DAVID Y. IGE
GOVERNOR

DEPT. COMM. NO. 99

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAI`I

DEPARTMENT OF EDUCATION

P.O. BOX 2360

HONOLULU, HAWAI`I 96804

OFFICE OF THE SUPERINTENDENT

November 22, 2022

The Honorable Ronald D. Kouchi, President
and Members of the Senate
State Capitol, Room 409
Honolulu, Hawaii 96813

The Honorable Scott K. Saiki, Speaker
and Members of the House of Representatives
State Capitol, Room 431
Honolulu, Hawaii 96813

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

For your information and consideration, I am transmitting a copy of the annual report, Computer Science Courses and Computer Science Content, pursuant to Act 158, Session Laws of Hawaii 2021. In accordance with Section 93-16, Hawaii Revised Statutes, I am also informing you that the report may be viewed electronically at: http://www.hawaiipublicschools.org/VisionForSuccess/SchoolDataAndReports/StateReports/Pages/Legislative-reports.aspx.

Sincerely,

Keith T. Hayashi
Superintendent

KTH:bt
Enclosure

c: Legislative Reference Bureau
Hawaii State Public Library System
University of Hawaii
Office of Curriculum and Instructional Design

State of Hawaii
Department of Education

Annual Report on Computer Science Courses and Computer Science Content

November 2022

Act 158, Session Laws of Hawaii 2021, requires the Hawaii State Department of Education to annually report on the computer science courses and computer science content offered during the previous school year at the schools in each complex area.

2022 Annual Report On

Computer Science Courses and Content

2022 Annual Report on Computer Science Courses and Content

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Introduction

Report Background

On July 1, 2021, the legislature of the state of Hawai'i enacted Act 158 (SB242). The purpose of Act 158 was "to improve digital literacy throughout the State by further increasing computer science education offerings at public schools" (p. 3). The Act goes on to specify multiple requirements for the Hawai'i State Department of Education (HIDOE). These requirements need to be achieved in order to move the State toward the goal of improving digital literacy and increasing Computer Science (CS) education offerings.

The requirements specified in Act 158 are distributed over a three-year period. As summarized in Table 1, the first requirement states that at least one public elementary school and one public middle or intermediate school in each complex area shall offer CS courses or content beginning with the 2022 - 2023 school year. The second requirement states that no less than fifty percent of the public elementary schools and no less than fifty percent of the public middle and intermediate schools in each complex area shall offer CS courses or content beginning with the 2023 - 2024 school year. The third requirement states *all* public elementary, middle, and intermediate schools shall offer CS courses or content.

Table 1

Act 158 Legislative Requirements by School Year and School Type

School Type	2022 - 2023	2023 - 2024	2024 - 2025
Elementary	≥ 1	≥ 50%	100%
Middle / Intermediate	≥ 1	≥ 50%	100%

To track progress towards these goals, the superintendent is required to submit annual progress reports to the board and legislature. The annual progress reports should contain information about CS courses and content offered at schools in each complex area during the previous school year. This document is the first of the Act 158 legislative reports. It reports CS courses and content offered at schools in each complex area for the 2021 - 2022 school year.

Report Content

The content of this report was specified in the language of Act 158. Pursuant to Act 158, the report is divided into four sections: 1) CS Courses, 2) CS Course Content, 3) CS Course Enrollment, and 4) CS Course Instructors. Within the CS Courses section, the report lists the names and course codes of all CS courses offered at HIDOE public schools. The section on CS Course Content provides an overview of the concepts and practices covered in HIDOE's CS courses. The section on CS Course Enrollment reports the numbers and percentages of students enrolled in HIDOE CS courses. This information is further disaggregated by gender, race and ethnicity, special education status, English language learner (ELL) status, eligibility for free or reduced lunch status, and grade level. The fourth and final section of the report focuses on CS Course Instructors. This section includes the number of CS instructors within HIDOE and disaggregates that subpopulation by gender, race and ethnicity, as well as highest academic degree earned.

Report Data

Because the annual report was due June 30, 2022, and needed to be approved by stakeholders before publication and distribution, it was based on data from the third quarter (Q3) of the 2021 - 2022 school year. This is important to note because subsequent publications (e.g., reports, dashboards) may rely on data from different points in time and, therefore, show slightly different results. In terms of the data sources used to create this report, all course and student enrollment data were provided by HIDOE's Data Quality Team. Data about instructors were provided by HIDOE's Talent Management Office.

Report Scope and Limitations

Because this is the first Act 158 legislative report, it provides *baseline* information only. It does not provide year-over-year comparisons (i.e., "trend data") in the four main sections (CS Courses, CS Course Content, CS Course Enrollment, CS Course Instructors). Importantly, the baseline data established through this report will enable future reports to showcase year-over-year comparisons and potential progress as it pertains to CS education within HIDOE. That stated, this is a new initiative, therefore there may be substantial changes in the definitions and classifications used by HIDOE to track CS courses, CS course enrollment, and CS course instructors. For this reason, it is important for readers to interpret this report's baseline data and any future year-over-year comparisons with caution.

Finally, like any effort to quantify teaching and learning, there are inherent limitations to the data used to capture and represent the educational process. While helpful for obtaining a high level overview of the current state of CS education in Hawai'i's public schools, the numbers reported herein only represent a partial, point-in-time snapshot of the rich and complex realities underway to promote CS education within HIDOE. To complement the report's quantitative approach, all 15 complex areas were invited to submit two-paragraph summaries of their CS learning activities to document their CS-related efforts and initiatives. These optional complex area summaries are available in Appendix C.

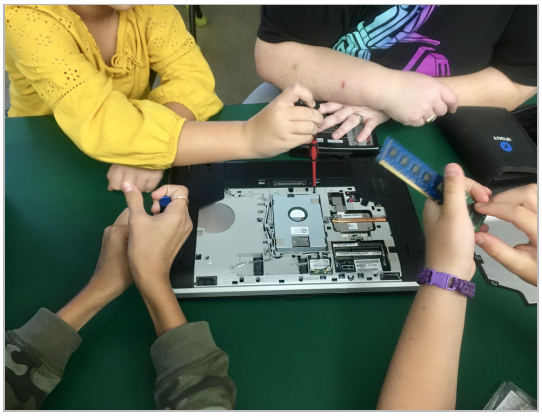


Image courtesy of HIDOE Computer Science Team

CS Courses

What is a CS course? To answer this question, one must first adopt a definition of CS. The definition used by HIDOE public schools aligns with the K-12 Computer Science Framework and is documented in the HIDOE K-12 CS: Guidance Document[1]. CS is defined as the following:

[1] The HIDOE K-12 CS: Guidance Document represents an ongoing collaboration between the Office of Curriculum and Instructional Design's Computer Science Learning Team and complex area CS teams.

> "The study of computers and algorithms, including their principles, their hardware and software designs, their implementation, and their impact on society. Learning computer science means learning how to create new technologies, rather than simply using them" (Tucker et al., 2003, p. 6).

With this definition in mind, HIDOE has defined what constitutes a CS course. In order for a public school course to be considered a CS course, it must meet three criteria. The first criterion for being a CS course is that students must learn CS during the school day. The second criterion is that the course/content must include time spent covering the five core concepts and seven practices specified in the K-12 CS Framework and Computer Science Teachers Association's (CSTA) CS Standards. The third criterion for being a CS course is the course must provide a broad representation of what CS is and it must lead to more specific courses/content within CS learning pathways.

