

279 5-12 CTE Information Technology

b. Program requirements. Applicants must hold a valid Iowa teaching license with at least one additional teaching endorsement.

c. Content. A minimum of 12 semester hours of computer science to include coursework in the following:

(1) Data representation and abstraction to include primitive data types, static and dynamic data structures, and data types and stores.

Course #	Course Title	Institution	Semester Hr.	Year Completed

(2) Designing, developing, testing and refining algorithms to include proficiency in two or more programming paradigms.

Course #	Course Title	Institution	Semester Hr.	Year Completed

(3) Systems and networks to include operating systems, networks, mobile devices, and machine-level data representation.

Course #	Course Title	Institution	Semester Hr.	Year Completed

d. Methods course. A content area methods course is required pursuant to 13.29(1). The course should include the following effective teaching and learning strategies for information technology:

(1) Curriculum development including recognizing and defining real-world computational problems; computing concepts and constructs; developing and using abstractions; creating, testing, and refining computational artifacts; and problem-solving strategies in computer science.

(2) Project-based methodologies that support active and authentic learning, fostering an inclusive computing culture, collaborative groupings, and opportunities for creative and innovative thinking.

(3) Communication about computing including multiple forms of media.

(4) Digital citizenship including the social, legal, ethical, safe and effective use of computer hardware, software, peripherals, and networks.

Course #	Course Title	Institution	Semester Hr.	Year Completed

e. CTE methods.

(1) A minimum of six semester hours of career and technical curriculum and methods to include:

- 1. Foundations of career and technical education.**
- 2. Methods of career and technical education.**
- 3. Evaluation and assessment of career and technical programs.**

(2) The CTE methods coursework is not required if the educator holds another career and technical endorsement.

Course #	Course Title	Institution	Semester Hr.	Year Completed

Graded field experience (if needed)

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