

10007 TECHNOLOGY EDUCATION PROGRAM APPROVAL STANDARDS

10007.1 THE NATURE OF TECHNOLOGY. Technology teacher education program 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 10007.1.

The program prepares technology teacher education 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.

10007.2 TECHNOLOGY AND SOCIETY. Technology teacher education program 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 10007.2.

The program prepares technology teacher education 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.

10007.3 DESIGN. Technology teacher education program 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 10007.3.

The program prepares technology teacher education candidates who can:

Knowledge Indicators:

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

Performance Indicators:

- Apply the process of troubleshooting, research and development, invention, innovation, and experimentation in developing solutions 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.

10007.4 — ABILITIES FOR A TECHNOLOGICAL WORLD. Technology teacher education program candidates develop abilities for a technological world within the contexts of the *Designed World*.

INDICATORS:

The following knowledge, performance, and disposition indicators provide guidance to better understand the scope of 10007.4.

The program prepares technology teacher education candidates who can:

Knowledge Indicators:

- Select design problems and include appropriate criteria and constraints for each 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:

- Develop and model a design solution.
- Complete an assessment to evaluate merits of design solution.
- Operate a technological device and/or 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.

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.
- Design and use instructional activities that emphasized solving real world open-ended problems.

10007. 5 — THE DESIGNED WORLD. Technology teacher education program candidates develop an understanding of the Designed World.

INDICATORS:

The following knowledge, performance, and disposition indicators provide guidance to better understand the scope of 10007.5.

The program prepares technology teacher education candidates who can:

Knowledge Indicators:

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

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:

- Effectively use and improve technology in a variety of contexts including medical, agricultural and related biotechnologies, energy and power applications, information and communications, transportation, manufacturing, and construction.

10007.6 — CURRICULUM. Technology teacher education program 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 10007.6.

The program prepares technology teacher education candidates who can:

Knowledge Indicators:

- Identify appropriate content for the study of technology at different grade levels.
- Integrate technological curriculum content from other fields of study.
- Identify curriculum and instructional materials and resources 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 technology curricula and programs that integrate content from other fields of study.
- Improve the 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, ethnic diversity, special needs, interest, abilities, and gender issues when selecting, designing, or evaluating curriculum and instructional materials.

10007. 7 — INSTRUCTIONAL STRATEGIES. Technology teacher education program 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 10007.7.

The program prepares technology teacher education 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 diversity to the delivery of instruction.
- Compare a variety of instructional strategies to maximize student learning about technology.
- Describe a variety of student assessments appropriate for different instructional materials.

Performance Indicators:

- Apply appropriate instructional technology materials, tools, equipment, and processes to enhance student learning about technology instruction.
- 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.

10007.8—LEARNING ENVIRONMENTS. Technology teacher education program 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 10007.8.

The program prepares technology teacher education candidates who can:

Knowledge Indicators:

- Recognize rich learning environments that provide for varied educational experiences in the technology classroom and laboratory.
- Identify learning environments that encourage, motivate, and support student learning, innovation, design, and risk taking.

Performance Indicators:

- Design learning environments that establish student behavioral expectations that support an effective teaching and learning environment.
- Create flexible learning environments that are adaptable for the future.

Disposition Indicators:

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

10007.9 — STUDENTS. Technology teacher education program candidates understand students as learners, and how commonality and diversity affect learning.

INDICATORS:

The following knowledge, performance, and disposition indicators provide guidance to better understand the scope of 10007.9.

The program prepares technology teacher education candidates who can:

Knowledge Indicators:

- Design technology experiences for students of different ethnic, socioeconomic backgrounds, gender, age, interest, 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 about the content of technology.

Disposition Indicators:

- Develop productive relationships with students so that they become active learners about technology and enhance their human growth and development.

10007.10 — PROFESSIONAL GROWTH. Technology teacher education program 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 teacher education candidates who can:

Knowledge Indicators:

- Demonstrate a continuously updated and informed knowledge base about the 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 and professional development activities.
- Become actively involved in professional organizations and attend professional development activities to become better prepared to teach technology education.
- Develop a professional development plan for self-improvement in curriculum and instruction in technology education.

Disposition Indicators:

- Value continuous professional growth through involvement in a variety of professional development activities.
- Demonstrate the importance of professionalism by promoting technology organizations for students in the technology classroom.
- Reflect upon their teaching to improve and enhance student learning.

10007.11 — Candidate Assessment Data. Candidate assessment data are regularly and systematically collected, compiled, aggregated, summarized, and analyzed to improve candidate performance, program quality, and program operations. The program disaggregates candidate assessment data when candidates are in alternate route, off-campus, and distance learning programs.

History:

Revised July 2007, effective July 1, 2008, mandatory for visits July 1, 2010.

Revised August 12, 2005, mandatory for visits July 1, 2006.

Revised January 20, 2004, mandatory for visits July 1, 2006.

Effective date March 2000, mandatory for visits March 2002.