Using these definitions, there were 75 CS courses with Authorized Courses and Code Numbers (ACCN)[2]. A complete list of these courses, including titles and descriptions, is available in Appendix A. In the 2021 - 2022 school year, 41 (55%) of the available 75 CS courses were taught one or more times. More insight into the 41 courses was revealed by examining the schools in which they were taught. For example, of the 257[3] HIDOE public schools, 107 (42%) offered one or more of the 41 CS courses. These numbers can be further disaggregated by elementary, middle/ intermediate, and high school grade bands. As shown in Table 2, 33 (20%) of HIDOE's 168 elementary schools, 29 (74%) of HIDOE's 39 middle / intermediate schools, and 33 (100%) of HIDOE's high schools offered one or more CS courses in the 2021 - 2022 school year. Additionally, of the 17 combo schools - those with combined grade bands (e.g., Lānaʻi High and Elementary School), 12 (71%) offered CS courses. For a complete list of HIDOE public schools and the number of CS courses being taught at each school, see Appendix B.

Table 2

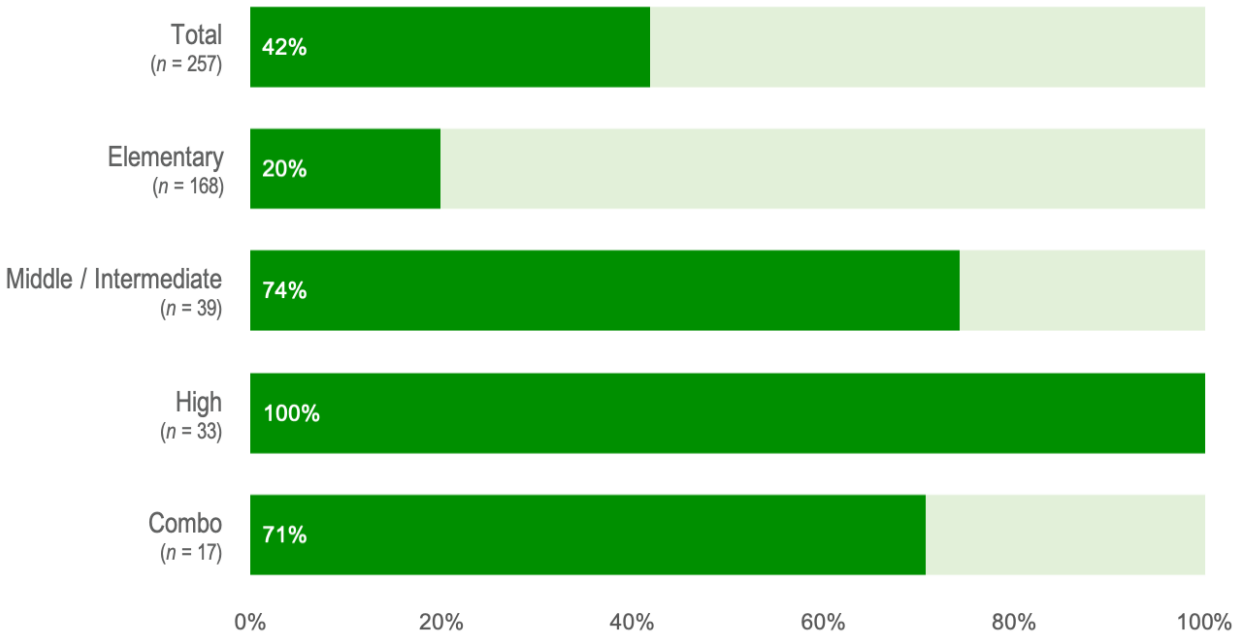
Schools Offering CS Courses by School Type (2021 - 2022)

School Type	Number of Schools	Schools Offering CS Courses Count (% of Schools by School Type)
Elementary	168	33 (20%)
Middle / Intermediate	39	29 (74%)
High	33	33 (100%)
Combo	17	12 (71%)
Total	257	107 (42%)

[2] For more information about HIDOE's CS ACCN courses, see https://bit.ly/2Q2Q8pN
[3] Excludes charter schools

Figure 1

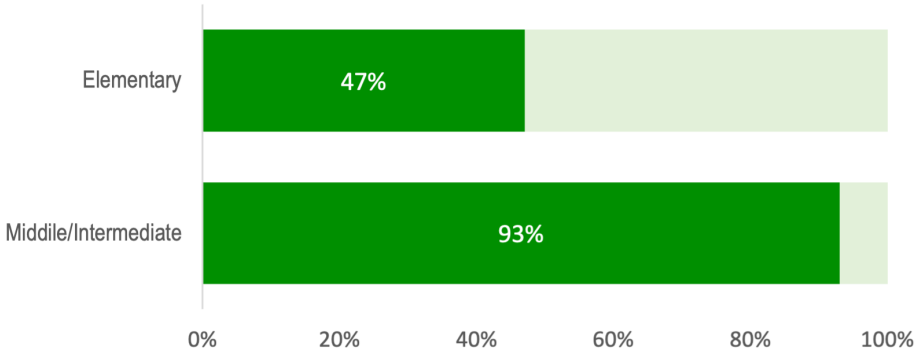
Percent of Schools Offering CS Courses by School Type



Determining the number of schools of each type allowed HIDOE to calculate the number of complex areas offering CS courses. At the time of this report, 7 (47%) of the fifteen complex areas had one or more elementary schools offering a CS course. In addition, 14 (93%) of the fifteen complex areas had one or more middle/intermediate schools offering a CS course. As shown in Figure 2, these numbers suggest on-the-ground efforts to increase CS education offerings in Hawai'i public schools are working.

Figure 2

Percent of Complex Areas Offering CS Courses by School Type (2021 - 2022)



