

006.34 Information Technology

006.34A Grade Levels: PK-12

006.34B Endorsement Type: Supplemental

006.34C Persons with this endorsement may teach information technology courses.

006.34D Certification Endorsement Requirements: This endorsement requires a minimum of 15 semester hours in information technology courses.

006.34E Endorsement Program Requirements: Nebraska teacher education institutions offering this endorsement must have on file, within the institution, a plan which identifies the courses and the course completion requirements which the institution utilizes to grant credit toward completion of this endorsement.

***THE FOLLOWING ARE RECOMMENDED GUIDELINES FOR  
INCLUSION AS PART OF THE INSTITUTION'S PLAN  
UNDER THIS ENDORSEMENT.***

Through the courses identified in its plan, the institution must provide candidates for this endorsement with opportunities to demonstrate the dispositions and competencies required by the following guidelines:

**Standard 1.** Demonstrate knowledge of ethical, human, legal and social issues, which include privacy, accessibility, copyright, intellectual property, plagiarism, and information validity.

**Standard 2.** Demonstrate knowledge of classroom and instructional management methodologies using appropriate materials, methods, resources, and curricula for teaching information technology, which include:

- Element 1. Instructional strategies that create authentic and meaningful learning experiences;
- Element 2. Instructional strategies for dealing with learning styles and diverse populations; and

Element 3. Effective methods of assessment and evaluation with appropriate feedback techniques.

**Standard 3.** Demonstrate knowledge of methods and skills appropriate to planning and designing learning environments, which include:

Element 1. Classroom design that includes access to technical resources and tools;  
and

Element 2. Management skills and techniques.

**Standard 4.** Demonstrate knowledge and application of basic programming concepts, that include:

Element 1. Computational thinking and problem solving;

Element 2. Design principles and common programming structures;

Element 3. Procedural and object-oriented programs;

Element 4. Application development tools;

Element 5. Program solutions coded in a common high-level language; and

Element 6. Strategies for testing, troubleshooting, and debugging code and other computational artifacts;

Element 7. Data processing and analysis; and

Element 8. Use of appropriate communication forms to explain computational artifacts.

**Standard 5.** Demonstrate practical knowledge and skills with computing systems, networks, and other relevant infrastructure which include:

Element 1. Operating systems;

Element 2. Computer network systems;

Element 3. Organization and architecture of computer systems and software; and

Element 4. Security of network hardware, software, and data.

**Standard 6.** Demonstrate a basic knowledge of interactive media, which includes:

Element 1. Design and implementation of linked web pages using HTML and CSS;

Element 2. Effective use of digital media and design applications, including video and photo editing tools;

Element 3. Social media; and

Element 4. Database design, development, and management.

**Standard 7.** Demonstrate the ability to systematically identify and evaluate existing and emerging technologies and their impact on society, which include:

- Element 1. Identifying and classifying emerging technologies;
- Element 2. Systematically assessing the potential impacts of emerging technologies;
- Element 3. Adopting strategies for learning about emerging technologies; and
- Element 4. Applying usability and ergonomic principles that impact technology adoption.

Guidelines based, in part on National Standards for Business Education (2013), Computer Science Teachers Association (CSTA) K-12 Computer Science Standards (2011), and K-12 Computer Science Frameworks (2016).