

Career and Technical Education Adapted CTE Course Blueprint of Essential Standards

Health Science Education

HB11 Biomedical Technology I

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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Raleigh, North Carolina
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This Adapted CTE Course Blueprint has been reviewed by business and industry representatives for technical content and appropriateness for the industry.

Adapted CTE Course Blueprint of Essential Standards

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 a specific course leading to industry certification. The certifying organization provides XXXXX, which is used to write the essential standards. 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 the certifying body. 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. The industry certification reflected in this document is XXXXXXXXXXXXXXXX.

This document will help teachers plan for curriculum delivery for the course, prepare daily lesson plans, and construct valid formative, benchmark, and summative assessments. Curriculum for this course is not provided by NCDPI. Industry curriculum providers reviewed and approved for this course collaborated with the North Carolina Department of Public Instruction (NCDPI) to develop a valid and reliable test item bank used to produce a secure postassessment administered by NCDPI. Assessment for this course is written at the level of the **ESSENTIAL STANDARD** and assesses the intended outcome of the sum of its indicators. The following industry curriculum providers participated in the development of the secure test item bank. To assure alignment of the postassessment with the credential, the following curriculum providers have been reviewed and determined to provide curriculum to cover the essential standards. Curriculum providers include: the North Carolina Association for Biomedical Research.

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
Column information	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. Cognitive Process Dimension: 1 Remember 2 Understand 3 Apply 4 Analyze 5 Evaluate 6 Create Knowledge Dimension: 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. CTOS are strategies used to teach course content, develop leadership, citizenship, responsibility, and proficiencies related to workplace needs.

Adapted CTE Course Blueprint of Essential Standards for HB11 Biomedical Technology I (Recommended hours of instruction: 135-180)

Essential Std #	Units, Essential Standards, and Indicators (The Learner will be able to:)	Course Weight	RBT Designation
1	2	3	4
	Total Course Weight	100%	
A	UNDERSTAND BIOMEDICAL RESEARCH AND OTHER ISSUES IN SCIENCE	50%	40 days
BMTI 1.00	Understand biomedical research	15%	12 days
	<i>1.01 Types of Biomedical Research</i>		
	<i>1.02 Biomedical Research Methods</i>		
	<i>1.03 Benefits of Biomedical Research</i>		
BMTI 02.00	Understand the use and care of animals in biomedical research	10%	8 days
	<i>2.01 Use of Animals in Biomedical Research</i>		
	<i>2.02 Care of Animals in Biomedical Research</i>		
BMTI 03.00	Understand some of the challenges to biomedical research	10%	8 days
	<i>3.01 Animal Research: Issues and Answers</i>		
	<i>3.02 Transgenic Animals</i>		
	<i>3.03 Therapeutic vs. Reproductive Cloning</i>		
BMTI 04.00	Understand other issues in science	15%	12 days
	<i>4.01 Careers in Bioscience</i>		
	<i>4.02 Genetics Primer</i>		
	<i>4.03 Nanotechnology</i>		
	<i>4.04 Regenerative Medicine</i>		
	<i>4.05 Vaccines</i>		
B	UNDERSTAND CANCER, INFECTIOUS DISEASES AND FORENSIC MEDICINE	50%	40 days
BMTI 05.00	Understand Cell Biology and Cancer	15%	12 days
	<i>5.01 The Faces of Cancer</i>		
	<i>5.02 Cancer and the Cell Cycle</i>		
	<i>5.03 Cancer as a Multistep Process</i>		
	<i>5.04 Evaluating Claims About Cancer</i>		
	<i>5.05 Acting on Information About Cancer</i>		
BMTI 06.00	Understand Emerging and Re-emerging Infectious Diseases	15%	12 days
	<i>6.01 Deadly Disease Among Us</i>		
	<i>6.02 Disease Detectives</i>		
	<i>6.03 Superbugs: An Evolving Concern</i>		
	<i>6.04 Protecting the Herd</i>		
	<i>6.05 Making Hard Decisions</i>		
BMTI 07.00	Understand Pathology and Forensic Science	20%	16 days
	<i>7.01 Diagnostic Services in Health Care</i>		
	<i>7.02 Autopsy</i>		
	<i>7.03 DNA Analysis</i>		
	<i>7.04 Applications of Forensic Science</i>		
	<i>7.05 Uncertainty in Medical Testing</i>		

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