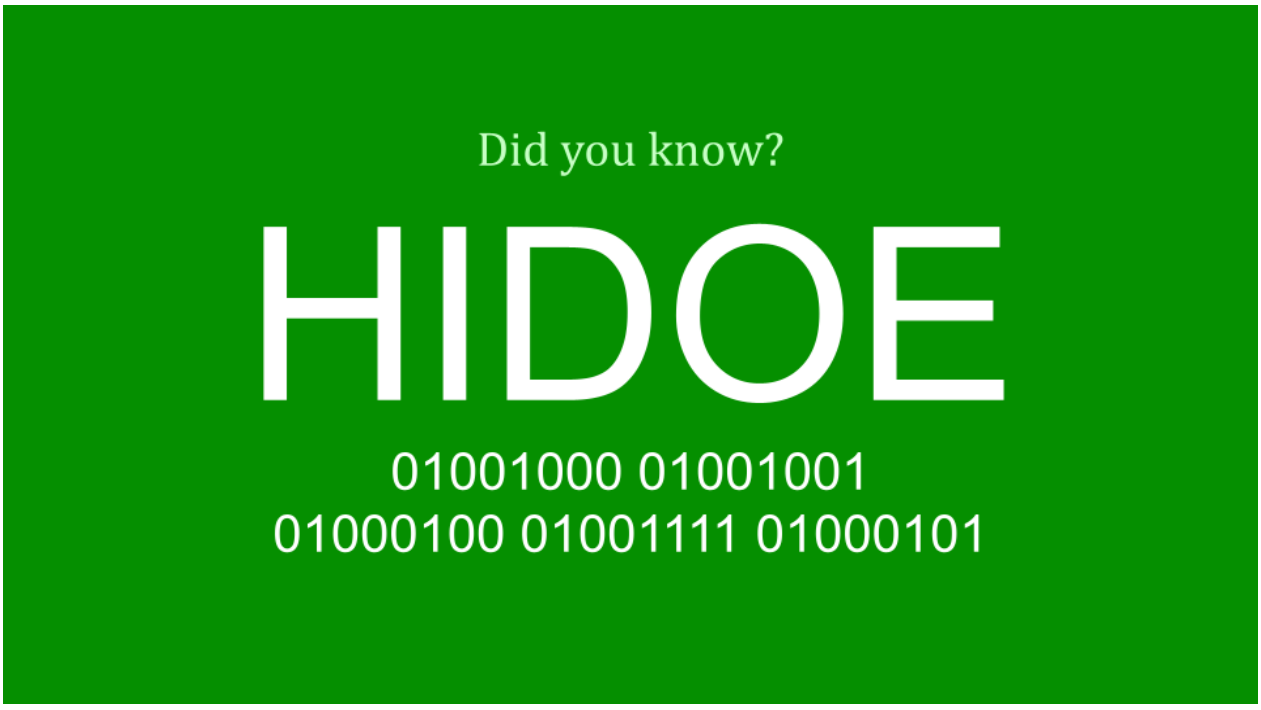
CS Course Content

Courses that include CS content were not previously tracked by HIDOE for analysis. However, the CSTA offers a progression of K-12 CS standards that instructors may integrate into their own courses as they see as appropriate. In sum, this progression is based on five core concepts: Computing Systems, Networks and the Internet, Data & Analysis, Algorithms and Programming, and Impacts of Computing. Nested within these core concepts are an additional 16 sub-concepts that cover wide ranging topics such as cybersecurity and safety, law, and ethics. In addition to these core concepts and their subconcepts, the standards are delineated by four levels, which describe what children should be able to do by the end of specific grades. These levels include Level 1A (Ages 5 - 7), Level 1B (Ages 8 - 11), Level 2 (Ages 11 - 14), and Level 3A (Ages 14 - 16). For a detailed cross-walk of CS core concepts by level, readers are directed to read the CSTA's progression of K-12 CS standards.

CS Course Enrollment

Courses

Of the total statewide student enrollment (155,582[4]), 24,278[5] (16%) students were enrolled in CS courses. The total number of unique students taking a CS course was 21,824 (14%). Of the unique students taking a CS course, 12,863 (59%) were elementary students, 4,838 (22%) came from middle/intermediate schools, and 3,410 (16%) were from high schools. Lastly, combo schools accounted for 713 (3%) of the CS enrollment



[4] Source: Statewide Public School Operating Status dashboard (data as of SY21-22 Quarter 2).
[5] Note: Total CS enrollment includes students enrolled in more than one CS course, which is different from unique CS enrollment.

Table 3

Student Enrollment by CS Course Code (2021 - 2022)[6]

Course Code	Enrollment	Course Code	Enrollment
ECS9500	148	TAU2212	12
ECS9800	432	TIN5320	141
ECS9900	113	TIN5512	91
EMS0010	1,831	TIN5513	86
EMS0020	1,942	TIN5520	151
EMS0030	2,074	TIN5716	9
EMS0040	1,984	TIU5510	251
EMS0050	2,019	TIU5511	236
EMS0060	1,270	TIU5610	137
EMS0091	1,820	TIU5713	116
EMS0600	291	TIU6100	100
EXS0100	2,084	TIU6101	4
EXS0110	1,108	TIU6102	3
EXS1200	349	TMG0410	1,223
EXS1400	665	TMG0500	62
EXS1500	598	TMG0501	1,409
TAN2110	61	TMG0502	108
TAN2311	8	ZMR1410	1
TAN2312	3	ZTG0100	3
TAU2210	1,302	ZTI1111	1
TAU2211	12		

[6] This list of CS courses is expected to change in the future as new CS courses are created and past CS courses are no longer classified or offered.

Gender

As shown in Table 4, 74,658 (48%) of all HIDOE students were identified as female and 80,924 (52%) were identified as male. Of the total statewide female student enrollment, 9,588 (13%) were enrolled in a CS course. Of the total statewide male student enrollment, 12,236 (15%) were enrolled in a CS course. Within HIDOE's CS courses, 9,588 (44%) of the total unique students (21,824) were female and 12,236 (56%) were male. There was an average of 592 (*SD* = 745.01) students enrolled in each CS course offered, with an average of 250 (*SD* = 352.78) females and 342 (*SD* = 398.51) males in each course.

Table 4

Gender of Students Enrolled in CS Courses (2021 - 2022)

	Females Count (% of Row Total)	Males Count (% of Row Total)	Total Count (% of All Students)
All Students	74,658 (48%)	80,924 (52%)	155,582 (100%)
Students Enrolled in CS Courses	9,588 (44%)	12,236 (56%)	21,824 (14%)

Race/Ethnicity

Of the 155,582 students enrolled in HIDOE, 24,377 (16%) identified as Asian (excluding Filipino), 4,177 (3%) were Black, 37,072 (24%) were Filipino, 3,539 (2%) were Hispanic, 34,901 (22%) were Native Hawaiian, 17,548 (11%) were Pacific Islander, 31,561 (20%) were White, and 2,407 (2%) identified as Other.

These counts and percentages can be used as points of reference for understanding the racial and ethnic make-up of the students enrolled in CS courses. As shown in Figure 3, 3,446 (14%) of HIDOE's 24,377 Asian students were enrolled in at least one CS course. Of HIDOE's 4,177 Black students, 468 (11%) were enrolled in at least one CS course. Of HIDOE's 37,072 Filipino students, 7,107 (19%) were enrolled in at least one CS course. Of HIDOE's 3,539 Hispanic students, 422 (12%) were enrolled in at least one CS course. Of HIDOE's 34,901 Native Hawaiian students, 3,994 (11%) were enrolled in at least one CS course. Of HIDOE's 17,548 Pacific Islander students, 2,938 (17%) were enrolled in at least one CS course. Of the 31,561 White students, 3,169 (10%) were enrolled in at least one CS course. Of HIDOE's 2,407 Other students, which represented Native Americans and those having two or more races/ethnicities, 280 (12%) were enrolled in at least one CS course. For a detailed breakdown of CS course enrollment by race and ethnicity see Table 5.

Image courtesy of HIDOE Computer Science Team

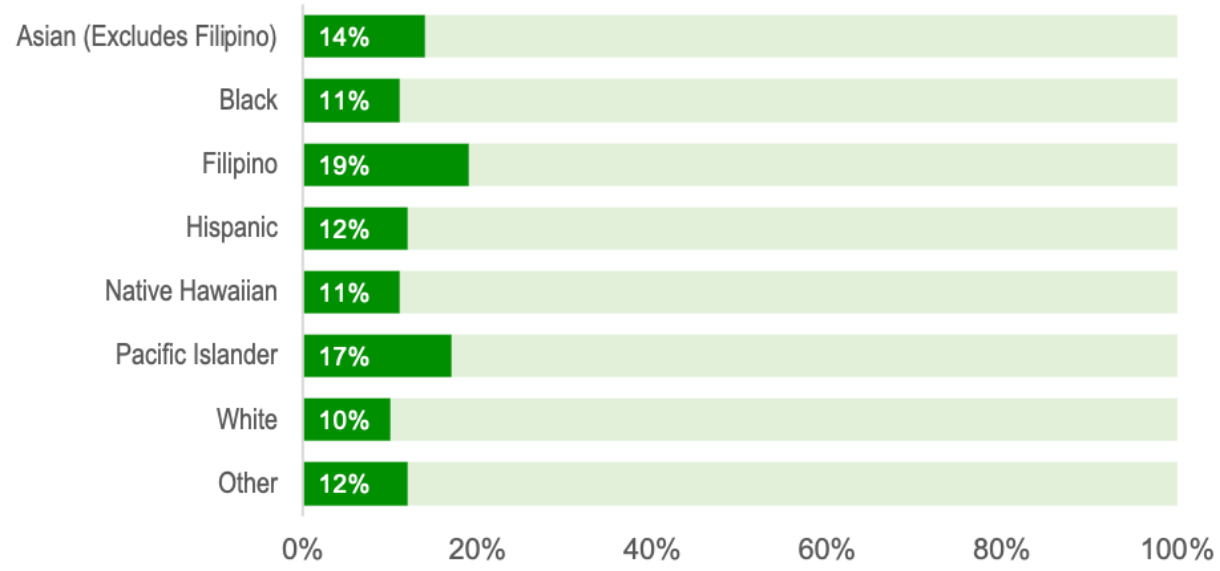
Table 5

Race/Ethnicity of Students Enrolled in CS Courses (2021 - 2022)

