

General Assembly

January Session, 2019

Substitute Bill No. 1129



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

Be it enacted by the Senate and House of Representatives in General Assembly convened:

- Section 1. Section 10-16b of the general statutes is repealed and the following is substituted in lieu thereof (*Effective July 1, 2019*):
- 3 (a) (1) In the public schools, the program of instruction offered shall 4 include at least the following subject matter, as taught by legally 5 qualified teachers: [, the] (A) The arts; (B) career education; (C) 6 consumer education; (D) health and safety, including, but not limited 7 to, human growth and development, nutrition, first aid, including 8 cardiopulmonary resuscitation training in accordance with the 9 provisions of section 10-16qq, disease prevention and cancer 10 awareness, including, but not limited to, age and developmentally 11 appropriate instruction in performing self-examinations for the 12 purposes of screening for breast cancer and testicular cancer, 13 community and consumer health, physical, mental and emotional 14 health, including youth suicide prevention, substance abuse 15 prevention, including instruction relating to opioid use and related 16 disorders, safety, which shall include the safe use of social media, as 17 defined in section 9-601, and may include the dangers of gang 18 membership, and accident prevention; (E) language arts, including 19 reading, writing, grammar, speaking and spelling; mathematics; (F) 20 physical education; (G) science, which may include the climate change

- curriculum described in subsection (d) of this section; (H) social studies, including, but not limited to, citizenship, economics, geography, government, history and Holocaust and genocide education and awareness in accordance with the provisions of section 10-18f; (I) computer science, including, but not limited to, computer programming instruction, and not later than July 1, 2021, (i) instruction in the basics of computer science at the elementary school level, (ii) instruction in exploratory computer science at the middle school level, and (iii) at least one course in computer science at the high school level; and (J) in addition, on at least the secondary level, one or more world languages and vocational education.
 - (2) For purposes of this subsection, [world languages shall include] (A) "world languages" includes American Sign Language, provided such subject matter is taught by a qualified instructor under the supervision of a teacher who holds a certificate issued by the State Board of Education, [. For purposes of this subsection,] and (B) the "arts" means any form of visual or performing arts, which may include, but not be limited to, dance, music, art and theatre.
 - (b) If a local or regional board of education requires its pupils to take a course in a world language, the parent or guardian of a pupil identified as deaf or hard of hearing may request in writing that such pupil be exempted from such requirement and, if such a request is made, such pupil shall be exempt from such requirement.
 - (c) Each local and regional board of education shall on September 1, 1982, and annually thereafter at such time and in such manner as the Commissioner of Education shall request, attest to the State Board of Education that such local or regional board of education offers at least the program of instruction required pursuant to this section, and that such program of instruction is planned, ongoing and systematic.
 - (d) The State Board of Education shall make available curriculum materials and such other materials as may assist local and regional boards of education in developing instructional programs pursuant to

53 this section. The State Board of Education, within available 54 appropriations and utilizing available resource materials, shall assist 55 and encourage local and regional boards of education to include: (1) 56 Holocaust and genocide education and awareness; (2) the historical 57 events surrounding the Great Famine in Ireland; (3) African-American 58 history; (4) Puerto Rican history; (5) Native American history; (6) 59 personal financial management, including, but not limited to, financial 60 literacy as developed in the plan provided under section 10-16pp; (7) 61 training in cardiopulmonary resuscitation and the use of automatic 62 external defibrillators; (8) labor history and law, including organized 63 labor, the collective bargaining process, existing legal protections in the 64 workplace, the history and economics of free market capitalism and 65 entrepreneurialism, and the role of labor and capitalism in the 66 development of the American and world economies; (9) climate 67 change consistent with the Next Generation Science Standards; (10) 68 topics approved by the state board upon the request of local or 69 regional boards of education as part of the program of instruction 70 offered pursuant to subsection (a) of this section; and (11) instruction 71 relating to the Safe Haven Act, sections 17a-57 to 17a-61, inclusive. The 72 Department of Energy and Environmental Protection shall be available 73 to each local and regional board of education for the development of 74 curriculum on climate change as described in this subsection.

