

# **ITEA/CTTE/NCATE REVISED STANDARDS**

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WITTEN BY THE  
CTTE ACCREDITATION COMMITTEE**

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SECOND DRAFT  
May 24, 2002**

**Following is the second draft of the ITEA/CTTE/NCATE revised standards, which are being rewritten to conform to the NCATE guidelines. These standards must be rewritten every five years. It is the responsibility of the CTTE Accreditation Committee to rewrite these standards. In April of 2002 the first draft of these standards was placed on the CTTE web site. After receiving many comments and suggestions, the second draft was written and is now ready for review. Please send all comments and suggestions to [Schwaller@stcloudstate.edu](mailto:Schwaller@stcloudstate.edu) by September 20, 2002.**

# INTRODUCTION

## Background

The following ITEA/CTTE/NCATE Standards were rewritten by the CTTE Accreditation Committee and submitted to NCATE for approval in October of 2003. The following revised standards have been reviewed extensively by the technology education profession over the past several years. The revised standards are a result of several projects including:

1. The Professional Development Standards, part of International Technology Education Association's Technology for All Americans Project.
2. The 1997 ITEA/CTTE/NCATE guidelines approved by NCATE.
3. The INTASC Standards.
4. The 20 Standards for Technological Literacy, part of International Technology Education Association's Technology for All Americans Project.
5. The suggested format for Standards by NCATE using knowledge, performance, and disposition indicators. (NCATE Professional Standards for the Accreditation of School, Colleges, and Departments of Education, 2002 Edition)

## Description of the Standards

### Types of Standards

There are ten standards. The ten standards are subdivided into two sets as shown below:

#### Subject Matter Standards for Technology Education

Standard 1—The Nature of Technology  
 Standard 2—Technology and Society  
 Standard 3—Design  
 Standard 4—Abilities for a Technological World  
 Standard 5—The Designed World

#### Effective Teaching Standards for Technology Education

Standard 6—Curriculum  
 Standard 7—Instructional Strategies  
 Standard 8—Learning Environment  
 Standard 9—Students  
 Standard 10—Professional Growth

Standards 1-5 of this document specifically focus on the subject matter of technology. For more detailed descriptions of standards 1-5, refer to the *Standards for Technological Literacy: Content for the Study of Technology* as part of the Technology for All Americans Project. Standards 6-10 identify the knowledge necessary for effective teaching of technology subject matter. For more detailed descriptions of standards 6-10 refer to the *Professional Development Standards* which are part of the Technology for All Americans Project.

### The Designed World

Note that the document *Standards for Technological Literacy: Content for the Study of Technology* includes an area entitled "The Designed World." This content (medical, agricultural/biotechnologies, energy, communication, transportation, construction, and manufacturing technologies) has also been included as an ITEA/CTTE/NCATE subject matter standard (Standard # 5). It should be noted that in addition to Standard 5, "The Designed World" content should also be evident in all of the subject matter guidelines 1-4. For example, when teaching and learning occurs in any of the subject matter content standards 1-4, it should be learned in the context of medical, agricultural/biotechnology, energy, communication, transportation, construction, and/or manufacturing technology. It is not necessary to have courses in each of these areas, however, there should be ample evidence included that shows all of these areas are being covered within a variety of courses in the technology education program.

## **Indicators**

Each of the ten standards are further described and explained by including outcome statements that are called “indicators.” The “indicators” are statements that further define the standard. They help to show the depth and breadth of the standard and give suggestions as to the type of topics that are components of the standard.

To help better understand each standard, there are knowledge, performance and disposition indicators included with each standard. **Knowledge indicators** are those that deal with cognitive information such as concepts, theories, ideas, formulas, definitions, identifications, analyses, etc. about the standard. **Performance indicators** are those that represent skills and physical outcomes, and the ability to use content concerning the standard. **Disposition indicators** are those that deal with attitudes, values, ethics, beliefs, and affective behaviors about the standard. It is important to remember that when writing a folio, it is not necessary to respond to each and every indicator. However, mastery of indicators will lead to more complete achievement of the standard.

