CD	Core
V201.02	Prepare an extemporaneous technical presentation.			2%	CP3	CD	Core
V201.03	Specify how to complete a letter of application, a job application, and a job interview.		1%		C1	CD	Core
B	ADVANCED TOOLS OF VISUALIZATION						
V202.	Apply advanced tools of visualization.		5%	6%	CP3	A/CS/SC	Core
V202.01	Describe how computers store information.		2%		C1	CS	Core
V202.02	Define how to apply pixel values to digital images.		2%		C1	A/CS	Core
V202.03	Apply pixel values to digital images.			6%	CP3	A/CS	Core
V202.04	Identify trends in scientific & technical visualization tools.		1%		C1	SC	Core
C	ADVANCED PRINCIPLES OF VISUALIZATION						
V203.	Demonstrate advanced principles of visualization.		12%	8%	CP3	A/CS	Core
V203.01	Recognize advanced 2D design concepts.		3%		C1	A/CS	Core
V203.02	Describe advanced imaging techniques.		3%		C1	A/CS	Core
V203.03	Identify advanced presentation techniques.		2%		C1	A/CS	Core
V203.04	Demonstrate advanced presentation techniques.			4%	CP3	A/CS	Core
V203.05	Identify basic web page design.		4%		C1	A/CS	Core
V203.06	Demonstrate basic web page design.			4%	CP3	A/CS	Core
D	ADVANCED STATIC AND DYNAMIC VISUALIZATION						
V204.	Demonstrate advanced visualization processes.		21%	3%	CP3	A/CS	Core
V204.01	Summarize advanced 3D modeling.		12%		C2	A/CS	Core
V204.02	Interpret advanced animation techniques.		4%		C2	A/CS	Core
V204.03	Describe video-editing techniques.		5%		C1	A/CS	Core
V204.04	Demonstrate video-editing techniques.			3%	CP3	A/CS	Core

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E	ADVANCED SCIENTIFIC VISUALIZATION						
V205.	Demonstrate advanced scientific visualization.		8%	29%	CP3	A/CS/M/SC	Core
V205.01	Recognize cells and their parts.		2%		C1	SC	Core
V205.02	Create a visualization of the cell and its parts.			4%	CP3	A/CS/SC	Core
V205.03	Recognize plate tectonics.		2%		C1	SC	Core
V205.04	Create a visualization of plate tectonics.			5%	CP3	A/CS/SC	Core
V205.05	Describe DNA and gel electrophoresis.		2%		C1	SC	Core
V205.06	Create a visualization of DNA and gel electrophoresis.			6%	CP3	A/CS/SC	Core
V205.07	Explain different simple machines.		2%		C2	M/SC	Core
V205.08	Create a visualization of simple machines.			7%	CP3	A/CS/M/SC	Core
V205.09	Create an advanced visualization.			7%	CP3	A/CS/M/SC	Core
F	PREPERATION FOR THE FUTURE						
V206.	Demonstrate preparedness for the future.		2%	2%	CP3	A/CD/CS	Core
V206.01	Summarize different types of portfolios.		2%		C2	CD	Core
V206.02	Synthesize an electronic portfolio.			2%	CP3	A/CD/CS	Core