(e) The State Board of Education shall establish a state-wide digital literacy and computer coding curriculum for all public schools. Such curriculum shall include, but not be limited to, development of sample lessons to embed computer coding lessons within other classes and courses and an after school computer science course to be distributed by organizations that provide training and programs to support after school programs. The State Board of Education shall provide any after school computer science course established under this subsection to public libraries in the state.

Sec. 2. Subsection (d) of section 10-145a of the general statutes is repealed and the following is substituted in lieu thereof (*Effective July*

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- (d) On and after July 1, [1998] <u>2019</u>, any [candidate in a] program of teacher preparation leading to professional certification shall [complete a] <u>include</u>, as part of the curriculum, instruction in computer <u>science</u>, and other information technology skills, [component of such program,] as applied to student learning and classroom instruction, communications, [and] data management, programming and coding.
- 93 Sec. 3. Section 10-155d of the general statutes is repealed and the 94 following is substituted in lieu thereof (*Effective July 1, 2019*):
 - (a) The Office of Higher Education shall encourage and support experimentation and research in the preparation of teachers for public elementary and secondary schools. To help fulfill the purposes of this section, the Office of Higher Education shall appoint an advisory council composed of qualified professionals which shall render assistance and advice to the office. In carrying out its activities pursuant to this section, the office shall consult with the State Board of Education and such other agencies as it deems appropriate to assure coordination of all activities of the state relating to the preparation of teachers for public elementary and secondary schools.
 - (b) The Office of Higher Education, with the approval of the Commissioner of Education, shall within available expand, appropriations, participation in its summer alternate route to certification program and its weekend and evening alternate route to certification program. The office shall expand the weekend and evening program for participants seeking certification in a subject shortage area pursuant to section 10-8b. The office, in collaboration with the Department of Education, shall develop (1) a regional alternate route to certification program targeted to the subject shortage areas, [and] (2) an alternate route to certification program for former teachers whose certificates have expired and who are interested in resuming their teaching careers, and (3) an alternate route to certification program targeted for computer science teachers.

- 118 (c) The Office of Higher Education, in consultation with the 119 Department of Education, shall develop alternate route to certification 120 programs for (1) school administrators and superintendents, [and] (2) 121 early childhood education teachers, and (3) computer science teachers. 122 The programs shall include mentored apprenticeships and criteria for 123 admission to the programs.
- 124 Sec. 4. (NEW) (Effective July 1, 2019) (a) The State Board of 125 Education, upon the request of a local or regional board of education 126 or a regional educational service center, may issue an adjunct 127 computer science instructor permit to any applicant with specialized 128 training, experience or expertise in computer science. Such permit shall 129 authorize a person to hold a part-time position as a teacher of 130 computer science. Such applicant shall (1) hold a bachelor's degree from an institution of higher education accredited by the Board of 132 Regents for Higher Education or Office of Higher Education or 133 regionally accredited, (2) have a minimum of three years of work 134 experience in computer science, or one year of work experience and two years of specialized schooling related to computer science, and (3) 135 136 achieve a satisfactory evaluation on the appropriate State Board of 137 Education approved subject area assessment.
 - (b) During the period of employment as a computer science instructor, any person holding an adjunct computer science instructor permit shall be under the supervision of the superintendent of schools or of a principal, administrator or supervisor designated by such superintendent who shall regularly observe, guide and evaluate the performance of assigned duties by such holder of an adjunct computer science instructor permit.
 - (c) Each adjunct computer science instructor permit shall be valid for three years and may be renewed by the Commissioner of Education for good cause upon the request of the superintendent of schools for the district employing such person or the regional educational service center employing such person.