In addition to the indicators, a section has been included called “assessment materials.” These are suggested topics about the indicators that the folio writer should consider when selecting performance evidence to show that the standard is being met by the technology education teacher candidates.

## **Suggestions When Writing a Folio**

The following is a list of suggestions that will help the folio writer.

1. Before writing the folio to be submitted, it is suggested that the faculty from the technology education department or program collect various candidate assessments showing a variety of technology education teacher candidate performances for each standard at least one year before beginning to write the folio.
2. When addressing each standard, refer to the indicators and Assessment materials on the Rubric. Using the assessments collected from the students, identify how the program meets each standard by writing the “Explanation” section and including appendices for support.
3. The entire folio should have page numbers from the beginning to the end.
4. When referring to an appendix or a part of an appendix in the “Explanation” section, always reference the appendix with pages numbers, for example, (See Appendix A, page 81).
5. It is suggested that approximately ten (10) pages of explanation and student assessment materials (Appendices) be included to show how the technology education teacher program meets each standard.
6. When selecting assessments that illustrate if the technology education teacher candidates have achieved a particular standard, consider including student assignments, portfolio entries, student authored lesson plans and units of instruction, student presentations, university, state or national test results, student reports, student journals, results of observations, etc. on the Assessment materials that are related to the three indicators of candidate knowledge, performance, and dispositions.
7. It is not necessary to show evidence that each and every indicator is being met. In fact, an appendix that has been included may relate to several indicators in one or more standard. Thus, it is very important to select the best student evidence or assessments possible.

## The Folio Review Process

When being reviewed by folio reviewers, each standard will be judged based upon unacceptable, acceptable, or target evidence that has been submitted as shown in the Rubric as part of each standard.

For **Subject Matter** Standards 1-5, unacceptable, acceptable or target judgments are defined as:

Unacceptable—Technology education teacher candidates have inadequate knowledge of the subject matter that they plan to teach and are unable to provide examples of important principles or concepts identified as part of the standard.

Acceptable—Technology education teacher candidates know the subject matter that they plan to teach and can explain important principles and concepts delineated in the standards.

Target—Technology education teacher candidates have in-depth knowledge of the subject matter that they plan to teach as described in the standards and they demonstrate their knowledge through inquiry, critical analysis and evaluation of the subject matter.

For **Effective Teaching** Standards 6-10, unacceptable, acceptable or target evidence judgments are defined as:

Unacceptable—Technology education teacher candidates do not understand the relationship of content and effective teaching identified in the standards in a way that helps them develop learning experiences that integrates all the areas of technological subject matter.

Acceptable—Technology education teacher candidates have a broad knowledge of effective teaching content as identified in the standards that can incorporate the subject matter content in a way that helps them develop quality learning experiences for all students.

Target—Technology education teacher candidates demonstrate a thorough understanding of effective teaching content identified in the standards in a way that allows them to provide multiple explanations and effective teaching decisions to maximize student learning of the subject matter standards.

# STANDARD 1 — THE NATURE OF TECHNOLOGY

Technology education teacher candidates develop an understanding of the nature of technology within the context of the “Designed World.”

## INDICATORS:

The following knowledge, performance, and disposition indicators provide guidance to better understand the scope of Standard 1.

The program prepares technology education teacher candidates who can:

### Knowledge Indicators:

- Explain the characteristics and scope of technology.
- Compare the relationship among technologies and the connections between technology and other disciplines.

### Performance Indicators:

- Apply the concepts and principles of technology when teaching technology in the classroom and laboratory.

### Disposition Indicators:

- Comprehend the nature of technology in a way that demonstrates sensitivity to the positive and negative aspects of technology in our world.

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## RUBRIC FOR STANDARD 1

Based upon the explanations and assessments submitted for Standard 1, an informed judgment will be made using the Rubric format below.

### UNACCEPTABLE

There is limited or no evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### ACCEPTABLE

There is adequate evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### TARGET

There is extensive evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### Knowledge Indicators:

- Explain the characteristics and scope of technology.
- Compare the relationship among technologies and the connections between technology and other disciplines.

