

General Assembly

January Session, 2019

Raised Bill No. 1129

LCO No. **7238**

Referred to Committee on FINANCE, REVENUE AND BONDING

Introduced by: (FIN)

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 Section 10-16b of the general statutes is repealed and the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) consumer education; (D) health and safety, including, but not limited 6 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 awareness, including, but not limited to, age and developmentally 10 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 21 curriculum described in subsection (d) of this section; (H) social 22 studies, including, but not limited to, citizenship, economics, 23 geography, government, history and Holocaust and genocide 24 education and awareness in accordance with the provisions of section 25 10-18f; (I) (i) computer science, including, but not limited to, computer 26 programming instruction, and (ii) not later than July 1, 2021, (I) 27 instruction in the basics of computer science at the elementary school 28 level, (II) instruction in exploratory computer science at the middle 29 school level, and (III) at least one course in computer science at the 30 high school level; and (J) in addition, on at least the secondary level, one or more world languages and vocational education. 31

32 (2) For purposes of this subsection, (A) world languages [shall 33 include] <u>includes</u> American Sign Language, provided such subject 34 matter is taught by a qualified instructor under the supervision of a 35 teacher who holds a certificate issued by the State Board of Education, 36 [. For purposes of this subsection,] <u>and (B)</u> the "arts" means any form of 37 visual or performing arts, which may include, but not be limited to, 38 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

- 47 Education that such local or regional board of education offers at least
- 48 the program of instruction required pursuant to this section, and that
- 49 such program of instruction is planned, ongoing and systematic.

50 (d) The State Board of Education shall make available curriculum 51 materials and such other materials as may assist local and regional 52 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 workplace, the history and economics of free market capitalism and 64 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

80 by organizations that provide training and programs to support after

81 school programs. The State Board of Education shall provide any after

82 <u>school computer science course established under this subsection to</u>

83 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 1*, 2019):

(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, as part of the curriculum, instruction in</u> 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*):

95 (a) The Office of Higher Education shall encourage and support 96 experimentation and research in the preparation of teachers for public 97 elementary and secondary schools. To help fulfill the purposes of this 98 section, the Office of Higher Education shall appoint an advisory 99 council composed of qualified professionals which shall render 100 assistance and advice to the office. In carrying out its activities 101 pursuant to this section, the office shall consult with the State Board of 102 Education and such other agencies as it deems appropriate to assure 103 coordination of all activities of the state relating to the preparation of 104 teachers for public elementary and secondary schools.

105 (b) The Office of Higher Education, with the approval of the 106 Commissioner of Education, shall expand, within available 107 appropriations, participation in its summer alternate route to 108 certification program and its weekend and evening alternate route to 109 certification program. The office shall expand the weekend and 110 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.

(c) The Office of Higher Education, in consultation with the
Department of Education, shall develop alternate route to certification
programs for (1) school administrators and superintendents, [and] (2)
early childhood education teachers, and (3) computer science teachers.
The programs shall include mentored apprenticeships and criteria for
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 131 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 135 two years of specialized schooling related to computer science, and (3) 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

143 performance of assigned duties by such holder of an adjunct computer144 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.

(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
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.

Sec. 5. Subsection (e) of section 10-145d of the general statutes is
repealed and the following is substituted in lieu thereof (*Effective July 1*, 2019):

(e) [The] <u>Not later than July 1, 2020, the</u> 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 <u>create a computer science endorsement and make</u>

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.

176 Sec. 6. (NEW) (Effective from passage) The State Board of Education 177 shall adopt regulations in accordance with the provisions of chapter 54 178 of the general statutes to expand a certificate or durational shortage 179 area permit issued by said board to enable software engineers or other 180 similar industry professionals to begin teaching while such engineer or 181 industry professional is enrolled in a teacher preparation program or 182 an alternate route to certification program approved by the State Board 183 of Education.

