

VoCATS Course Blueprints

Business and Information Technology Education, Trade and Industrial Education

BE6341/7980 Networking I

*Public Schools of North Carolina
State Board of Education • Department of Public Instruction
Office of Instructional and Accountability 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 smiller@dpi.state.nc.us or jrsmith@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, and 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 27699-6358, 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 (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..

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BUSINESS and INFORMATION TECHNOLOGY EDUCATION/TRADE AND INDUSTRIAL EDUCATION
COURSE BLUEPRINT for BE6341 and 7980 Networking 1
(Recommended hours of instruction: 135-180)

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 4	Performance 5			
1	2				6	7	8
	Total Course Weight		100%				
			72%	28%			
A.	CAREER AND LEADERSHIP DEVELOPMENT		6%	1%			
NE01.	Demonstrate career planning and leadership skills.		6%	1%	C3P	CD/C	C/S
NE01.01	Evaluate the elements of a career plan for the IT industry.		1%		C3	CD	Core
NE01.02	Discuss IT ethical and legal issues.		2%		C3P	C	Core
NE01.03	Explore emerging technologies.		1%		C3	CD	Core
NE01.04	Demonstrate basic business meeting skills.		1%	1%	C3P	C	Core
NE01.05	Establish personal and organizational goals.		1%		C3	C	Core
NE01.06	Participate in student organizations.						Supp
B.	PC AND NETWORK HARDWARE		11%				
NE02.	Explain components and functions of PC and network hardware.		11%		C3	CS/M	Core
NE02.01	Explain functions and safety related to PC Hardware components and peripheral devices.		4%		C3	M	Core
NE02.02	Convert decimal, binary and hexadecimal numbers.		2%		C2	CS	Core
NE02.03	Explain the functions of the elements of network hardware: servers/workstations, transmission media, and network devices.		5%		C2	CS	Core
C.	PC AND NETWORK OPERATING SYSTEMS		17%	13%			
NE03.	Analyze the evolution and capabilities of operating systems.		11%		C3	CS	Core
NE03.01	Summarize the evolution of operating systems.		4%		C2	CS	Core
NE03.02	Evaluate the capabilities of Windows, NetWare, and Linux operating systems.		7%		C3	CS	Core
NE04.	Demonstrate the installation, configuration and use of operating systems.		6%	13%	C3P	CS	Core
NE04.01	Demonstrate the installation and efficient use of a desktop operating system.		3%	5%	C3P	CS	Core
NE04.02	Demonstrate the installation, configuration and use of Network Operating Systems (NOS).		3%	8%	C3	CS	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
D.	NETWORK ARCHITECTURE		15%	4%			
NE05.	Evaluate internetworking media and transmission methods.		6%	4%	C3	CS	Core
NE05.01	Evaluate types of cables.		2%	2%	C3	CS	Core
NE05.02	Characterize analog and digital signaling.		2%		C2	CS	Core
NE05.03	Explore different transmission methods		2%	2%	C2	CS	Core
NE06.	Analyze specific network architectures		9%		C3	CS	Core
NE06.01	Contrast physical and logical network topologies.		3%		C3	CS	Core
NE06.02	Explain network architecture.		1%		C2	CS	Core
NE06.03	Characterize Token Ring and Ethernet networks.		5%		C3	CS	Core
E.	PROTOCOLS		10%	2%			
NE07.	Analyze protocol models.		10%	2%	C3	CS	Core
NE07.01	Identify the function(s) of a protocol.		1%		C1	CS	Core
NE07.02	Contrast the OSI and TCP/IP models.		6%		C3	CS	Core
NE07.03	Explore the use of TCP/IP and other common protocol stacks.		3%	2%	C3	CS	Core
F.	NETWORK DESIGN AND SECURITY		13%	8%			
NE08.	Explore various network designs.		4%	3%	C3	CS	Core
NE08.01	Contrast local area networks and wide area networks.		1%		C3	CS	Core
NE08.02	Differentiate network types.		2%		C3	CS	Core
NE08.03	Construct a LAN.		1%	3%	C3P	CS	Core
NE09.	Analyze network planning and design.		3%		C3	CS	Core
NE09.01	Evaluate practical considerations of network design and criteria for selecting hardware and operating systems.		2%		C3	CS	Core
NE09.02	Explore scalability and planning for change.		1%		C3	CS	Core
NE10.	Explore the basics of network management and monitoring.		6%	5%	C3	CS	Core
NE10.01	Explain the basic purposes of network management and monitoring.		1%		C3	CS	Core
NE10.02	Identify performance issues related to network traffic.		1%		C1	CS	Core
NE10.03	Explain fault tolerance and redundancy.		1%	1%	C2	CS	Core
NE10.04	Analyze computer viruses and other security threats.		2%		C3	CS	Core
NE10.05	Explore the functions of passwords, user rights, data encryption, firewalls, and other security measures.		1%	4%	C3	CS	Core