OLR Bill Analysis
sSB 1129

AN ACT CONCERNING VARIOUS INITIATIVES TO PROMOTE COMPUTER SCIENCE AND TECHNICAL TALENT IN EDUCATION.

SUMMARY

This bill establishes initiatives and makes various statutory changes related to computer science education and workforce development. Among other things, the bill:

1. adds computer science to the required course of study at the elementary, middle, and high school levels (§ 1);

2. allows the State Board of Education (SBE) to issue “adjunct computer science instructor permits” that authorize certain individuals to hold part-time computer science teacher positions (§ 4);

3. makes various other changes to teacher certification and preparation programs (§§ 2, 3, 5 & 6);

4. requires companies that receive funding from the Department of Economic and Community Development (DECD) to offer internships to in-state college students or externships to public high school teachers (§ 7);

5. expands the apprenticeship tax credit to companies that hire computer coding apprentices under a qualified apprenticeship training program (§ 8);

6. establishes the Computer Science for Connecticut Commission and charges it with various tasks (§ 9);

7. establishes the “Computer Science for Connecticut Commission account” to be used for the commission’s purposes and provides a 50% corporation business tax credit to businesses that donate
to the account (§ 9);

8. requires the Connecticut Higher Education Supplemental Loan Authority to develop legislative recommendations for technology degree loan forgiveness programs that meet the bill’s specifications (§11); and

9. establishes a Chief Talent Strategy Officer within the governor’s office and requires the officer to perform specific tasks, including analyzing the state’s talent needs and coordinating with specified stakeholders to align state resources (§ 12).

EFFECTIVE DATE: July 1, 2019, except that sections regarding durational teacher shortage permits for computer software engineers, the Computer Science for Connecticut Commission, student loan forgiveness program, and the Chief Talent Strategy Officer are effective upon passage.

§ 1 — COMPUTER SCIENCE INSTRUCTION AND CURRICULUM

The bill adds computer science to the list of subjects that must be taught in public schools. It makes computer programming a required component of computer science instruction, rather than a stand-alone instruction topic as under current law.

It requires schools, by July 1, 2021, to provide (1) instruction in computer science basics at the elementary school level, (2) instruction in exploratory computer science at the middle school level, and (3) at least one computer science course at the high school level.

The bill requires SBE to establish a statewide digital literacy and computer coding curriculum for all public schools. The curriculum must include (1) sample lessons to embed computer coding lessons within other classes and courses and (2) an after school computer science course to be distributed by organizations that provide training and programs to support after school programs. SBE must also provide any after school computer science course it establishes to state public libraries.
§§ 2-6 — TEACHER PREPARATION AND CERTIFICATION

Adjunct Instructor Permit (§ 4)

The bill allows SBE to issue, at the request of a local or regional board of education or a regional education service center (RESC), an “adjunct computer science instructor permit” to any applicant with specialized training, experience, or expertise in computer science. The permit authorizes its holder to work as a part-time computer science teacher for up to three years, but the education commissioner may renew it for good cause upon the request of the employing district’s superintendent or RESC.

The bill prohibits individuals who hold this permit from (1) displacing any certified teachers who currently work at a school and (2) joining the teachers’ retirement system, unless they also hold a regular teacher certificate issued by SBE.

Additionally, the bill establishes applicant qualifications for the permit, prescribes a supervisory structure for permit-holders’ employment, and requires employing boards or RESCs to provide support services to instructors who hold this permit.

**Applicant Qualifications.** Under the bill, to be eligible for an adjunct computer science instructor permit, an applicant must meet the following criteria:

1. hold a bachelor’s degree from a higher education institution accredited by the Board of Regents for Higher Education or Office of Higher Education (OHE) or regionally accredited;

2. have at least three years of computer science work experience, or one year of such work experience and two years of specialized computer science schooling; and

3. achieve a satisfactory score on the SBE-approved subject area test.

**Supervision.** The bill requires regular supervision of permit-holders while they are employed in public schools. Specifically, the
school superintendent, principal, an administrator, or another supervisor must regularly observe, guide, and evaluate their performance.

**Support Services.** Under the bill, boards of education or RESCs that employ individuals with this permit must offer them a support services program. The program must be developed in consultation with SDE and must include academic and classroom support service components.