Sec. 7. (NEW) (Effective July 1, 2019) (a) Any company or business 184 185 that receives funds or economic assistance from the Department of 186 Community Development shall offer internships to students attending 187 an institution of higher education in the state or externships during the 188 summer months to teachers in public schools in the state, or both. The 189 Commissioner of Economic and Community Development shall 190 consult with such company or business to determine a reasonable 191 number internships or externships, or both, for such company or 192 business to offer, appropriate to such company's or business's size and 193 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 withthe provisions of chapter 54 of the general statutes, to implement the

204 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*):

207 (a) (1) There shall be allowed a credit for any taxpayer against the 208 tax imposed under this chapter for any income year with respect to 209 each apprenticeship in the manufacturing trades commenced by such 210 taxpayer in such year under a qualified apprenticeship training 211 program as described in subsection (e) of this section, certified in 212 accordance with regulations adopted in accordance with the 213 provisions of chapter 54 by the Labor Commissioner and registered 214 with the Connecticut State Apprenticeship Council established under 215 section 31-22n, in an amount equal to six dollars per hour multiplied 216 by the total number of hours worked during the income year by 217 apprentices in the first half of a two-year term of apprenticeship and 218 the first three-quarters of a four-year term of apprenticeship, provided 219 the amount of credit allowed for any income year with respect to each 220 such apprenticeship may not exceed seven thousand five hundred 221 dollars or fifty per cent of actual wages paid in such income year to an 222 apprentice in the first half of a two-year term of apprenticeship or in 223 the first three-quarters of a four-year term of apprenticeship, 224 whichever is less.

225 (2) Effective for income years commencing on and after January 1, 226 2015, for purposes of this subsection, "taxpayer" includes an affected 227 business entity, as defined in section 12-284b. Any affected business 228 entity allowed a credit under this subsection may sell, assign or 229 otherwise transfer such credit, in whole or in part, to one or more 230 taxpayers to offset any state tax due or otherwise payable by such 231 taxpayers under this chapter, or, with respect to income years 232 commencing on or after January 1, 2016, chapter 212 or 227, provided 233 such credit may be sold, assigned or otherwise transferred, in whole or 234 in part, not more than three times.

235 (b) There shall be allowed a credit for any taxpayer against the tax 236 imposed under this chapter for any income year with respect to each 237 apprenticeship in plastics and plastics-related trades commenced by 238 such taxpayer in such year under a qualified apprenticeship training 239 program as described in subsection (e) of this section, certified in 240 accordance with regulations adopted in accordance with the 241 provisions of chapter 54 by the Labor Commissioner and registered 242 with the Connecticut State Apprenticeship Council established under 243 section 31-22n, which apprenticeship exceeds the average number of 244 such apprenticeships begun by such taxpayer during the five income 245 years immediately preceding the income year with respect to which 246 such credit is allowed, in an amount equal to four dollars per hour 247 multiplied by the total number of hours worked during the income 248 year by apprentices in the first half of a two-year term of 249 apprenticeship and the first three-quarters of a four-year term of 250 apprenticeship, provided the amount of credit allowed for any income 251 year with respect to each such apprenticeship may not exceed four 252 thousand eight hundred dollars or fifty per cent of actual wages paid 253 in such income year to an apprentice in the first half of a two-year term 254 of apprenticeship or in the first three-quarters of a four-year term of 255 apprenticeship, whichever is less.

256 (c) There shall be allowed a credit for any taxpayer against the tax 257 imposed under this chapter for any income year with respect to wages 258 paid to apprentices in the construction trades by such taxpayer in such 259 year that the apprentice and taxpayer participate in a qualified 260 apprenticeship training program, as described in subsection (e) of this 261 section, [which (1)] that is at least four years in duration, [(2)] is 262 certified in accordance with regulations adopted in accordance with 263 the provisions of chapter 54 by the Labor Commissioner [,] and [(3)] is 264 registered with the Connecticut State Apprenticeship Council 265 established under section 31-22n. The tax credit shall be [(A)] (1) in an 266 amount equal to two dollars per hour multiplied by the total number 267 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.

275 (d) There shall be allowed a credit for any taxpayer against the tax 276 imposed under this chapter for any income year with respect to each 277 apprenticeship in computer coding commenced by such taxpayer in 278 such year under a qualified apprenticeship training program as 279 described in subsection (e) of this section, certified in accordance with 280 regulations adopted in accordance with the provisions of chapter 54 by 281 the Labor Commissioner and registered with the Connecticut State 282 Apprenticeship Council established under section 31-22n, in an 283 amount equal to six dollars per hour multiplied by the total number of 284 hours worked during the income year by apprentices in the first half of 285 a two-year term of apprenticeship and the first three-quarters of a four-286 year term of apprenticeship, provided the amount of credit allowed for 287 any income year with respect to each such apprenticeship may not 288 exceed seven thousand five hundred dollars or fifty per cent of actual 289 wages paid in such income year to an apprentice in the first half of a 290 two-year term of apprenticeship or in the first three-quarters of a four-291 vear 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.