*Assessment materials* should contain evidence that candidates understand the rate of technological change, commercialization of technology, product demand, development of technology, technology transfer, innovation and invention, advances in science and mathematics, interrelationship between technology and environment, knowledge from other fields of study and technology, etc.

### Performance Indicators:

- Apply the concepts and principles of technology when teaching technology in the classroom and laboratory.

*Assessment materials* should contain evidence that candidates understand the systems, resources, requirements, processes, controls, feedback, trade-offs, etc.

### Disposition Indicators:

- Comprehend the nature of technology in a way that demonstrates sensitivity to the positive and negative aspects of technology in our world.

*Assessment materials* should contain evidence that candidates understand creativity in technology, advantages and disadvantages of technology development, etc.

**Explanation:** In the space below, and by including appendices, explain how your technology education teacher program meets Standard 1 by describing appropriate assessment materials and student experiences related to the indicators above. *Add as much text as needed by expanding the space below.*

## STANDARD 2 — TECHNOLOGY AND SOCIETY

Technology education teacher candidates develop an understanding of technology and society within the context of the “Designed World.”

### INDICATORS:

The following knowledge, performance, and disposition indicators provide guidance to better understand the scope of Standard 2.

The program prepares technology education teacher candidates who can:

#### Knowledge Indicators:

- Compare the relationships between technology and social, cultural, political, and economic systems.
- Assess the role of society in the development and use of technology.
- Assess the importance of significant technological innovations on the history of human kind.

#### Performance Indicators:

- Judge the effects of technology on the environment.
- Evaluate the relationship between technology and social institutions such as family, religion, education, government, and workforce.

#### Disposition Indicators:

- Demonstrate sensitivity to appropriate and inappropriate uses of technology and its effects on society and the environment.
- Make decisions based on knowledge of intended and unintended effects of technology on society and the environment.

## RUBRIC FOR STANDARD 2

Based upon the explanations and assessments submitted for Standard 2, an informed judgment will be made using the Rubric format below.

### UNACCEPTABLE

There is limited or no evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### ACCEPTABLE

There is adequate evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### TARGET

There is extensive evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### Knowledge Indicators:

- **Compare the relationships between technology and social, cultural, political, and economic systems.**
- **Assess the role of society in the development and use of technology.**
- **Assess the importance of significant technological innovations on the history of human kind.**  
*Assessment materials* should contain evidence that candidates understand trade-offs due to technology, ethical implications, social, cultural, political and economic changes due to technology, historical timelines of technological developments, and evolution of technology

### Performance Indicators:

- **Judge the effects of technology on the environment.**
- **Evaluate the relationship between technology and social institutions such as family, religion, education, government, and workforce.**  
*Assessment materials* should contain evidence that candidates understand conservation, reducing resource use, recycling, relationship of natural resources to technological development, and assignments that show how technology interrelates to various social institutions such as family, work, education, etc.

### Disposition Indicators:

- **Demonstrate sensitivity to appropriate and inappropriate uses of technology and its effects on society and the environment.**
- **Make decisions based on knowledge of intended and unintended effects of technology on society and the environment.**  
*Assessment materials* should contain evidence that candidates understand ethical issues dealing with technology, environmental damage, and how ones values relate to technological development.

**Explanation:** In the space below, and by including appendices, explain how your technology education teacher program meets Standard 2 by describing appropriate assessment materials and student experiences related to the indicators above. Add as much text as needed by expanding the space below.

## STANDARD 3 — DESIGN

Technology education teacher candidates develop an understanding of design within the context of the “Designed World.”

### INDICATORS:

The following knowledge, performance, and disposition indicators provide guidance to better understand the scope of Standard 3.

The program prepares technology education teacher candidates who can:

#### Knowledge Indicators:

- Explain the importance of design in the human-made world.
- Contrast the attributes of design.
- Assess the engineering design process and principles.

#### Performance Indicators:

- Apply the process of troubleshooting, research and development, invention, innovation, and experimentation in developing a solution to a design problem.

#### Disposition Indicators:

- Investigate the relationship between designing a product and the impact of the product on the environment, economy, and society.