Race/Ethnicity	All Students	Students Enrolled in CS			
		Count	% of All Students	% of CS Students	% of Race/Ethnicity
Asian (Excluding Filipino)	24,377	3,446	2%	16%	14%
Black	4,177	468	0%	2%	11%
Filipino	37,072	7,107	5%	33%	19%
Hispanic	3,539	422	0%	2%	12%
Native Hawaiian	34,901	3,994	3%	18%	11%
Pacific Islander	17,548	2,938	2%	13%	17%
White	31,561	3,169	2%	15%	10%
Other	2,407	280	0%	1%	12%
Total	155,582	21,824	14%	100%	14%

Figure 3

Percent of Students Enrolled in CS Courses by Race/Ethnicity (2021 - 2022)



Special Education

In general, 16,226 (10%) of HIDOE's 155,582 students received special education. Of the 16,226 students receiving special education, 2,041 (13%) were enrolled in one or more CS courses. While the total number of students enrolled in CS courses was 21,824, 2,041 (9%) were designated as receiving special education. With an average of 592 (*SD* = 745.01) students enrolled in each CS course, about 66 (*SD* = 75.84) students were identified as special education.

Table 6

Special Education Students Enrolled in CS Courses (2021 - 2022)

	SPED Count (% of Row Total)	Non-SPED Count (% of Row Total)	Total Count (% of All Students)
All Students	16,226 (10%)	139,356 (90%)	155,582 (100%)
Students Enrolled in CS Courses	2,041 (9%)	19,783 (91%)	21,824 (14%)

English Language Learners

In general, 16,819 (11%) of HIDOE's 155,582 students were designated as English Language Learners (ELL). Of the 16,819 ELL students, 3,097 (18%) were enrolled in a CS course. Of the total unique students enrolled in CS courses (21,824), 3,097 (14%) were designated as ELLs. Given the average of 592 (*SD* = 745.01) students enrolled in each CS course, about 98 (*SD* = 150.02) were designated as ELLs.

Table 7

English Language Learners Enrolled in CS Courses (2021 - 2022)

	ELL Count (% of Row Total)	Non-ELL Count (% of Row Total)	Total Count (% of All Students)
All Students	16,819 (11%)	138,763 (89%)	155,582 (100%)
Students Enrolled in CS Courses	3,097 (14%)	18,727 (86%)	21,824 (14%)

Free and Reduced Lunch

In general, 79,097 (51%) of HIDOE's total enrollment of 155,582 students received free or reduced lunch. Of the total 79,097 statewide student enrollment receiving free or reduced lunch, 10,214[7] (13%) unique students enrolled in a CS course received free or reduced lunch. Of the total unique students enrolled in CS courses (21,824), 10,214 (47%) received free or reduced lunch. With an average of 592 students enrolled per CS course, about 293 (*SD* = 387.98) students received free or reduced lunch per CS course.

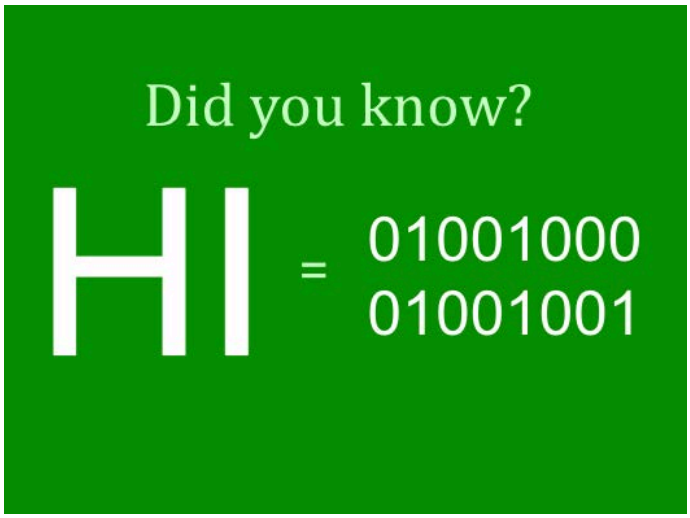
Table 8

Free and Reduced Lunch of Students Enrolled in CS Courses (2021 - 2022)

	Free/Reduced Lunch Count (% of Row Total)	Non-Free/Reduced Lunch Count (% of Row Total)	Total Count (% of All Students)
All Students	79,097 (51%)	76,485 (49%)	155,582 (100%)
Students Enrolled in CS Courses	10,214 (47%)	11,610 (53%)	21,824 (14%)

Grade Level

As shown in Table 9, CS courses are being offered at all grade levels. Across the grades, Grade 6 had the most students taking CS, representing 2,405 (11%) of all students enrolled in CS courses. At the elementary level, Grades 2 through 5 each had 9% of the total students enrolled in CS courses. Both Kindergarten and Grade 1 repsented 8% of all students enrolled in CS courses. At the middle/intermediate school level, Grade 7 represented 10% and Grade 8 represented 9% of all students enrolled in CS. At the high school level, Grade 11 represented 5% of CS enrollment while Grades 9, 10, and 12 represented 4% each.



[7] Note: This data includes the designation of Community Eligibility Provision (CEP) at HIDOE public schools in which all students within a CEP school received free lunch regardless of their free or reduced lunch status.

Table 9

Grade Level of Students Enrolled in CS Courses (2021 - 2022)

Grade Level[8]	All HIDOE Students Count (% of Column Total)	Unique CS Students Count (% of Column Total)
Kindergarten	11,651 (7%)	1,815 (8%)
Grade 1	11,534 (7%)	1,804 (8%)
Grade 2	12,195 (8%)	1,936 (9%)
Grade 3	12,600 (8%)	2,070 (9%)
Grade 4	12,479 (8%)	1,978 (9%)
Grade 5	12,632 (8%)	2,014 (9%)
Grade 6	12,244 (8%)	2,405 (11%)
Grade 7	9,544 (6%)	2,097 (10%)
Grade 8	12,038 (8%)	2,036 (9%)
Grade 9	14,680 (9%)	790 (4%)
Grade 10	12,212 (8%)	948 (4%)
Grade 11	11,359 (7%)	986 (5%)
Grade 12	10,414 (7%)	944 (4%)
Total	155,582 (100%)	21,824 (14%)

CS Course Instructors

CS courses would not be available without qualified teachers to deliver instruction. In total, there were 10,163 instructors working in schools during the 2021 - 2022 school year. In terms of unique instructors, however, there were 9,842 because a number of them are affiliated with more than one school. Of the 9,842 unique instructors working for HIDOE, 826 (8%) were CS instructors.

Gender

As shown in Table 10, 7,267 (74%) of HIDOE's 9,842 unique instructors identified as female and 2,575 (26%) identified as male. Of the 826 CS course instructors, 645 (78%) were female and 181 (22%) were male. Majority of female instructors with 572 (69%) worked at the elementary school level while the majority of males with 87 (11%) taught at the high school level.

