

Multi-Age Computer Information Science

2007 Ohio Program Standards (Grades PreK-12)

Valid for teaching learners from ages three to twenty-one and pre-kindergarten through grades twelve in the area of computer information science. Preparation in the teaching field should constitute at least a major or its equivalent with sufficient advanced coursework in all areas to be taught as specified by the teacher preparation institution and approved by the Ohio Board of Regents.

Ohio Educator Licensure Standards for Multi-Age Computer Information Science

Introduction

The Ohio Educator Licensure Program Standards for Multi-Age Computer Information Science programs were developed by an advisory committee after a thorough review of the following documents: 1) National Council for Accreditation of Teacher Education (NCATE) /International Technology Education Association (ITEA)/Council on Technology Teacher Education (CTTE) Program Standards (2003) Programs for the Preparation of Technology Education Teachers. 2) International Society for Technology Education (ISTE) Educational Computing and Technology Standards for Technology Facilitation Initial Endorsement (2001). 3) Association for Educational Communications and Technology (AECT) Standards for the Accreditation of Initial Programs in Educational Communications and Instructional Technology (ECIT) (2000).

The standards were reviewed by an advisory committee consisting of Computer Information Science representatives from four-year institutions of public and private teacher preparation institutions of higher education, consultants from the Ohio Department of Education and a representative from Columbus Public Schools. We wish to acknowledge the following individuals who served on the advisory committee:

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Performance-based standards

Ohio requires performance-based programs and program reports which must include candidate performance assessments. Performance-based assessments should be appropriate for the standards including multiple forms of measurement, and measurement at multiple points over a candidate's progression through a program.

Licensure Rule 3301-24-05 (D) (4)

Multi-age license, valid for teaching learners from ages three through twenty-one and pre-kindergarten through grade twelve in the curriculum areas named in such license. Preparation in the teaching field shall constitute at least an academic major or its equivalent with sufficient advanced coursework in all areas to be taught as specified by the teacher preparation institution and approved by the Ohio Department of Education. A minimum of three semester hours in the teaching of reading in the content area shall be required for the provisional or professional multi-age license.

State Standards

On October 11, 2005 the State Board of Education adopted the Ohio Standards for the Teaching Profession (2005 edition) as the state standards for Ohio replacing INTASC standards. The Ohio Standards for the Teaching Profession can be found at:

<http://esb.ode.state.oh.us/communications/standards.aspx>

Other information required

- A minimum of an academic major (or equivalent) in Computer Information Science;
- 3 semester credit hours in reading in the content area; and
- Alignment with Ohio K-12 Content Standards for Technology
- School operating standards
- Value-Added Progress Dimension
- 12 weeks student teaching and 100 hours minimum of field experience

MULTI-AGE COMPUTER INFORMATION SCIENCE STANDARDS

Standard 1. Candidates have knowledge of the foundations of computer information science.

- 1.1 Candidates know the history of computing, including the principles of media literacy and the impact of media and technology on society.
- 1.2 Candidates know the terminology, equipment, software, and state-of-the-art programming related to the production and integration of multimedia technologies.
- 1.3 Candidates know the terminology, software and processes related to the use and integration of productivity tools including databases, spreadsheets, graphical organizers, and word processing to manage information and problem solve.
- 1.4 Candidates know the terminology, software, and processes related to the use and integration of communication tools, including personal, group, distance learning and other web-based tools.
- 1.5 Candidates are aware of and know systems interoperability including operating systems (linux, windows, unix, Macintosh) metacontent standards (SCORM), IMS standards and other cross-platform technologies.
- 1.6 Candidates identify appropriate technology tools and apply them to research and solve problems in a variety of disciplines or academic areas.
- 1.7 Candidates use technology to search electronically for information and to manage information. They evaluate information resources to determine their accuracy, authority, objectivity, currency, and coverage, including intellectual property rights.
- 1.8 Candidates are able to locate information from a variety of Internet resources, including but not limited to, the world wide web search engines, Listserv archives, web blogs, news organization sites, etc. They include the use of logic to narrow search and evaluate the information in regards to accuracy, reliability and bias.
- 1.9 Candidates know the ethical, legal, and social implications of the use of computers in society including, but not limited to privacy, intellectual property, equitable access to computing resources, impact upon employment opportunities, gender issues, and the effects of rapid change on society.
- 1.10 Candidates use tools for design, import, export, manipulation, and creation of computer graphics such as images, photos, and animations.
- 1.11 Candidates develop procedural and object-oriented programs to problem-solve using data abstraction, data structures, file input/output, and design methodology, in the language used for Advanced Placement test including the libraries outlined in the Appendix of the AP Computer Science course description.
- 1.12 Candidates know markup languages such as html, including the use of a language for client side scripting, the use of web protocols including at least one language for server side scripting, and the use of a database for interactive presentation and collection of data via a web interface.