## RUBRIC FOR STANDARD 3

Based upon the explanations and assessments submitted for Standard 3, an informed judgment will be made using the Rubric format below.

### UNACCEPTABLE

There is limited or no evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### ACCEPTABLE

There is adequate evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### TARGET

There is extensive evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### Knowledge Indicators:

- **Explain the importance of design in the human-made world.**
- **Contrast the attributes of design.**
- **Assess the engineering design process and principles.**  
*Assessment materials* should contain evidence that candidates understand the definition of design, requirements of design, the engineering design process, and how design helps to solve problems and create opportunities in society.

### Performance Indicators:

- **Apply the process of troubleshooting, research and development, invention, innovation, and experimentation in developing a solution to a design problem.**  
*Assessment materials* should contain evidence that candidates understand modeling, testing, evaluating and modifying designs, invention and innovation, design principles, prototyping, research and development, troubleshooting, etc.

### Disposition Indicators:

- **Investigate the relationship between designing a product and the impact of the product on the environment, economy, and society.**  
*Assessment materials* should contain evidence that candidates understand impacts and implications of products used in society, environment and economy, maintenance of products after design, and products that have little need in society.

**Explanation:** In the space below, and by including appendices, explain how your technology education teacher program meets Standard 3 by describing appropriate assessment materials and student experiences related to the indicators above. Add as much text as needed by expanding the space below.

## STANDARD 4 — ABILITIES FOR A TECHNOLOGICAL WORLD

Technology education teacher candidates develop abilities for a technological world within the context of the "Designed World."

### INDICATORS:

The following knowledge, performance, and disposition indicators provide guidance to better understand the scope of Standard 4.

The program prepares technology education teacher candidates who can:

#### Knowledge Indicators:

- Select design problems, including establishing criteria and constraints of the problem.
- Evaluate a design, assessing the success of a design solution and develop proposals for design improvements.
- Analyze a designed product and identify the key components of how it works and how it was made.
- Operate and maintain technological products and systems.

#### Performance Indicators:

- Create and model a design solution.
- Complete an assessment to evaluate merits of design solution.
- Diagnose a malfunctioning system, restore the system, and maintain the system.
- Investigate the impacts of products and systems on individuals, the environment, and society.

#### Disposition Indicators:

- Assess the impacts of products and systems.
- Follow safe practices and procedures in the use of tools and equipment.
- Judge the relative strengths and weaknesses of a designed product from a consumer perspective.
- Exhibit respect by properly applying tools and equipment to the processes for which they were designed.

## RUBRIC FOR STANDARD 4

Based upon the explanations and assessments submitted for Standard 4, an informed judgment will be made using the Rubric format below.

### UNACCEPTABLE

There is limited or no evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### ACCEPTABLE

There is adequate evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### TARGET

There is extensive evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### Knowledge Indicators:

- **Select design problems, including establishing criteria and constraints of the problem.**
- **Evaluate a design, assessing the success of a design solution and develop proposals for design improvements.**
- **Analyze a designed product and identify the key components of how it works and how it was made.**
- **Operate and maintain technological products and systems.**

*Assessment materials* should contain evidence that candidates understand the processes for solving human problems, identifying design criteria and constraints, assessing a designed product and how it works, using and maintaining technological tools and materials, etc.

### Performance Indicators:

- **Develop and model a design solution.**
- **Complete an assessment to evaluate merits of design solution.**
- **Operate a technological device system.**
- **Diagnose a malfunctioning system, restore the system, and maintain the system.**
- **Investigate the impacts of products and systems on individuals, the environment, and society.**

*Assessment materials* should contain evidence that candidates understand the process of creating a design solution, testing and evaluating design solutions, modeling a design solution, monitoring and modification of the design, and diagnosing, adjusting and repairing of a malfunctioning system.