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- 150 (d) Any board of education or regional educational service center employing a person who holds an adjunct computer science instructor permit issued under this section shall provide a program to assist each such person. Such program, developed in consultation with the Department of Education, shall include academic and classroom 155 support service components.
 - (e) No person holding an adjunct computer science instructor permit shall fill a position that will result in the displacement of any person holding a teaching certificate under section 10-145b of the general statutes who is already employed at such school.
 - (f) Any person holding an adjunct computer science instructor permit pursuant to this section shall not be deemed to be eligible for membership in the teachers' retirement system solely by reason of such permit, provided any such person who holds a regular teacher's certificate issued by the State Board of Education shall not be excluded from membership in said system.
- 166 Sec. 5. Subsection (e) of section 10-145d of the general statutes is 167 repealed and the following is substituted in lieu thereof (Effective July 168 1, 2019):
 - (e) [The] Not later than July 1, 2020, the State Board of Education shall adopt regulations, in accordance with chapter 54, to provide standards for the certification of computer science teachers. Such regulations shall create a computer science endorsement and make provision for certification requirements to be met by either (1) completion of prescribed courses of study, or (2) such other experience as the state board shall deem appropriate.
 - Sec. 6. (NEW) (Effective from passage) The State Board of Education shall adopt regulations, in accordance with the provisions of chapter 54 of the general statutes, to expand a certificate or durational shortage area permit issued by said board to enable a software engineer or other similar industry professional to begin teaching while such engineer or

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- industry professional is enrolled in a teacher preparation program or an alternate route to certification program approved by the State Board of Education.
- 184 Sec. 7. (NEW) (Effective July 1, 2019) (a) Any company or business 185 that receives funds or economic assistance from the Department of 186 Economic and Community Development shall offer (1) internships to 187 students attending an institution of higher education in the state, or (2) 188 externships during the summer months to teachers in public schools in 189 the state, or both. The Commissioner of Economic and Community 190 Development shall consult with such company or business to 191 determine a reasonable number of internships or externships, or both, 192 for such company or business to offer, appropriate to such company's 193 or business's size and industry.
- 194 (b) The Commissioner of Economic and Community Development 195 shall, in consultation with the executive director of the Office of Higher 196 Education, the Board of Regents for Higher Education and the Board 197 of Trustees of The University of Connecticut, develop one or more 198 electronic databases on the Internet of internship opportunities in the 199 state for students attending public institutions of higher education in 200 the state. Any such database shall be searchable by region and be made 201 available to such students.
 - (c) The commissioner shall adopt regulations, in accordance with the provisions of chapter 54 of the general statutes, to implement the provisions of this section.
- Sec. 8. Section 12-217g of the general statutes is repealed and the following is substituted in lieu thereof (*Effective July 1, 2019*):
 - (a) (1) There shall be allowed a credit for any taxpayer against the tax imposed under this chapter for any income year with respect to each apprenticeship in the manufacturing trades commenced by such taxpayer in such year under a qualified apprenticeship training program as described in <u>subsection</u> (e) of this section, certified in

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accordance with regulations adopted in accordance with the provisions of chapter 54 by the Labor Commissioner and registered with the Connecticut State Apprenticeship Council established under section 31-22n, in an amount equal to six dollars per hour multiplied by the total number of hours worked during the income year by apprentices in the first half of a two-year term of apprenticeship and the first three-quarters of a four-year term of apprenticeship, provided the amount of credit allowed for any income year with respect to each such apprenticeship may not exceed seven thousand five hundred dollars or fifty per cent of actual wages paid in such income year to an apprentice in the first half of a two-year term of apprenticeship or in the first three-quarters of a four-year term of apprenticeship, whichever is less.

