

Teacher Credentialing for High School CS: Certification, Licensure, and Endorsement

QUESTION

Does my state have a process for credentialing high school computer science teachers, and if so, what is it?

TOOL DESCRIPTION

This tool provides an overview of teacher credentialing requirements and processes in the United States.

WHY DO YOU NEED TO KNOW THIS?

The shortage of qualified K-12 computer science teachers is well documented (U.S. Department of Education, 2014; Ni & Guzdial, 2012; Goode, 2007). Some states have initiated procedures to offer computer science credentials to new and in-service high school teachers.

HOW DOES THIS TOOL HELP?

This tool summarizes the state of high school credentialing across the United States. It includes information about teacher endorsement and licensure options for K-12 computer science teachers for each state, based on the the Computer Science Teachers Association (CSTA) report [Bugs in the System](#) (2013).

Before describing the state of computer science teaching requirements, it will help to define the following terms:

A **credential** is any type of documentation that indicates an individual's qualifications to teach in a particular jurisdiction. Licenses, certificates, and endorsements are all types of teaching credentials.

License and **certification** are credentials, and are terms often used interchangeably, depending on the state. Generally, a license or certification indicates an individual is allowed to serve as a classroom teacher.

An **endorsement** or **authorization** is a credential added to a license or certification. It serves as documentation that a teacher is able to teach a particular subject or grade. In many states, en-dorsements supplement a license: the license gives permission to serve as a classroom teacher, and the endorsement identifies the particular grades and/or subject areas the individual is permitted to teach. Both a license and an endorsement are needed to teach particular courses, and frequently individuals have multiple

In many states, the requirements to teach computer science at the high school and middle school levels are different.

TOOL CONTENT

Bugs in the System reports that 19 states and the District of Columbia provide a credential for teaching computer science at the secondary level, as shown on **Table 1**. Only two states, Arizona and Wisconsin, require a computer science credential for all teaching a computer science course. Many of the other 17 states and the District of Columbia provide a mechanism to obtain a computer science teaching credential but do not require it.

State	Credential Status
Arizona	Required
District Of Columbia	Offered, but not required
Florida	Offered, but not required
Georgia	Offered, but not required
Illinois	Offered, but not required
Kentucky	Offered, but not required
Louisiana	Required for AP Computer Science only
Maryland	Offered, but not required
Michigan	Required for AP Computer Science only
Mississippi	Required for AP Computer Science only
Montana	Required for AP Computer Science only
Nebraska	Offered, but not required
Nevada	Required for AP Computer Science only
North Dakota	Offered, but not required
Ohio	Required for AP Computer Science only
Oklahoma	Offered, but not required
Texas	Offered, but not required
Utah	Required for AP Computer Science only
Vermont	Offered, but not required
Virginia	Offered, but not required
Wisconsin	Required
Wyoming	Offered, but not required

Table 1: States that offer a process to earn a computer science credential

The specific requirements for each credential described in Table 1 are similar but not identical. Most states expect some amount of undergraduate-level computer science content courses (e.g. programming languages, data structures), measured in completed course-hours. Some states, such as Oklahoma and Texas, have content exams as gatekeepers to a credential.

Teaching Computer Science Without Computer Science Credentials

According to *Bugs In The System*, thirty states do not have a credential for computer science. However, teachers in these states—as well as those in some of the states listed above on **Table 1**—may be permitted to teach computer science courses based on other credentials they have. School leaders are advised to contact their relevant state agencies to determine the precise requirements needed to teach computer science in those states. We have summarized some of the non-standard state requirements below.

- In many states, such as Colorado, Connecticut, Delaware, and Montana, the high school department in which the course is offered determines the credential needs of the teacher. Thus, if a computer science course is offered in the mathematics department, the computer science teacher needs a mathematics teaching credential.
- In some states, such as Alabama, teachers with either a mathematics or science teaching license may teach computer science.
- In some states, such as Alabama and Georgia, computer science courses are offered as part of a career-and-technical education program that must be taught by teachers with a business-teaching license or an industry certification.
- In some states, such as Indiana, credentials are offered in related fields such as computer education or technology education, and these may be required to teach computer science courses.
- In some states, such as Alaska, individual schools determine which endorsement is required to teach computer science.
- In some states, such as Missouri, no additional training other than a standard teaching credential is required to teach computer science.

REFERENCES

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