### Disposition Indicators:

- **Assess the impacts of products and systems.**
- **Follow safe practices and procedures in the use of tools and equipment.**
- **Judge the relative strengths and weaknesses of a designed product from a consumer perspective.**
- **Exhibit respect by properly applying tools and equipment to the processes for which they were designed.**

*Assessment materials* should contain evidence that candidates understand safe utilization of tools and equipment in the laboratory, determining the impacts of designed products, determining if products are usable in society, using correct tools and equipment in the laboratory, etc

**Explanation:** In the space below, and by including appendices, explain how your technology education teacher program meets Standard 4 by describing appropriate assessment materials and student experiences related to the indicators above. *Add as much text as needed by expanding the space below.*

## STANDARD 5 — THE DESIGNED WORLD

Technology education teacher candidates develop and understanding of the designed world.

### INDICATORS:

The following knowledge, performance, and disposition indicators provide guidance to better understand the scope of Standard 5.

The program prepares technology education teacher candidates who can:

#### Knowledge Indicators:

- Identify various medical technologies as part of the designed world.
- Analyze various agricultural and related biotechnologies as part of the designed world.
- Analyze the principles, concepts and applications of energy and power technologies.
- Describe the principles, concepts and applications of information and communication technologies.
- Analyze various transportation technologies that a part of the designed world.
- Illustrate the principles, concepts, and applications of manufacturing technologies.
- Demonstrate the principles, concepts, and applications of construction technologies.

#### Performance Indicators:

- Select and use appropriate technologies in a variety of contexts including medical, agricultural and related biotechnologies, energy and power applications, information and communications, transportation, manufacturing, and construction.

#### Disposition Indicators:

- Defend the positive and negative aspects of technology in a variety of contexts including medical, agricultural and related biotechnologies, energy and power applications, information and communications, transportation, manufacturing, and construction.

## RUBRIC FOR STANDARD 5

Based upon the explanations and assessments submitted for Standard 5, an informed judgment will be made using the Rubric format below.

### UNACCEPTABLE

There is limited or no evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### ACCEPTABLE

There is adequate evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### TARGET

There is extensive evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### Knowledge Indicators:

- **Identify various medical technologies as part of the designed world.**
- **Analyze various agricultural and related biotechnologies as part of the designed world.**
- **Analyze the principles, concepts and applications of energy and power technologies.**
- **Describe the principles, concepts and applications of information and communication technologies.**
- **Analyze various transportation technologies that a part of the designed world.**
- **Illustrate the principles, concepts, and applications of manufacturing technologies.**
- **Demonstrate the principles, concepts, and applications of construction technologies.**  
*Assessment materials* should contain evidence that candidates understand medical technology applications, biotechnology and agricultural technology advances, laws of energy conservation and energy resources, efficiency of power systems, communications technology systems such as encoding, transmitting, and receiving information, transportation technologies inland, marine, atmospheric, and space systems, manufacturing system advances, construction processes and procedures, etc.

### Performance Indicators:

- **Select and use appropriate technologies in a variety of contexts including medical, agricultural and related biotechnologies, energy and power applications, information and communications, transportation, manufacturing, and construction.**  
*Assessment materials* should contain evidence that candidates understand designing and using products and systems in medical, agricultural, biotechnology, energy and power, communications, transportation, manufacturing, and construction technologies.

### Disposition Indicators:

- **Defend the positive and negative aspects of technology in a variety of contexts including medical, agricultural and related biotechnologies, energy and power applications, information and communications, transportation, manufacturing, and construction.**  
*Assessment materials* should contain evidence that candidates understand the analysis and evaluation of products and systems in medical agricultural, biotechnology, energy and power, communications, transportation, manufacturing, and construction technologies.

**Explanation:** In the space below, and by including appendices, explain how your technology education teacher program meets Standard 5 by describing appropriate assessment materials and student experiences related to the indicators above. *Add as much text as needed by expanding the space below.*

## STANDARD 6 — CURRICULUM

Technology education teacher candidates design, implement, and evaluate curricula based upon Standards for Technological Literacy.

### INDICATORS:

The following knowledge, performance, and disposition indicators provide guidance to better understand the scope of Standard 6.

The program prepares technology education teacher candidates who can:

#### Knowledge Indicators:

- Identify appropriate content for the study of technology at different grade levels
- Integrate technological content with other fields of study.
- Identify curriculum and instructional materials that enable effective delivery when teaching about technology.