[8] A single student with a non-traditional grade code (32) was excluded from this table.

Table 10

Gender of All Instructors and CS Instructors (2021 - 2022)

	Females Count (% of Row Total)	Males Count (% of Row Total)	Total Count (% of All Instructors)
All Instructors	7,267 (74%)	2,575 (26%)	9,842 (100%)
CS Course Instructors	645 (78%)	181 (22%)	826 (8%)

Race/Ethnicity

Of HIDOE's 9,842 unique instructors, 118 (1%) identified as Black, 314 (3%) identified as Chinese, 862 (9%) identified as Filipino, 2,105 (21%) identified as Japanese, 132 (1%) identified as Korean, 303 (3%) identified as Native Hawaiian, and 60 (1%) identified as Other Asian. In addition, 39 (0%) identified as Other Pacific Islander, 785 (8%) identified as part-Hawaiian, 2,510 (26%) identified as two or more races, 2,509 (25%) were White, and 105 (1%) identified other classifications.

As shown in Table 11, 13 (11%) of HIDOE's 118 Black instructors taught a CS course, representing 2% of all 826 CS course instructors. As for HIDOE's 314 Chinese instructors, 36 (11%) were CS course instructors, representing 4% of all CS course instructors. Out of HIDOE's 862 Filipino instructors, 115 (13%) were CS course instructors, representing 14% of all CS course instructors. Of HIDOE's 2,105 Japanese instructors, 233 (11%) were CS course instructors, making them the largest group among all CS course instructors at 28%. Of HIDOE's 132 Korean instructors, 7 (5%) taught a CS course, representing 1% of all CS course instructors. Of HIDOE's 303 Native Hawaiian instructors, 17 (6%) were CS course instructors, representing 2% of all CS course instructors. Of HIDOE's 60 Other Asian instructors, 7 (12%) taught a CS course, representing 1% of all CS course instructors. Of HIDOE's 39 Other Pacific Islanders, only 1 (3%) taught a CS course. Of HIDOE's 785 Part-Hawaiian instructors, 54 (7%) taught a CS course, representing 7% of all CS course instructors. Of HIDOE's 2,510 instructors having two or more ethnicities, 207 (8%) taught a CS course, making this group 25% of all CS course instructors. Of HIDOE's 2,509 White instructors, 136 (5%) taught a CS course, representing 15% of all CS course instructors.

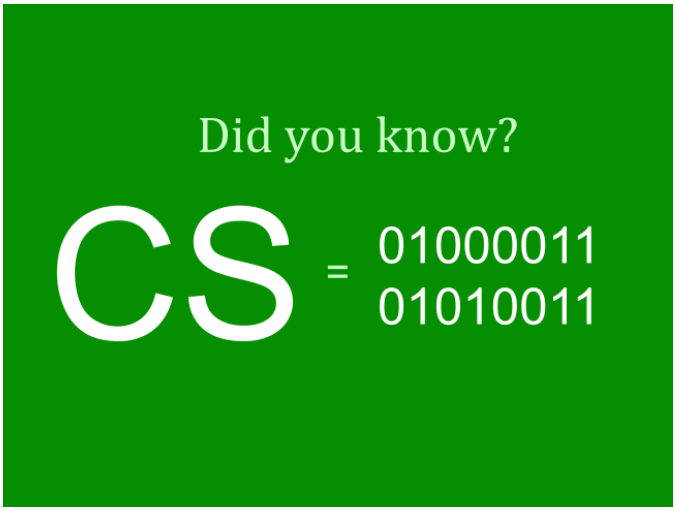


Table 11

Race/Ethnicity of All Instructors and CS Instructors (2021 - 2022)

Race/Ethnicity	All Instructors	CS Instructors			
		Count	% of All Instructors	% of CS Instructors	% of Race/Ethnicity
Black or African American	118	13	0%	2%	11%
Chinese	314	36	0%	4%	11%
Filipino	862	115	1%	14%	13%
Japanese	2,105	233	2%	28%	11%
Korean	132	7	0%	1%	5%
Native Hawaiian	303	17	0%	2%	6%
Other Asian	60	7	0%	1%	12%
Other Pacific Islander	39	1	0%	0%	3%
Part-Hawaiian	785	54	1%	7%	7%
Two or More Races	2,510	207	2%	25%	8%
White	2,509	136	1%	16%	5%
Other	105	0	0%	0%	0%
Total	9,842	826	8%	100%	8%

Degree / Applicable Certification

Of the 9,842 unique instructors working in HIDOE, 2,980 (30%) held a bachelor's degree, 4,086 (42%) held a master's degree, and 114 (1%) held a doctorate degree. Furthermore, 1,979 (20%) held a certificate, 663 (7%) held a professional diploma, and 20 (0%) were designated as having other degrees or certifications. As shown in Table 12, there were 826 CS course instructors in the school year 2021 - 2022. Of these 826 CS course instructors, 290 (35%) held a bachelor's degree, 321 (39%) held a master's degree, and 6 (1%) held a doctorate degree. Additionally, 121 (15%) instructors possess a certificate and 88 (11%) held a professional diploma. See Figure 4 for details about the percent of CS course instructors by degree/certification.

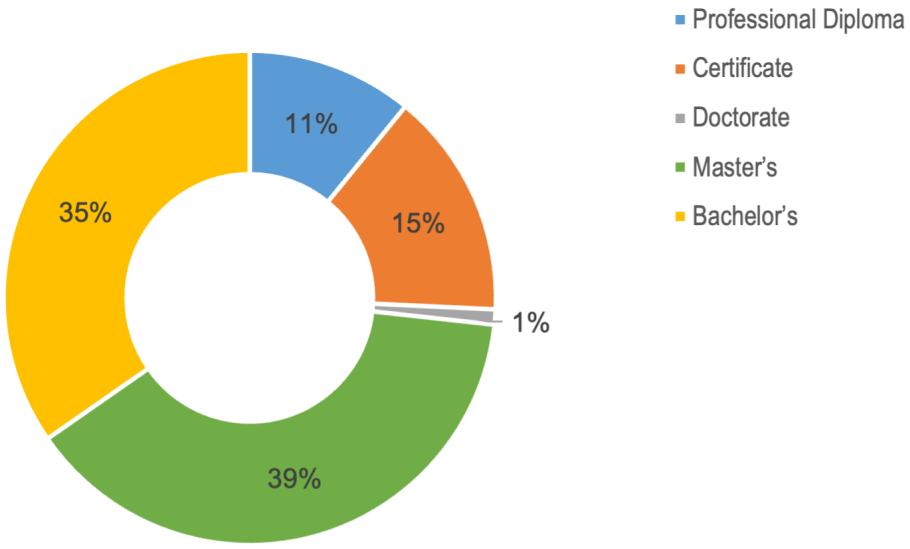
Table 12

Degree/Certification of All Instructors and CS Instructors (2021 - 2022)

Degree/Certification	Unique HIDOE Instructors Count (% of Column Total)	CS Instructors Count (% of Column Total)
Bachelor's	2,980 (30%)	290 (35%)
Master's	4,086 (42%)	321 (39%)
Doctorate	114 (1%)	6 (1%)
Certificate	1,979 (20%)	121 (15%)
Professional Diploma	663 (7%)	88 (11%)
Other	20 (0%)	0
Total	9,842	826

Figure 4

Percent of CS Instructors by Degree/Certification (2021 - 2022)



Conclusion

The purpose of this inaugural progress report was to establish baseline information that can be used to document HIDOE's progress toward the Act 158 legislative requirements. These legislative requirements are part of a larger initiative aimed at improving digital literacy by increasing CS education offerings. This report used data from Q3 of the 2021 - 2022 school year to provide a high level overview of the state of CS education. This was done by examining four specific areas: CS Courses, CS Course Content, CS Course Enrollment, and CS Course Instructors.