- (2) Effective for income years commencing on and after January 1, 2015, for purposes of this subsection, "taxpayer" includes an affected business entity, as defined in section 12-284b. Any affected business entity allowed a credit under this subsection may sell, assign or otherwise transfer such credit, in whole or in part, to one or more taxpayers to offset any state tax due or otherwise payable by such taxpayers under this chapter, or, with respect to income years commencing on or after January 1, 2016, chapter 212 or 227, provided such credit may be sold, assigned or otherwise transferred, in whole or in part, not more than three times.
- (b) There shall be allowed a credit for any taxpayer against the tax imposed under this chapter for any income year with respect to each apprenticeship in plastics and plastics-related trades commenced by such taxpayer in such year under a qualified apprenticeship training program as described in <u>subsection (e) of</u> this section, certified in accordance with regulations adopted <u>in accordance with the provisions of chapter 54</u> by the Labor Commissioner and registered with the Connecticut State Apprenticeship Council established under section 31-22n, which apprenticeship exceeds the average number of such apprenticeships begun by such taxpayer during the five income

years immediately preceding the income year with respect to which such credit is allowed, in an amount equal to four dollars per hour multiplied by the total number of hours worked during the income year by apprentices in the first half of a two-year term of apprenticeship and the first three-quarters of a four-year term of apprenticeship, provided the amount of credit allowed for any income year with respect to each such apprenticeship may not exceed four thousand eight hundred dollars or fifty per cent of actual wages paid in such income year to an apprentice in the first half of a two-year term of apprenticeship or in the first three-quarters of a four-year term of apprenticeship, whichever is less.

(c) There shall be allowed a credit for any taxpayer against the tax imposed under this chapter for any income year with respect to wages paid to apprentices in the construction trades by such taxpayer in such year that the apprentice and taxpayer participate in a qualified apprenticeship training program, as described in subsection (e) of this section, [which (1)] that is at least four years in duration, [(2)] is certified in accordance with regulations adopted in accordance with the provisions of chapter 54 by the Labor Commissioner [,] and [(3)] is registered with the Connecticut State Apprenticeship Council established under section 31-22n. The tax credit shall be [(A)] (1) in an amount equal to two dollars per hour multiplied by the total number of hours completed by each apprentice toward completion of such program, and [(B)] (2) awarded upon completion and notification of completion of such program in the income year in which such completion and notification occur, provided the amount of credit allowed for such income year with respect to each such apprentice may not exceed four thousand dollars or fifty per cent of actual wages paid over the first four income years for such apprenticeship, whichever is less.

(d) There shall be allowed a credit for any taxpayer against the tax imposed under this chapter for any income year with respect to each apprenticeship in computer coding commenced by such taxpayer in

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such year under a qualified apprenticeship training program as described in subsection (e) of this section, certified in accordance with regulations adopted in accordance with the provisions of chapter 54 by the Labor Commissioner and registered with the Connecticut State Apprenticeship Council established under section 31-22n, in an amount equal to six dollars per hour multiplied by the total number of hours worked during the income year by apprentices in the first half of a two-year term of apprenticeship and the first three-quarters of a four-year term of apprenticeship, provided the amount of credit allowed for any income year with respect to each such apprenticeship may not exceed seven thousand five hundred dollars or fifty per cent of actual wages paid in such income year to an apprentice in the first half of a two-year term of apprenticeship or in the first three-quarters of a four-year term of apprenticeship, whichever is less.

[(d)] (e) For purposes of this section, a qualified apprenticeship training program shall require at least four thousand but not more than eight thousand hours of apprenticeship training for certification of such apprenticeship by the Connecticut State Apprenticeship Council. The amount of credit allowed any taxpayer under this section for any income year may not exceed the amount of tax due from such taxpayer under this chapter with respect to such income year.

Sec. 9. (NEW) (Effective from passage) (a) (1) There is established a Computer Science For Connecticut Commission, which shall be part of the Legislative Department. The commission shall consist of the following members: (A) One appointed by the speaker of the House of Representatives; (B) one appointed by the president pro tempore of the Senate; (C) one appointed by the majority leader of the House of Representatives; (D) one appointed by the majority leader of the Senate; (E) one appointed by the minority leader of the House of Representatives; (F) one appointed by the minority leader of the Senate; and (G) three appointed by the Governor. Any member of the commission appointed under this subdivision may be a member of the General Assembly.