#### Performance Indicators:

- Engage in long-term planning that results in an articulated curriculum based on Standards for Technological Literacy for Grades K-12 or equivalent.
- Design a technology curriculum that integrates content from other fields of study.
- Improve a technology curriculum by making informed decisions using multiple sources of information.
- Incorporate up-to-date technological developments into the technology curriculum.
- Implement a technology curriculum that systemically expands the technological capabilities of the student.

#### Disposition Indicators:

- Demonstrate sensitivity to cultural and ethnic diversity and gender issues when selecting, developing, and evaluating curriculum and instructional materials.

## RUBRIC FOR STANDARD 6

Based upon the explanations and assessments submitted for Standard 6, an informed judgment will be made using the Rubric format below.

### UNACCEPTABLE

There is limited or no evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### ACCEPTABLE

There is adequate evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### TARGET

There is extensive evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### Knowledge Indicators:

- **Identify appropriate content for the study of technology at different grade levels.**
- **Integrate technological content with other fields of study.**
- **Identify curriculum and instructional materials that enable effective delivery when teaching about technology.**

*Assessment materials* should contain evidence that candidates understand developing a curriculum that shows the relationship between technology and other disciplines and use of appropriate instructional materials to enhance the delivery of technology content.

### Performance Indicators:

- **Engage in long-term planning that results in an articulated curriculum based on Standards for Technological Literacy for Grades K-12 or equivalent.**
- **Design a technology curriculum that integrates content from other fields of study.**
- **Improve a technology curriculum by making informed decisions using multiple sources of information.**
- **Incorporate up-to-date technological developments into the technology curriculum.**
- **Implement a technology curriculum that systemically expands the technological capabilities of the student.**

*Assessment materials* should contain evidence that candidates understand designing an interdisciplinary and articulated technology curriculum, getting input for the stakeholders, business, industry, and other leaders, developing a technologically up-to-date curriculum, designing a curriculum that builds upon the students technological background, and designing curriculum that uses a variety of sources for gathering information.

### Disposition Indicators:

- **Demonstrate sensitivity to cultural and ethnic diversity and gender issues when selecting, developing, and evaluating curriculum and instructional materials.**

*Assessment materials* should contain evidence that candidates understand designing a technology curriculum and the instructional materials that are sensitive to cultural diversity and gender issues in the study of technology.

**Explanation:** In the space below, and by including appendices, explain how your technology education teacher program meets Standard 6 by describing appropriate assessment materials and student experiences related to the indicators above. Add as much text as needed by expanding the space below.

## STANDARD 7 — INSTRUCTIONAL STRATEGIES

Technology education teacher candidates use a variety of effective teaching practices that enhance and extend learning of technology.

### INDICATORS:

The following knowledge, performance, and disposition indicators provide guidance to better understand the scope of Standard 7.

The program prepares technology education teacher candidates who can:

#### Knowledge Indicators:

- Base instruction on contemporary teaching strategies that are consistent with Standards for Technological Literacy.
- Apply principles of learning and consideration of student differences to the delivery of instruction.
- Select and use a variety of instructional strategies to maximize student learning about technology.

#### Performance Indicators:

- Apply appropriate materials, tools, equipment, and processes to enhance student learning about technology.
- Assess instructional strategies to improve teaching and learning in the technology classroom by using self-reflection, student learning outcomes, and other assessment techniques.

#### Disposition Indicators:

- Exhibit an enthusiasm for teaching technology by creating meaningful and challenging technology learning experiences that lead to positive student attitudes toward the study of technology.

## RUBRIC FOR STANDARD 7

Based upon the explanations and assessments submitted for Standard 7, an informed judgment will be made using the Rubric format below.

### UNACCEPTABLE

There is limited or no evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### ACCEPTABLE

There is adequate evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### TARGET

There is extensive evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### Knowledge Indicators:

- **Base instruction on contemporary teaching strategies that are consistent with Standards for Technological Literacy.**
- **Apply principles of learning and consideration of student differences to the delivery of instruction.**
- **Select and use a variety of instructional strategies to maximize student learning about technology.**  
*Assessment materials* should contain evidence that candidates understand the selection of various instructional strategies such as cooperative learning, guided practice, modeling, conceptual learning, simulation, games, inquiry, problem solving, etc. that best fits the technology content being studied and how instructional strategies and learning theory changes with student differences.