In general, the data presented herein suggests HIDOE is on track to meet or exceed its first legislative requirement. This requirement specifies that at least one public elementary school and one public middle or intermediate school in each complex needs to offer CS courses or content beginning with the 2022 - 2023 school year. As described earlier in this report, as of Q3 of the 2021 - 2022 school year, 7 (47%) of the fifteen complex areas had one or more elementary schools offering a CS course and 14 (93%) of the fifteen complex areas had one or more middle/intermediate schools offering a CS course. This is important baseline information to help stakeholders understand the current state of CS education in HIDOE and chart a path forward.

In closing, it is important to remind readers that reports such as these can only tell part of the story unfolding in schools around the state. For this reason, readers are highly encouraged to look through the narrative summaries presented in Appendix C. These brief narratives provide more information about the nuanced work happening within each complex area in the realm of CS. Finally, readers are encouraged to check the HIDOE CS program website for updates and resources pertaining to CS. The next version of this report is expected to be published in June 2023.

References

Tucker, A. (2003). *A model curriculum for K-12 computer science: Final report of the acm K-12 task force curriculum committee*. ACM. https://dl.acm.org/doi/pdf/10.1145/2593247

Appendix A

List of All ACCN Codes with Course Names and Descriptions[9]

ACCN	Title	Description
EMS0600	Introduction to Computer Literacy	This course is designed to introduce students to the fundamental 21st century computer literacy skills. Students will learn and apply the basic digital technologies to help them attain General Learner Outcome 6 in their various content area courses.
EXS0100	Introduction to Computer Science A	This course introduces students to computer programming concepts and skills. As much as possible, these concepts and skills will be taught in learning activities that take place in problem-solving context.
EXS0110	Introduction to Computer Science B	This course will cover the more advanced computer science concepts and skills. Students will have opportunities to apply them in a problem-solving context. Computer science concepts covered may include programming, networking, and/or cybersecurity. Students will have opportunities to learn and apply computational problem-solving skills.
TMG0410	Introduction to Technology (Semester)	This course is an introductory study of industry and technology. Learning experiences involve activities in one or more of the following systems of technology: communication, construction, manufacturing, transportation, and biotechnology and provide opportunities for creativity, problem solving, and cooperative/collaborative learning.
TMG0500	Career & Technical - Computer Literacy (Quarter)	This course is for those students who either have not had enough prior experience with using computers to be considered computer literate, or for those who wish to extend their knowledge of the basics of computer literacy. Emphasis on this course shall be on careers that involve information access, information processing, information management, and communication of information.
TMG0501	Career & Technical - Computer Literacy (Semester)	This course is for those students who either have not had enough prior experience with using computers to be considered computer literate, or for those who wish to extend their knowledge of the basics of computer literacy. Emphasis on this course shall be on careers that involve information access, information processing, information management, and communication of information.
TMG0502	Career & Technical - Computer Literacy (Year)	This course is for those students who either have not had enough prior experience with using computers to be considered computer literate, or for those who wish to extend their knowledge of the basics of computer literacy. Emphasis on this course shall be on careers that involve information access, information processing, information management, and communication of information.
ECS1000	IB computer science standard level year 1	Students will study the fundamental aspects of programming and computer science using Python and Java programming language. Major topics of study will include the Linux operating system, software development, and the history of computing. Labs are a fundamental part of the course and students are expected to apply concepts.

[9] This list of CS courses is expected to change in the future as new CS courses are created and past CS courses are no longer classified or offered.

ACCN	Title	Description
ECS2000	IB computer science standard level year 2	Students will expand upon the concepts and principles of the Year 1 course. Major topics of study will include computer mathematics and logic, abstract data structures and algorithms, networking basics, and file organization. A major emphasis of the course is preparation for the IB exam with students addressing a real world problem using the software development cycle to create a solution.
ECS3000	IB computer science higher level	Students will learn the core computer science topics of systems life cycle and software development, programming in Java, and system fundamentals. Higher Level students are also expected to master computer mathematics and logic, abstract data structures and algorithms, and advance system fundamentals.
ECS4000	IB computer science higher level year 2	Students will expand upon the concepts learned in Year 1. A major emphasis of the course will be completion of the program dossier and preparation for the IB exam. Higher level students . are expected to participate in more content hours and problem solving assignments. IB topics 4-6 should be mastered and concepts applied to real world computing issues.
EXS1200	Computer Literacy - Computing Tools Info Age	This course is designed to introduce students to the fundamental 21st century computer literacy and digital citizenship skills. Students will learn and apply the basic digital technologies to help them attain General Learner Outcome 6 in their various content area courses.
EXS1300	Introduction to Computer Science	The Introduction to Computer Science course is a first year computer science course which gives students the opportunity to explore several important topics of computing using their own ideas and creativity to develop an interest in computer science that will foster further endeavors in the field.
EXS1400	Computer Science A	This hands-on course introduces students to computer science concepts and skills. Computer science concepts covered include programming, networking, and cybersecurity. Students will have opportunities to learn and apply computational problem-solving skills.
EXS1500	Computer Science B	In this hands-on course, students will learn more advanced computer science concepts and skills. Computer science concepts covered include programming, networking and cybersecurity. Students will have opportunities to learn and apply computational problem-solving skills.
EXS1600	Computer Programming - Introduction to JavaScript	The course teaches the foundations of computer science and basic programming, with an emphasis on helping students develop logical thinking and problem solving skills. Once students complete the course, they will be able to program in JavaScript.
EXS1700	Computer Programming - Introduction to Python	The course teaches the foundations of computer science and basic programming, with an emphasis on helping students develop logical thinking and problem solving skills. Once students complete the course, they will be able to program in Python.
ECS9900	Directed Study - Computer Science	This course allows highly motivated students to identify a project of interest and to plan a constructive mode of learning to accomplish specific objectives. Such a project shall be designed under the guidance of a computer science teacher, and may also include the guidance of a community computer professional. The student must have earlier demonstrated the motivation and ability to engage in independent study in other related courses and must have the approval of the computer science teacher and/or counselor.

ACCN	Title	Description
		May be repeated for credit.
FVW1000	Computer Art	This course provides students with opportunities to explore art and computer technology to develop a unique blend of skills that may be translated to computers. Students will learn to use various computer software programs, techniques, and strategies along with computer hardware to enhance, modify, or create two- and three- dimensional digital art. Activities may be applied to visual solutions for advertising, publishing, and animation. Issues and topics on standards, ethics, and qualifications for computer art will also be addressed.
ECS9500	Advanced Placement (AP) Computer Science A	This course prepares high school students for the Advanced Placement (AP) Computer Science A/ AB Examination and is aimed at helping students develop the ability to design and implement computer-based solutions to problems in several application areas; design and select appropriate algorithms and data structures to solve problems; code fluently in a well-structured fashion using an accepted high-level language, e.g., Java; and to identify the major components of a computer system (hardware and software), their relationship to one another, and the roles of these components within the system. Students recognize the ethical and social implications of computer use. AP Computer Science meets the requirements as set forth in the Advanced Placement Computer Science Program course description and is designed to give students the necessary information and skills to program in Java. In addition to the topics studied in Advanced Placement Computer Science A, the Computer Science AB course deals more formally with program verification and algorithm analysis. Can be delivered through E-School.
ECS9600	Advanced Placement (AP) Computer Science A - A (For Semester 1 scheduling)	Only the year course for this ACCN should be used for scheduling students. This semester number is assigned to the year course and is to be used to award/record credit given to students unable to complete the entire year. Refer to the year course description for this ACCN.
ECS9700	Advanced Placement (AP) Computer Science A - B (For Semester 2 scheduling)	Only the year course for this ACCN should be used for scheduling students. This semester number is assigned to the year course and is to be used to award/record credit given to students unable to complete the entire year. Refer to the year course description for this ACCN.
ECS9800	Advanced Placement (AP) Computer Science Principles	The AP Computer Science Principles course is designed to be equivalent to a first-semester introductory college computing course. The curriculum framework provides a detailed description of the course content. The key sections of this framework are described in the following text: -computational thinking practices (connecting computing, creating computational artifacts, abstracting, analyzing problems and artifacts, communicating, collaborating) -seven big ideas (creativity, abstraction, data and information, algorithms, programming, the internet, global impact) -learning objectives that integrate computational thinking practice or skill -essential knowledge statements