1.13 Candidates plan, configure and support a modern network environment.

1.14 Candidates select components and tools necessary to diagnose and troubleshoot a personal computer or network server including common operating systems used. They perform computer support functions including system and network configuration and assist computer users.

Standard 2. Candidates have knowledge of instructional strategies as they relate to computer information science.

2.1 Candidates know the concepts, theories, and research about teaching and learning.

2.2 Candidates relate the interaction of the subject matter with effective teaching strategies and activities.

2.3 Candidates prepare lessons/instruction based on knowledge of subject matter and students aligned to curriculum goals to enable student learning.

2.4 Candidates develop and provide meaningful and varied learning experiences to facilitate learning and promote critical-thinking and problem-solving skills.

2.5 Candidates make connections to past learning, present learning, and build a bridge to future learning.

2.6 Candidates use instructional technologies appropriate to content and integrate technology with content knowledge to facilitate learning.

Standard 3. Candidates have knowledge of the learner, equity, efficacy, and the environment.

3.1 Candidates value and show commitment toward all students, families, communities, and colleagues to enhance student development, motivation and learning.

3.2 Candidates support students and demonstrate knowledge of the cultural context of the school as it relates to equity, diversity, and efficacy.

3.3 Candidates have knowledge of students, an understanding of their behaviors, and an awareness of the forces that influence teaching and learning.

3.4 Candidates understand and integrate knowledge, skills, and dispositions related to diversity throughout curriculum and instruction.

3.5 Candidates motivate and engage student learning in a safe, nurturing environment that promotes critical thinking skills.

3.6 Candidates know the diverse ways in which students learn and provide appropriate instruction.

Standard 4. Candidates have knowledge of assessment strategies for computer information science.

4.1 Candidates use assessment strategies, diagnoses, and response to enhance student learning.

4.2 Candidates know the value of multiple assessment strategies to evaluate student progress.

4.3 Candidates use data and research to advance the quality of their own professional practice in terms of student growth and achievement.

4.4 Candidates use technology for assessment of student learning and professional growth.

Standard 5. Candidates have knowledge of professional development.

5.1 Candidates use methods of inquiry to problem-solve, reflect, and evaluate the outcomes of teaching.

5.2 Candidates understand the collaborative nature of teaching within the school community, and are collegial.

5.3 Candidates use knowledge of ethics, legal issues, and policy issues to make sound, critically thought out choices governing students.

5.4 Candidates are ongoing, active learners who instill and model a passion for learning and pursue professional development to improve future performance.

5.5 Candidates seek on-going training in the application of emerging computer and information science technologies.

5.6 Candidates pursue leadership roles within the school context.

5.7 Candidates work and communicate with parents, family members, and school colleagues to support student learning.

Standard 6. Candidates have knowledge of field experiences and clinical practices as they relate to the teaching of computer information science.

6.1 Candidates understand the broad, environmental context of the school.

6.2 Candidates are responsible to the child as well as the community.

6.3 Candidates understand diverse populations within the school and their effect on the learning culture and how to be responsive to differing groups.

6.4 Candidates understand the importance of the physical learning environment.

6.5 Candidates understand the organizational make-up of the school setting, including departmentalization.

6.6 Candidates engage in planned activities that demonstrate computer literacy.

6.7 Candidates respond to stages of child development including discipline and creating an environment for student learning.

6.8 Candidates use curricular strategies.

6.9 Candidates use assessment for student learning.

6.10 Candidates understand the multi-faceted roles and responsibilities of the teacher.

6.11 Candidates recognize and support the collaborative nature of teaching.

6.12 Candidates use reflection for professional development.