### Performance Indicators:

- **Apply appropriate materials, tools, equipment, and processes to enhance student learning about technology.**
- **Assess instructional strategies to improve teaching and learning in the technology classroom by using self-reflection, student learning outcomes, and other assessment techniques.**  
*Assessment materials* should contain evidence that candidates understand appropriate laboratory and classroom development (design of the laboratory, tools, equipment, materials, etc.) that can enhance technological learning, and assessment of instructional strategies that measure and monitor teaching effectiveness and student learning.

### Disposition Indicators:

- **Exhibit an enthusiasm for teaching technology by creating meaningful and challenging technology learning experiences that lead to positive student attitudes toward the study of technology.**  
*Assessment materials* should contain evidence that candidates understand the selection of instructional strategies and the development of meaningful and challenging learning experiences that create an enthusiastic classroom environment and positive attitude within the students about the study of technology.

**Explanation:** In the space below, and by including appendices, explain how your technology education teacher program meets Standard 7 by describing appropriate assessment materials and student experiences related to the indicators above. *Add as much text as needed by expanding the space below.*

## STANDARD 8—LEARNING ENVIRONMENT

Technology education teacher candidates design, create, and manage learning environments that promote technological literacy.

### INDICATORS:

The following knowledge, performance, and disposition indicators provide guidance to better understand the scope of Standard 8.

The program prepares technology education teacher candidates who can:

#### Knowledge Indicators:

- Create a rich learning environment that provides for varied educational experiences in the technology classroom and laboratory.
- Identify a learning environment that encourages, motivates, and supports student learning, innovation, design, and risk-taking.

#### Performance Indicators:

- Design a learning environment that establishes student behavioral expectations that support an effective teaching and learning environment.
- Create a flexible learning environment that is adaptable for the future.

#### Disposition Indicators:

- Exhibit safe technology laboratory practice by designing, managing, and maintaining a physically safe technology-learning environment.

## RUBRIC FOR STANDARD 8

Based upon the explanations and assessments submitted for Standard 8, an informed judgment will be made using the Rubric format below.

### UNACCEPTABLE

There is limited or no evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### ACCEPTABLE

There is adequate evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### TARGET

There is extensive evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### Knowledge Indicators:

- **Create a rich learning environment that provides for varied educational experiences in the technology classroom and laboratory.**
- **Identify a learning environment that encourages, motivates, and supports student learning, innovation, design, and risk taking.**  
*Assessment materials* should contain evidence that candidates understand the study and development of a technology classroom/laboratory or other environments that allow for different instructional experiences, study of new innovations, and ease of maintaining the learning environment, all which help to enhance student learning and risk-taking.

### Performance Indicators:

- **Design a learning environment that establishes student behavioral expectations that support an effective teaching and learning environment.**
- **Create a flexible learning environment that is adaptable for the future.**  
*Assessment materials* should contain evidence that candidates understand maintaining discipline in the laboratory, developing barrier-free classrooms/laboratories, designing flexible learning environments for the future, etc.

### Disposition Indicators:

- **Exhibit safe technology laboratory practice by designing, managing, and maintaining a physically safe technology-learning environment.**  
*Assessment materials* should contain evidence that candidates understand laboratory safety, development of safety policies and procedures, safe practice in the laboratory, and the importance of having a safe work environment.

**Explanation:** In the space below, and by including appendices, explain how your technology education teacher program meets Standard 8 by describing appropriate assessment materials and student experiences related to the indicators above. Add as much text as needed by expanding the space below.

## STANDARD 9 — STUDENTS

Technology education teacher candidates understand differences among students and how they learn.

### INDICATORS:

The following knowledge, performance, and disposition indicators provide guidance to better understand the scope of Standard 9.

The program prepares technology education teacher candidates who can:

#### Knowledge Indicators:

- Design technology experiences for students of different ethnic and socioeconomic backgrounds, gender, and exceptionalities.
- Identify how students learn technology most effectively by integrating current research about hands-on learning and learning about the content of technology.