**Other Changes (§§ 2, 3, 5, & 6)**

Additionally, the bill makes the following changes in teacher preparation and certification laws relating to computer science:

1. requires teacher preparation programs that lead to professional certification to add “programming and coding” to their existing computer and information technology skills curriculum, which the bill renames “computer science,” (§ 2);

2. requires OHE, in collaboration and consultation with the State Department of Education (SDE), to develop an alternate route to certification (ARC) program for computer science teachers, which must include mentored apprenticeships and program admission criteria (§ 3); and

3. requires SBE to adopt regulations by July 1, 2020, that provide computer science teaching certification standards, which must (a) create a computer science endorsement and (b) allow applicants to fulfill certification requirements by completing prescribed courses of study or other experience that SBE deems appropriate (§ 5); and

4. requires SBE to adopt regulations to expand a SBE-issued certificate or durational shortage area permit to enable a software engineer or similar industry professional to begin teaching while enrolled in a teacher preparation program or approved alternate route to certification program (§ 6).
§ 7 — INTERNSHIPS AND EXTERNSHIPS FROM BUSINESSES RECEIVING STATE ASSISTANCE

Under the bill, any business or company that receives funding or economic assistance from DECD must offer (1) internships to students attending a state higher education institution or (2) externships during the summer to public school teachers. The DECD commissioner must consult with each company or business to determine a reasonable number of internships or externships, or both, for the company or business to offer, appropriate to its size and industry.

The bill requires the DECD commissioner, in consultation with the OHE executive director, the Board of Regents, and the UConn Board of Trustees, to develop one or more internet databases of internship opportunities in the state for students attending public higher education institutions. The database must be searchable by region and made available to the students.

The commissioner must also adopt implementing regulations.

§ 8 — COMPUTER CODING APPRENTICESHIP TAX CREDIT

The bill establishes a computer coding apprenticeship tax credit applicable against the corporation business tax. Companies who employ computer coding apprentices under a qualified apprenticeship program qualify for the credit, which equals six dollars multiplied by the total number of hours worked in the income year by an apprentice in the first year of a two-year apprenticeship or the first three years of a four-year apprenticeship. The credit is capped annually at $7,500 per apprentice or 50% of the eligible portion of actual wages paid to the apprentice, whichever is less. As with other apprenticeship credits, the total credit cannot exceed the taxpayer’s tax liability for that income year.

To be credit eligible under the bill, an apprenticeship program must be certified under regulations that the labor commissioner adopts and registered with the Connecticut State Apprenticeship Council. As for other sectors under existing law, in order to be certified by the Connecticut State Apprenticeship Council, a qualified apprenticeship
training program must require between 4,000 and 8,000 hours of apprenticeship training.

§ 9 — COMPUTER SCIENCE FOR CONNECTICUT COMMISSION

The bill establishes the nine-member Computer Science for Connecticut Commission as a part of the legislative department. The commission members are appointed, as shown in Table 1, and may include members of the General Assembly. Commission members serve four-year terms, except that initial terms are staggered, as Table 1 shows.

<table>
<thead>
<tr>
<th>Appointing Authority</th>
<th>Number of Appointments</th>
<th>Initial Term Length*</th>
</tr>
</thead>
<tbody>
<tr>
<td>House Speaker</td>
<td>One</td>
<td>Four years</td>
</tr>
<tr>
<td>Senate President Pro Tempore</td>
<td>One</td>
<td>Four years</td>
</tr>
<tr>
<td>House Majority Leader</td>
<td>One</td>
<td>Three years</td>
</tr>
<tr>
<td>Senate Majority Leader</td>
<td>One</td>
<td>Two years</td>
</tr>
<tr>
<td>House Minority Leader</td>
<td>One</td>
<td>Two years</td>
</tr>
<tr>
<td>Senate Minority Leader</td>
<td>One</td>
<td>Three years</td>
</tr>
<tr>
<td>Governor</td>
<td>Three</td>
<td>One for four years, one for three years, and one for two years</td>
</tr>
</tbody>
</table>

* The bill contains a conflicting provision indicating the initial terms end on July 1 or 2020, 2021, and 2022.

Initial appointments must be made within 60 days after the bill takes effect. Vacancies must be filled by the appointing authority, and members must serve until their successors are appointed. Vacancies that occur other than by term expiration must be filled for the unexpired term’s balance.

Under the bill, the House Speaker and Senate President Pro Tempore must jointly select the chairperson from among the commission’s members. The chairperson must schedule the commission’s first meeting, which must be held by October 1, 2019. The commission must meet at least quarterly or as often as the chairperson or a majority of the commission deems necessary.

Board members must serve without compensation, but may be reimbursed, within available funds, for expenses incurred in
performing their duties.