ACCN	Title	Description
ECS9810	Advanced Placement (AP) Computer Science Principles A	The AP Computer Science Principles course is designed to be equivalent to a first-semester introductory college computing course. The curriculum framework provides a detailed description of the course content. The key sections of this framework are described in the following text: -computational thinking practices (connecting computing, creating computational artifacts, abstracting, analyzing problems and artifacts, communicating, collaborating) -seven big ideas (creativity, abstraction, data and information, algorithms, programming, the internet, global impact) -learning objectives that integrate computational thinking practice or skill -essential knowledge statements
ECS9820	Advanced Placement (AP) Computer Science Principles B	The AP Computer Science Principles course is designed to be equivalent to a first-semester introductory college computing course. The curriculum framework provides a detailed description of the course content. The key sections of this framework are described in the following text: -computational thinking practices (connecting computing, creating computational artifacts, abstracting, analyzing problems and artifacts, communicating, collaborating) -seven big ideas (creativity, abstraction, data and information, algorithms, programming, the internet, global impact) -learning objectives that integrate computational thinking practice or skill -essential knowledge statements
TIU5610	Computer Electronics	This course is an exploratory course in the principles of computers and their applications in our technological society. Instructional units include circuit fundamentals, basic number systems, introduction to digital and analog computers and their uses, and electronic controls and devices. Recommended Prerequisite: Completion of TIC5010 IET Career Pathway Core.
TIU5611	Computer Electronics A	Only the year course for this ACCN should be used for scheduling students. This semester number is assigned to the year course and is to be used to award/record credit given to students unable to complete the entire year. Refer to the year course description for this ACCN.
TIU5612	Computer Electronics B	Only the year course for this ACCN should be used for scheduling students. This semester number is assigned to the year course and is to be used to award/record credit given to students unable to complete the entire year. Refer to the year course description for this ACCN.
TIU5713	Networking Fundamentals and Local Area Networks	This course provides skills and knowledge on how WANs are built: what technologies are used, and how systems are configured to maintain and troubleshoot WANs. Students will also learn about networking architectures and how they are integrated into corporate computing environments. Recommended Prerequisite: Completion of TIC5010 IET Career Pathway Core.
TIN5716	Wide Area Networks & Networking Architecture	This course provides knowledge and skills needed to build LANs: what physical cables are used, how these cables are connected together and how hardware platforms attach to LANs. Students will also learn about network operating system (NOS) software and applications that run on LANs. Recommended Prerequisite: Completion of TIU5713 Networking Fundamentals and LAN.

ACCN	Title	Description
TIN5520	Cybersecurity	Network Security builds upon the knowledge learned from the IET Core and Network and LAN Fundamentals and has students apply that knowledge into securing system networks. Through this course, students will identify vulnerabilities and attack mechanisms to a network on various platforms and use intrusion detection systems and other methods to mitigate security risks. Emphasis will be placed on the application of skills in detection and the utilization of strategies to combat identified threats. Prerequisite: Completion of TIC5010 IET Career Pathway Core and TIU5713 Network Fundamentals and LAN.
TIU5510	A+ Certification 1: Intro to Computer Systems (A)	A+ Certification A Introduction discusses the history of computer systems, the hardware content of a computer and their mechanics for constructing computer systems. The topics covered will include safety, basic electronics, power supply, chipsets, motherboards, Pentium processors, and USB Standards. An internship program will be recommended for students. The four (4) coursesTIU5510, TIU5511, TIN5512, and TIN5513—comprise a two-year program of studies which leads to A+ Certification, a recognized computer industry certification that certifies the competency of beginning computer service technicians.
TIU5511	A+ Certification 2: Intro to Computer Systems (B)	A+ Certification B introduces the computer operating systems. The topics covered will include MS-DOS and Windows operating systems (covering past and current versions, e.g., 3.11, 97, and 98), beginning Internet Explorer and other web browsers, basic networking, and troubleshooting. An internship program will be recommended for students. Recommended Prerequisite: Completion of TIN5510 A+ Certification 1: Introduction to Computer Systems (Course A)
TIN5512	A+ Certification 3: Operating Systems (C)	A+ Certification 3: Introduction to Computer Semester Systems (Course C)
TIN5513	A+ Certification 4: Internships (D)	A+ Certification 4: Introduction to Computer Semester Systems (Course D)
TIU6100	Information Technology 1	Course Description: This course is designed to provide students will basic knowledge and skills integral to informational technology careers. Cyber fundamentals of networking, coding and security, and their connection to technological systems are emphasized. Contexts for learning include the interrelationship between basic cyber fundamentals and the conditions necessary to monitor, maintain, analyze and defend systems. Prerequisite: Completion of TIC5010 IET Core
TIU6101	Information Technology 1A	Course Description: This course is designed to provide students will basic knowledge and skills integral to informational technology careers. Cyber fundamentals of networking, coding and security, and their connection to technological systems are emphasized. Contexts for learning include the interrelationship between basic cyber fundamentals and the conditions necessary to monitor, maintain, analyze and defend systems. Prerequisite: Completion of TIC5010 IET Core
TIU6102	Information Technology 1B	Course Description: This course is designed to provide students will basic knowledge and skills integral to informational technology careers. Cyber fundamentals of networking, coding and security, and their connection to technological systems are emphasized. Contexts for learning include the interrelationship between basic cyber fundamentals and the conditions necessary to monitor, maintain, analyze and defend

