

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. 27<sup>th</sup> 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 consideration.	<ol style="list-style-type: none"> <li>1. Darci Karr, Hastings HS <a href="mailto:darci.karr@hpstigers.org">darci.karr@hpstigers.org</a></li> <li>2. Julie Hippen, LPS <a href="mailto:jhippen@lps.org">jhippen@lps.org</a></li> <li>3. Lynn Hill, Millard South <a href="mailto:lmhill@mpsomaha.org">lmhill@mpsomaha.org</a></li> <li>4. Deb Bulin, Thayer Central <a href="mailto:deb.bulin@thayercentral.org">deb.bulin@thayercentral.org</a></li> </ol>
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"> <li>1. Patricia Arneson, WSC <a href="mailto:paarnes1@wsc.edu">paarnes1@wsc.edu</a></li> <li>2. Mona Schoenrock, UNL <a href="mailto:rschoenrock2@unl.edu">rschoenrock2@unl.edu</a></li> <li>3. Ellie Kunkel, PSC <a href="mailto:ekunkel@peru.edu">ekunkel@peru.edu</a></li> <li>4. Brian Dorn, UNO <a href="mailto:bdorn@unomaha.edu">bdorn@unomaha.edu</a></li> <li>5. Sherri Harms, UNK <a href="mailto:harmssk@unk.edu">harmssk@unk.edu</a></li> <li>6. Barb Limbach, CSC <a href="mailto:blimbach@csc.edu">blimbach@csc.edu</a></li> </ol>
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"> <li>1. DeLayne Havlovic, OPS <a href="mailto:delayne.havlovic@ops.org">delayne.havlovic@ops.org</a></li> <li>2. Cindy Baum, LPS <a href="mailto:cbaum2@lps.org">cbaum2@lps.org</a></li> </ol>
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"> <li>1. Dan Novak, Elmwood-Murdock <a href="mailto:dnovak@emknights.org">dnovak@emknights.org</a></li> <li>2. James Kent, Dundy County <a href="mailto:jim@dctigers.org">jim@dctigers.org</a></li> </ol>
NCTE Representation— Representation from the NCTE Standing Committee to which the endorsement has been assigned.	1. Sue Evanich, Midland / NCTE Comm A and Cert Official <a href="mailto:evanich@midlandu.edu">evanich@midlandu.edu</a>
NDE Representative with responsibilities related to the endorsement area. (This person may also serve as the Ad Hoc Chair.)	1. N/A
Representatives of national/state specialty professional associations or professionals drawn from areas of employment related to the content area.	1. Kelly Means, NSBEA President, OPS <a href="mailto:kelly.means@ops.org">kelly.means@ops.org</a>
Additional P-12 school practitioners or higher education faculty to equalize the representation between these two groups.	N/A

**PROPOSED REDLINE VERSION**

**Nov. 4, 2016 / Edited Copy**

**Nov. 29, 2016 Ad Hoc**

**Information Technology  
Endorsement Guidelines  
To Accompany Rule 24  
(Adopted by the State Board  
of Education on \_\_/\_\_/\_\_)**

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
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