- (2) All initial appointments to the commission shall be made not later than sixty days after the effective date of this section and shall terminate on July 1, 2020, July 1, 2021, and July 1, 2022, as applicable, regardless of when the initial appointment was made. Appointed members of the board shall serve for four-year terms, which shall commence on the date of appointment, except that members first appointed shall have the following terms: (A) Members appointed by the speaker of the House of Representatives and the president pro tempore of the Senate and one member appointed by the Governor shall initially serve a term of four years; (B) members appointed by the majority leader of the House of Representatives and the minority leader of the Senate and one member appointed by the Governor shall initially serve a term of three years; and (C) members appointed by the minority leader of the House of Representatives and the majority leader of the Senate and one member appointed by the Governor shall initially serve a term of two years. Members shall continue to serve until their successors are appointed and any member may serve more than one term.
- (3) The speaker of the House of Representatives and the president pro tempore of the Senate shall jointly select the chairperson of the commission from among the members of the commission. Such chairperson shall schedule the first meeting of the commission, which shall be held not later than October 1, 2019. The commission shall meet at least quarterly or as often as deemed necessary by the chairperson or a majority of the commission.
- (4) Any vacancy shall be filled by the appointing authority. Any vacancy occurring other than by expiration of term shall be filled for the balance of the unexpired term.
- (5) The members of the commission shall serve without compensation, but shall, within the limits of available funds, be reimbursed for expenses necessarily incurred in the performance of their duties. The chairperson of the commission may contract with a private entity to support the commission's goals, responsibilities and

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- 344 duties under this section.
- 345 (b) The commission may do any or all of the following:
- 346 (1) Plan and run an annual summit in conjunction with the 347 Department of Economic and Community Development. The summit 348 shall seek to bring together students from middle schools, high schools 349 and institutions of higher education in the state, technology industry 350 professionals, training providers and community members to 351 showcase projects, research, education and career opportunities related 352 to computer science and technology;
- 353 (2) Establish and run a state-wide job-shadowing day to provide 354 students with insights into different industries, career paths and skills 355 valued by employers in the state;
- 356 (3) Develop and offer to public schools in the state, by itself or by 357 contracting with other organizations, professional development 358 services in computer science;
- 359 (4) Make grants to public schools in the state to offer computer 360 science professional development courses and studies; and
 - (5) Offer scholarships to teachers seeking a computer science endorsement or to students attending an institution of higher education in the state and pursuing a degree in a technology field, or both.
 - (c) There is established an account to be known as the "Computer Science For Connecticut Commission account" which shall be a separate, nonlapsing account within the General Fund. The account shall contain any moneys required by law to be deposited in the account. Moneys in the account shall be expended by the Joint Committee on Legislative Management for the purposes of subsection (b) of this section.
 - (d) There shall be allowed against the tax imposed by chapter 208 of

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- the general statutes a credit in an amount equal to fifty per cent of the amount a corporation donates to the account established under subsection (c) of this section, provided the aggregate amount of credits under this subsection shall not exceed one million dollars in any fiscal year. Any credit allowed under this subsection shall be claimed for the income year in which such donation was made.
- Sec. 10. Section 31-11ff of the general statutes is repealed and the following is substituted in lieu thereof (*Effective July 1, 2019*):
 - (a) For purposes of this section:

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- (1) "Early college high school" means a school in which persons who are underrepresented in higher education, including, but not limited to, low-income youth, first-generation college students, English language learners and minority students, may simultaneously earn, tuition free, a high school diploma and an associate degree or up to two years of credit toward a bachelor's degree;
- (2) "Middle college program" means a collaboration between a school district's high schools and a regional-community technical college or a four-year college or university where a student may (A) take core high school courses or courses for which college or university-level credit may be given, and (B) attribute all such credits earned toward a program of higher learning at an institution of higher education in which such student enrolls upon graduation from the middle college program; and
- (3) "Connecticut Early College Opportunity program" or "CT-ECO" means a collaboration between a school district's high schools, a local community college and a company or business entity where a student may earn an industry-recognized, two-year postsecondary degree in addition to a high school diploma.
- (b) The Connecticut Employment and Training Commission shall develop, in collaboration with the Connecticut state colleges and universities, Department of Education, and regional work force

development boards established pursuant to section 31-3i, a state-wide plan for implementing, expanding or improving upon career certificate programs established under section 10-20a, middle college programs, early college high school programs and Connecticut Early College Opportunity programs to provide education, training and placement in jobs available in the manufacturing, health care, construction, green, science, technology, computer science, engineering and mathematics industries and other emerging sectors of the state's economy. Such plan shall include a proposal to fund such programs.

Sec. 11. (Effective from passage) The Connecticut Higher Education Supplemental Loan Authority, constituted pursuant to section 10a-179 of the general statutes, shall develop legislative recommendations to establish and administer a technology degree loan program that offers loan forgiveness to graduates of institutions of higher education in the state for each year such graduate (1) works for a technology company in the state, and (2) resides in the state. Not later than January 17, 2020, the executive director of said authority shall submit such recommendations, in accordance with the provisions of section 11-4a of the general statutes, to the joint standing committees of the General Assembly having cognizance of matters relating to higher education and finance, revenue and bonding.

Sec. 12. (NEW) (*Effective from passage*) There shall be a Chief Talent Strategy Officer within the office of the Governor and appointed by the Governor. Such officer shall be responsible for ensuring that the state is producing the workforce required to meet the demands of employers in the state and shall:

(1) Analyze existing and future talent needs of the state, using an independent data provider with access to real-time labor market data to identify (A) anticipated areas of job growth in the state over the next five and ten years, state-wide and by region, (B) existing or projected shortages in certificate and degree programs at institutions of higher education in the state and short-term and long-term noncredit training programs that are needed to support areas of job growth, (C)

- institutions of higher education in the state 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 (D) the capacity for growth in highdemand academic programs offered by institutions of higher education in the state;
 - (2) Coordinate with state agencies and quasi-public agencies to prioritize and align state resources to meet the existing and future talent needs of the state, as identified pursuant to subdivision (1) of this section;
 - (3) Support the executive director of the Office of Higher Education to implement the higher education strategic master plan developed pursuant to section 10a-11b of the general statutes;
 - (4) Coordinate with municipal leaders to (A) share the results of the analysis performed under subdivision (1) of this section with employers, institutions of higher education in the state 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. Such program may include, but not be limited to, internship programs, education programs, incentives to attract mid-career workers and fellowship programs to attract and retain recent graduates; and
 - (5) Create a state-wide advisory board comprised of leaders from the institutions of higher education in the state and chief executive officers from companies domiciled in the state. Such advisory board shall meet biennially to advise the Chief Talent Strategy Officer on the implementation of this section.

This act shall take effect as follows and shall amend the following				
sections:				
Section 1	July 1, 2019	10-16b		

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Sec. 2	July 1, 2019	10-145a(d)
Sec. 3	July 1, 2019	10-155d
Sec. 4	July 1, 2019	New section
Sec. 5	July 1, 2019	10-145d(e)
Sec. 6	from passage	New section
Sec. 7	July 1, 2019	New section
Sec. 8	July 1, 2019	12-217g
Sec. 9	from passage	New section
Sec. 10	July 1, 2019	31-11ff
Sec. 11	from passage	New section
Sec. 12	from passage	New section

Statement of Legislative Commissioners:

In Section 9(a), "council" was changed to "commission" for consistency with other provisions of the section.

FIN Joint Favorable Subst. -LCO