

**Career and Technical Education  
Adapted CTE Course Blueprint  
of  
Essential Standards and Indicators**

**Trade and Industrial Education**

*II12 Network Engineering Technology II*

Public Schools of North Carolina  
State Board of Education • Department of Public Instruction  
Academic Services and Instructional Support  
Division of Career and Technical Education  
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**Summer 2014**  
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**This Adapted CTE Course Blueprint was developed using materials from  
CISCO Networking Academy Program aligned to CCNA Certification**

## Adapted CTE Course Blueprint

Essential standards are big, powerful ideas that are necessary and essential for students to know to be successful in a course. Essential standards identify the appropriate verb and cognitive process intended for the student to accomplish. Essential standards provide value throughout a student's career, in other courses, and translate to the next level of education or world of work.

This document lays out the essential standards for successfully completing the Routing and Switching Essentials Course. This course covers the second half of the CCENT certification. The essential standards use Revised Bloom's Taxonomy (RBT) category verbs (remember, understand, apply, analyze, evaluate, create) that reflect the overall intended cognitive outcome of the indicators written by Cisco Networking Academy. Each essential standard and indicator reflects the intended level of learning through two dimensions; The Knowledge Dimension is represented with letters A-C, and the Cognitive Process Dimension by numbers 1-6.

The Adapted CTE Course Blueprint includes units of instruction, essential standard(s) for each unit, and the specific indicators aligned with industry certification. Also included are the relative weights of the units and essential standards within the course.

This document will help teachers plan for curriculum delivery for the year, prepare daily lesson plans, and construct valid formative, benchmark, and summative assessments. Curriculum for this course is not provided by NCDPI. Routing and Switching Essentials competencies are used as the foundation of this course. The use of Cisco Networking Academy program curriculum and assessments are used for this course. North Carolina Department of Public Instruction (NCDPI) approves the 3<sup>rd</sup> party assessment written and validated by a Cisco Instructor Training Center (ICT). The 3<sup>rd</sup> party post assessment will be in Thinkgate. Assessment for this course is written at the level of the **ESSENTIAL STANDARD** and assesses the intended outcome of the sum of its indicators.

For additional information about this blueprint, contact the Division of Career and Technical Education, North Carolina Department of Public Instruction, 6361 Mail Service Center, Raleigh, North Carolina 27699-6361.

Reference: Anderson, Lorin W. (Ed.), Krathwohl, David R. (Ed.), et al., *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*, Addison Wesley Longman, Inc., New York, 2001.

### Interpretation of Columns on the NCDPI Adapted CTE Course Blueprint

No.	1	2	3	4
Heading	Essential Std #	Unit Titles, Essential Standards, and Indicators	Course Weight	RBT Designation
<b>Column information</b>	Unique course identifier and essential standard number.	Statements of unit titles, essential standards per unit, and specific indicators per essential standard. If applicable, includes % for each indicator.	Shows the relative importance of each unit and essential standard. Course weight is used to help determine the percentage of total class time to be spent on each essential standard.	Classification of outcome behavior in essential standards and indicators in Dimensions according to the Revised Bloom's Taxonomy.  <b>Cognitive Process Dimension:</b> 1 Remember 2 Understand 3 Apply 4 Analyze 5 Evaluate 6 Create  <b>Knowledge Dimension:</b> A Factual Knowledge B Conceptual Knowledge C Procedural Knowledge

Career and 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.

Career and Technical Student Organizations (CTSO) are an integral part of this curriculum. CTSOs are strategies used to teach course content, develop leadership, citizenship, responsibility, and proficiencies related to workplace needs.

**CTE Course Blueprint of Essential Standards  
II12 NETWORK ENGINEERING TECHNOLOGY II**  
(Recommended hours of instruction: 135 or 150)

Essential Std #	Units, Essential Standards, and Indicators (The Learner will be able to:)	Course Weight	RBT Designation
1	2	3	4
	<b>Total Course Weight</b>	<b>100%</b>	
<b>1.00</b>	<b>Introduction to Switched Networks</b>	<b>6%</b>	<b>B2</b>
<b>2.00</b>	<b>Basic Switching Concepts and Configuration</b>	<b>8%</b>	<b>B2</b>
<b>3.00</b>	<b>VLANs</b>	<b>9%</b>	<b>C3</b>
<b>4.00</b>	<b>Routing Concepts □</b>	<b>13%</b>	<b>C3</b>
<b>5.00</b>	<b>Inter-VLAN Routing</b>	<b>11%</b>	<b>C3</b>
<b>6.00</b>	<b>Static Routing</b>	<b>12%</b>	<b>B2</b>
<b>7.00</b>	<b>Routing Dynamically</b>	<b>8%</b>	<b>B2</b>
<b>8.00</b>	<b>Single-Area OSPF □</b>	<b>6%</b>	<b>B2</b>
<b>9.00</b>	<b>Access Control Lists</b>	<b>12%</b>	<b>C3</b>
<b>10.00</b>	<b>DHCP □</b>	<b>7%</b>	<b>C3</b>
<b>11.00</b>	<b>Network Address Translation for IPv4</b>	<b>8%</b>	<b>C3</b>