**Commission Activities**

The bill allows the commission to plan and run an annual summit, in conjunction with DECD, that seeks to bring together (1) students from middle schools, high schools, and higher education institutions in the state; (2) technology industry professionals; (3) training providers, and (4) community members. The purpose of the summit is to showcase projects, research, education, and career opportunities related to science and technology.

The commission may also do the following:

1. establish and run a statewide job shadowing day to provide students with insights into different career paths, industries, and skills valued by in-state employers;

2. develop and offer to state public schools, by itself or by contracting with other organizations, professional development services in computer science;

3. make grants to in-state public schools to offer computer science professional development courses and studies; and

4. offer scholarships to (1) teachers seeking a computer science endorsement and (2) students attending in-state higher education institutions and pursuing a degree in a technology field.

The commission’s chairperson may contract with a private entity to support the commission’s goals, responsibilities, and duties.

**Computer Science for Connecticut Commission Account and Tax Credit**

The bill established the “Computer Science for Connecticut Commission account” as a separate, nonlapsing account within the General Fund. The account must contain any funds the law requires to be deposited into it and must be spent by the Joint Committee on Legislative Management for the commissions’ activities.
The bill authorizes a corporation business tax credit for businesses that donate funds to the account. The credit equals 50% of the amount a business donates to the account, and the total amount of credits is capped at $1 million, in the aggregate, in any fiscal year. (The bill does not specify a process for reserving credits or proportionately reducing them to implement the cap.) Any credits must be claimed for the income year in which the donation was made.

§ 10 — STATEWIDE PLAN TO PROVIDE EDUCATION, TRAINING, AND JOB PLACEMENT IN EMERGING INDUSTRIES

Existing law requires the Connecticut Employment and Training Commission (CETC) to develop, in collaboration with the state public colleges and universities, SDE, and regional workforce development boards, a statewide plan and funding proposal to implement, expand, or improve on contextualized learning, career certificate, middle college, and early college high school programs. The programs must provide education, training, and placement in available jobs in manufacturing, health care, construction, green and STEM industries, and other emerging sectors of the state’s economy. Under the bill, the programs must additionally provide education, training, and placement in available jobs in computer science.

§ 11 — LEGISLATIVE RECOMMENDATIONS FOR LOAN FORGIVENESS

The bill requires the Connecticut Higher Education Supplemental Loan Authority (CHESLA) to develop legislative recommendations for establishing and administering a technology degree loan program that offers loan forgiveness to graduates of in-state higher education institutions for each year the graduate works for a technology company in the state and resides in the state. CHESLA’s executive director must submit its recommendations to the Higher Education and Finance, Revenue and Bonding committees by January 17, 2020.

§ 12 — CHIEF TALENT STRATEGY OFFICER

The bill establishes the position of Chief Talent Strategy Officer, appointed by the governor and within his office, and charges the officer with ensuring that the state is producing the workforce
required to meet in-state employer’s demands. It requires the officer to analyze the state’s existing and future talent needs, using an independent data provider with access to real-time labor market data to identify:

1. anticipated areas of job growth over the next five and ten years, statewide and by region;

2. existing or projected shortages in certificate and degree programs at in-state higher education institutions and short-term and long-term noncredit training programs that are needed to support areas of job growth;

3. in-state higher education institutions that are offering academic programs most in demand by employers and by students, the percentage of graduates of such institutions who are employed in the state two years after graduation, and the fields and industries in which such graduates are employed; and

4. the capacity for growth in high-demand academic programs offered by in-state higher education institutions.

The bill also requires the officer to:

1. coordinate with state agencies and quasi-public agencies to prioritize and align state resources to meet the identified existing and future talent needs of the state;

2. support the OHE executive director to implement the higher education strategic master plan;

3. coordinate with municipal leaders to (a) share the results of the analysis described above with employers, in-state higher education institutions, and other stakeholders, and (b) provide a program to award grants to support evidence-based solutions to cultivate, attract, hire and retain workers in high-demand fields and industries, including internship programs, education programs, incentives to attract mid-career workers, and fellowship programs to attract and retain recent graduates; and
4. create a state-wide advisory board comprised of leaders from in-state higher education institutions and chief executive officers from in-state companies, which must meet twice a year to advise the Chief Talent Strategy Officer on implementing his or her duties.

BACKGROUND

Related Bill

SB 957 (File 595), favorably reported by the Education Committee, contains substantially similar provisions regarding computer science curriculum, teacher preparation, and teacher certification.

COMMITTEE ACTION

Finance, Revenue and Bonding Committee

Joint Favorable

Yea 40 Nay 10 (05/01/2019)