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Sec. 9. (NEW) (Effective from passage) (a) (1) There is established a

300 Computer Science For Connecticut Commission, which shall be part of the Legislative Department. The council shall consist of the following 301 302 members: (A) One appointed by the speaker of the House of 303 Representatives; (B) one appointed by the president pro tempore of the 304 Senate; (C) one appointed by the majority leader of the House of 305 Representatives; (D) one appointed by the majority leader of the 306 Senate; (E) one appointed by the minority leader of the House of 307 Representatives; (F) one appointed by the minority leader of the 308 Senate; and (G) three appointed by the Governor. Any member of the 309 council appointed under this subdivision may be a member of the 310 General Assembly.

311 (2) All initial appointments to the commission shall be made not 312 later than sixty days after the effective date of this section and shall 313 terminate on July 1, 2020, July 1, 2021, and July 1, 2022, as applicable, 314 regardless of when the initial appointment was made. Appointed 315 members of the board shall serve for four-year terms, which shall 316 commence on the date of appointment and members first appointed 317 shall have the following terms: (A) Members appointed by the speaker 318 of the House of Representatives and the president pro tempore of the 319 Senate and one member appointed by the Governor shall initially 320 serve a term of four years; (B) members appointed by the majority 321 leader of the House of Representatives and the minority leader of the 322 Senate and one member appointed by the Governor shall initially 323 serve a term of three years; and (C) members appointed by the 324 minority leader of the House of Representatives and the majority 325 leader of the Senate and one member appointed by the Governor shall 326 initially serve a term of two years. Members shall continue to serve 327 until their successors are appointed and any member may serve more 328 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 council, 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 duties under this section.

345 (b) The commission may do any or all of the following:

(1) Plan and run an annual summit in conjunction with the
Department of Economic and Community Development. The summit
shall seek to bring together students from middle schools, high schools
and institutions of higher education in the state, technology industry
professionals, training providers and community members to
showcase projects, research, education and career opportunities related
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;

(3) Develop and offer to public schools in the state, by itself or by
contracting with other organizations, professional development
services in computer science;

(4) Make grants to public schools in the state to offer computerscience professional development courses and studies; and

361 (5) Offer scholarships to teachers seeking a computer science

endorsement or for students attending an institution of highereducation in the state and pursuing a degree in a technology field, orboth.

(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 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*):

381 (a) For purposes of this section:

(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.

401 (b) The Connecticut Employment and Training Commission shall 402 develop, in collaboration with the Connecticut state colleges and 403 universities, Department of Education, and regional work force 404 development boards established pursuant to section 31-3j, a state-wide 405 plan for implementing, expanding or improving upon career certificate 406 programs established under section 10-20a, middle college programs, 407 early college high school programs and Connecticut Early College 408 Opportunity programs to provide education, training and placement 409 in jobs available in the manufacturing, health care, construction, green, 410 science, technology, <u>computer science</u>, engineering and mathematics 411 industries and other emerging sectors of the state's economy. Such 412 plan shall include a proposal to fund such programs.

413 Sec. 11. (Effective from passage) The Connecticut Higher Education 414 Supplemental Loan Authority, constituted pursuant to section 10a-179 415 of the general statutes, shall develop legislative recommendations to 416 establish and administer a technology degree loan program that offers 417 loan forgiveness to graduates of institutions of higher education in the 418 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, 419 420 the executive director of said authority shall submit such 421 recommendations, in accordance with the provisions of section 11-4a 422 of the general statutes, to the joint standing committees of the General 423 Assembly having cognizance of matters relating to higher education

424 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:

430 (1) Analyze existing and future talent needs of the state, using an 431 independent data provider with access to real-time labor market data 432 to identify (A) anticipated areas of job growth in the state over the next 433 five and ten years, state-wide and by region, (B) existing or projected 434 shortages in certificate and degree programs at institutions of higher 435 education in the state and short-term and long-term noncredit training 436 programs that are needed to support areas of job growth, (C) the 437 institutions of higher education in the state that are offering academic 438 programs most in demand by employers and by students, the 439 percentage of graduates of such institutions who are employed in the 440 state two years after graduation and the fields and industries in which 441 such graduates are employed, and (D) the capacity for growth in high-442 demand academic programs offered by institutions of higher 443 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
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 Purpose:

To implement various initiatives to develop and promote a technologically trained workforce to meet the needs of the state's employers.

[Proposed deletions are enclosed in brackets. Proposed additions are indicated by underline, except that when the entire text of a bill or resolution or a section of a bill or resolution is new, it is not underlined.]