

006.34 Information Technology

006.34A Grade Levels: PK-12

006.34B Endorsement Type: Supplemental ~~endorsement only. This endorsement cannot exist by itself on a certificate, but is added to a certificate only in the presence of other endorsements which may have been acquired earlier or concurrently.~~

006.34C Persons with this endorsement may teach information technology courses. ~~in grades prekindergarten through grade 12.~~

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: ~~shall prepare prospective teachers to be able to:~~

Standard 1. Demonstrate knowledge of ethical, human, legal and social issues, which ~~may~~ 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 ~~may~~ 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 **may** 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 **may** 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 in the areas of selection, installation, management, and maintenance of infrastructure for information support and services, with computing systems, networks, and other relevant infrastructure which **may** 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; and~~

~~Element 3. Database design, development, and management;~~

~~Element 4. Technical research and documentation;~~

~~Element 5. Troubleshooting strategies;~~

~~Element 6. Communication skills;~~

~~Element 7. Emerging hardware and software technologies;~~

~~Element 9. Ergonomic principles that foster a healthy and productive environment.~~

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

- Element 1. Design and implementation of linked web pages using HTML and CSS; Web-based media and applications;
- Element 2. Effective use of digital media and design applications, including video and photo editing tools; Multimedia tools; and
- Element 3. Social Digital 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).

~~Standard 7. Demonstrate a basic knowledge of network systems, which may include:
 Element 1. Network concepts and operating systems;
 Element 2. Management and security for networked environments; and
 Element 3. Emerging technologies.~~

**NCTE Ad Hoc Committee – Business Education
 (Basic Business, BMIT, Information Technology)**

**Friday, November 4, 2016, Country Inn & Suites, 5353 N. 27th Street, Lincoln, NE 68521
 9:30 A.M.**

Tuesday, November 29, 2016 Zoom Meeting 3:00 P.M. – 5:00 P.M.

Ad Hoc Committee Requirements	Possible Ad Hoc Committee Members
Ad Hoc Chair – Collaboratively determined by NDE Team Leader responsible for the endorsement area and the NDE designee with responsibilities for NCTE coordination.	Bonnie Sibert, NDE and Jacqui Garrison, NDE (Co-Chairs)
Current Teachers— Currently endorsed and employed practitioners in approved or accredited public or private schools in the endorsement area at the grade levels under	<ol style="list-style-type: none"> 1. Darci Karr, Hastings HS darci.karr@hpstigers.org 2. Julie Hippen, LPS jhippen@lps.org 3. Lynn Hill, Millard South lmhill@mpsomaha.org 4. Deb Bulin, Thayer Central deb.bulin@thayercentral.org

consideration.	
Faculty Members— Faculty members from a college of DOE who are teaching professional education courses or serve as the Certification Official at an approved educator preparation institution.	<ol style="list-style-type: none"> 1. Patricia Arneson, WSC paarnes1@wsc.edu 2. Mona Schoenrock, UNL rschoenrock2@unl.edu 3. Ellie Kunkel, PSC ekunkel@peru.edu 4. Brian Dorn, UNO bdorn@unomaha.edu 5. Sherri Harms, UNK harmssk@unk.edu 6. Barb Limbach, CSC blimbach@csc.edu
Specialists in the Content Area— Might include Arts and Sciences college faculty or persons drawn from professional practice in the endorsement area.	<ol style="list-style-type: none"> 1. DeLayne Havlovic, OPS delayne.havlovic@ops.org 2. Cindy Baum, LPS cbaum2@lps.org
Administrators— Administrative or supervisory personnel from approved or accredited public or private schools with responsibility for supervision, leadership, or personnel functions at the grade levels and/or in the content area.	<ol style="list-style-type: none"> 1. Dan Novak, Elmwood-Murdock dnovak@emknights.org 2. James Kent, Dundy County jim@dctigers.org
NCTE Representation— Representation from the NCTE Standing Committee to which the endorsement has been assigned.	<ol style="list-style-type: none"> 1. Sue Evanich, Midland / NCTE Comm A and Cert Official evanich@midlandu.edu
NDE Representative with responsibilities related to the endorsement area. (This person may also serve as the Ad Hoc Chair.)	<ol style="list-style-type: none"> 1. N/A
Representatives of national/state specialty professional associations or professionals drawn from areas of employment related to the content area.	<ol style="list-style-type: none"> 1. Kelly Means, NSBEA President, OPS kelly.means@ops.org
Additional P-12 school practitioners or higher education faculty to equalize the representation between these two groups.	N/A
A NDE designee, who will be a non-voting member and serve as a consultant for the <i>ad hoc</i> committee.	Pat Madsen, NDE