#### Performance Indicators:

- Create technology experiences for students with different abilities, interests, and ages on learning about the content of technology.

#### Disposition Indicators:

- Develop productive relationships with students so that they become more active learners about technology.

## RUBRIC FOR STANDARD 9

Based upon the explanations and assessments submitted for Standard 9, an informed judgment will be made using the Rubric format below.

### UNACCEPTABLE

There is limited or no evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### ACCEPTABLE

There is adequate evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### TARGET

There is extensive evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### Knowledge Indicators:

- **Design technology experiences for students of different ethnic and socioeconomic backgrounds, gender, and exceptionalities.**
- **Identify how students learn technology most effectively by integrating current research about hands-on learning and learning about the content of technology.**  
*Assessment materials* should contain evidence that candidates understand research on diverse student needs, gender, psychological and physiological barriers effects, etc.

### Performance Indicators:

- **Create technology experiences for students with different abilities, interests, and ages on learning about the content of technology.**  
*Assessment materials* should contain evidence that candidates understand learning theory, current brain research, student needs, etc.

### Disposition Indicators:

- **Develop productive relationships with students so that they become more active learners about technology.**  
*Assessment materials* should contain evidence that candidates understand the advantages and disadvantages of student/teacher relationships and how current research findings relate to student relationships.

**Explanation:** In the space below, and by including appendices, explain how your technology education teacher program meets Standard 9 by describing appropriate assessment materials and student experiences related to the indicators above. Add as much text as needed by expanding the space below.

## STANDARD 10 — PROFESSIONAL GROWTH

Technology education teacher candidates understand and value the importance of engaging in comprehensive and sustained professional growth to improve the teaching of technology.

### INDICATORS:

The following knowledge, performance, and disposition indicators provide guidance to better understand the scope of Standard 10.

The program prepares technology education teacher candidates who can:

#### Knowledge Indicators:

- Develop a continuously updated and informed background about the knowledge base and processes of technology.
- Continuously build upon effective instructional practices that promote technological literacy.

#### Performance Indicators:

- Apply various marketing principles and concepts to promote technology education and the study of technology.
- Collaborate with other candidates and professional colleagues to promote professional growth.

#### Disposition Indicators:

- Value continuous professional growth.
- Demonstrate the importance of professionalism by promoting technology organizations for students in the technology classroom.

## RUBRIC FOR STANDARD 10

Based upon the explanations and assessments submitted for Standard 10, an informed judgment will be made using the Rubric format below.

### UNACCEPTABLE

There is limited or no evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### ACCEPTABLE

There is adequate evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### TARGET

There is extensive evidence within the assessments that the technology education teacher candidate possesses the knowledge about the indicators and overall standard.

### Knowledge Indicators:

- **Develop a continuously updated and informed knowledge base and processes of technology.**
- **Continuously build upon effective instructional practices that promote technological literacy.**  
*Assessment materials* should contain evidence that candidates understand the importance of how to keep current about the knowledge base and processes of technology and how to continuously improve the instructional practices in the technology education classroom through conferences, meetings, and other in-service activities.

### Performance Indicators:

- **Apply various marketing principles and concepts to promote technology education and the study of technology.**
- **Collaborate with other candidates and professional colleagues to promote professional growth.**  
*Assessment materials* should contain evidence that candidates understand designing projects that focus on collaboration with peers, administration and school boards, improving the image and perception of technology education through marketing (brochures, etc.), advisory boards, laboratory designs, etc.

### Disposition Indicators:

- **Value continuous professional growth.**
- **Demonstrate the importance of professionalism by promoting technology organizations for students in the technology classroom.**  
*Assessment materials* should contain evidence that candidates understand the importance of providing leadership through personal growth, professional growth, self-assessment, professional organizations, promoting technology clubs and student organizations (TSA), student competitions, etc.

**Explanation:** In the space below, and by including appendices, explain how your technology education teacher program meets Standard 10 by describing appropriate assessment materials and student experiences related to the indicators above. Add as much text as needed by expanding the space below.