ACCN	Title	Description
		systems. Prerequisite: Completion of TIC5010 IET Core
TIU5310	Design Technology 1	This course provides classroom learning experiences that are found in drafting technology. Learning activities include: design, spatial visualization and techniques, sketching and use of digital tools, shape and size description, auxiliaries, rotation, pictorial drawings, computer aided design, and the creation of two dimensional and three dimensional models for problem solution. Recommended Prerequisite: Completion of TIC5010 IET Career Pathway Core.
TIN5320	Design Technology 2	This course organizes learning experiences, which emphasizes theory, use of computer aided design, and laboratory work as related to designing, and translating data or specifications. Planning, preparing, and interpreting mechanical, architectural, structural, electronics, topographical, and designs and schematics are included. Instruction is designed to provide experiences with computer aided design and other industry standard tools to create solutions to real-world problems. Recommended prerequisite: Completion of TIC5010 IET Career Pathway Core and TIU5310 Design Technology 1.
TAU2210	Digital Media Tech	This course is designed to equip students with the necessary skills to support and enhance their use of digital media technologies. Topics will include the creation of media content, its communicative abilities, the production process, and legal concerns. Recommended prerequisite: Completion of TAC2010 Arts and Communication Career Pathway Core.
TAU2211	Digital Media Tech A	Only the year course for this ACCN should be used for scheduling students. This semester number is assigned to the year course and is to be used to award/record credit given to students unable to complete the entire year. Refer to the year course description for this ACCN.
TAU2212	Digital Media Tech B	Only the year course for this ACCN should be used for scheduling students. This semester number is assigned to the year course and is to be used to award/record credit given to students unable to complete the entire year. Refer to the year course description for this ACCN.
TAN2311	Gaming	The purpose of this course is to provide students with a foundation in the principles of interactive entertainment media and design. This will include a study of the gaming industry and gaming as a media form. Emphasis will be placed on designs and products that meet specific goals or criteria. Recommended Prerequisite: Completion of TAC2010 Arts and Communication Career Pathway Core and TAU2210 Digital Med Tech.
TAN2312	Gaming A	Only the year course for this ACCN should be used for scheduling students. This semester number is assigned to the year course and is to be used to award/record credit given to students unable to complete the entire year. Refer to the year course description for this ACCN.
TAN2313	Gaming B	Only the year course for this ACCN should be used for scheduling students. This semester number is assigned to the year course and is to be used to award/record credit given to students unable to complete the entire year. Refer to the year course description for this ACCN.
TAN2110	Web Design	The purpose of this course is to provide students with a foundation in the principles of animated media. This will include a history of animation, a collaborative production process, and an introduction to alternative animation forms and techniques.

ACCN	Title	Description
		Recommended Prerequisite: Completion of TAC2010 Arts and Communication Career Pathway Core and TAU2210 Digital Med Tech.
FVW1000	Computer Art	This course provides students with opportunities to explore art and computer technology to develop a unique blend of skills that may be translated to computer. Students will learn to use various computer software programs, techniques, and strategies along with computer hardware to enhance, modify, or create two- and three- dimensional digital art. Activities may be applied to visual solutions for advertising, publishing, and animation. Issues and topics on standards, ethics, and qualifications for computer art will also be addressed.
ZMR1410	Running Start: Discrete Math for Computer Science I	UH at Manoa (CS 135) This course includes logic, sets, functions, matrices, algorithmic concepts, mathematical reasoning, recursion, counting techniques, and probability theory. (FS)
ZMR1495	Running Start: Animation Programming	A gentle introduction to programming with user-friendly software (Alice). Students use storyboarding design strategies and create Disney/Pixar-like animations with objects in three-dimensional virtual worlds. These animations promote an understanding of basic programming constructs including control structures and object-oriented programming. Projects based on Hawaiian and Pacific themes will be emphasized. Open to all students; especially intended for those with no programming experience. Computer science majors may take this course to prepare for CS 150.
ZMR1500	Running Start: Introduction To Computer Science I	** Reference specific Community College within the University of Hawaii system for information on this course.** Running Start: University of Hawaii - Hilo CS150-Intro to Computer Science I Intended for Computer Science majors and all others interested in the first course in programming. An overview of the fundamentals of computer science emphasizing problem solving, algorithm development, implementation, and debugging/testing using an object-oriented programming language. Running Start: Leeward Community College/ University of Hawaii West Oahu ICS111-Introduction to Computer Science I Intended for Computer Science majors and all others interested in the first course in programming. An overview of the fundamentals of computer science emphasizing problem solving, algorithm development, implementation, and debugging/testing using an object-oriented programming language.
ZMR1510	Running Start: Introduction To Computer Science Ii	** Reference specific Community College within the University of Hawaii system for information on this course ** Running Start: University of Hawaii - Hilo CS 151 - Introduction to Computer Science II Reinforces and strengthens problem solving skills using more advanced features of programming languages and algorithms such as recursion, pointers, and memory management. Emphasizes the use of data structures such as arrays, lists, stacks, and queues.
ZMR2000	Running Start: Web Technology I	**Reference specific Community College within the University of Hawaii system for information on this course** Running Start: University of Hawaii – Hilo- North Hawaii Education and Research Center CS 200 Web Technology I Introductory web page authoring. Creation of client-side web pages using web authoring language and style

ACCN	Title	Description
		sheets. Consideration of graphical design elements, validation, browser compatibility, and accessibility. Use of scripting language to add dynamic elements to web pages.
ZMR2410	Running Start: Discrete Math For Computer Sci Ii	** Reference specific Community College within the University of Hawaii system for information on this course ** Running Start: University of Hawaii - Hilo CS 241 - Discrete Math for Computer Sci II Includes functions, matrices, graph theory, trees and their applications, BOOlean algebra, introduction to formal languages and automata theory. Changed to 5-point scale: 11/16/16
ZTG0100	Running Start: Computing Literacy and Application	** Reference specific Community College within the University of Hawaii system for information on this course ** Running Start: Windward Community College ICS 100 – Computing Literacy and Application This course is an introduction to information technology. Upon completion of the course, the student should be able to: Describe the process of changing data into information; Identify the benefits of being computing literate and how computing competency will affect their future; Describe how computers have affected society; Discuss computer ethics; Demonstrate an understanding of computer terminology; Identify hardware components; Identify and describe a variety of software programs; Produce word processing, spreadsheet and database documents; Manipulate graphical objects in the above; Demonstrate an understanding of online and multimedia communication; Manage assignments using the Word Wide Web and the Internet.
ZTI1011	Running Start: Digital Tools for the Info World	RUNNING START: DIGITAL TOOLS FOR THE INFO WORLD Course addition effective SY 2016-17 for Leeward Community College
ZTI1050	Running Start: Introduction to Computing Skills	Running Start: Windward Community College ICS 105- Introduction to Computing Skills In this introductory computing course, students will learn basic file management, digital communication, word processing, and presentation software. Students will explore various computing systems and terminology. This course is recommended for students inexperienced in computing.
ZTI1105	Running Start: Introduction to Programming	** Reference specific Community College within the University of Hawaii system for information on this course ** Running Start: Leeward Community College ICS 110 Introduction to Programming A practical introduction to the theory of stored program digital computers. Students are taught flowcharting, documentation techniques and the use of a programming language to solve various scientific and business-oriented problems. The emphasis is on basic concepts and functional characteristics in the design and development of computer programs. Formerly ICS 130
ZTI1106	Running Start: Introduction to Programming	A gentle introduction to coding for anyone. Students use design strategies to create programs. Promotes an understanding of basic programming constructs, including control structure and object-oriented programming. The alpha suffix indicates technology such as: P - Python, C - C/C++, D - Animation/Java, M - Mobile, R - Robotics, G - Games, S - C#. Students are able to receive credit for completing the course if the alpha differs.

ACCN	Title	Description
ZTI1111	Running Start: Introduction to Computer Science	** Reference specific Community College within the University of Hawaii system for information on this course ** Running Start: Leeward Community College ICS 111- Introduction to Computer Science An overview of the fundamentals of computer science emphasizing problem solving, algorithm development, implementation, and debugging/testing using an object-oriented programming language.
ZTI1113	Running Start: Introduction to Databases	** Reference specific Community College within the University of Hawaii system for information on this course ** Running Start: Leeward Community College ICS 129 (Formerly ICS 113) - Database Fundamentals This course covers the fundamental concepts in database technology, including storage structures, access methods, recovery, concurrency and integrity. The relational model and its implementation will be covered in depth together with an overview of database administration, including modeling and design activities. A substantial part of the course involves the development of an understanding of database concepts.
ZTI1141	Running Start: Discrete Math for Computer Science I	** Reference specific Community College within the University of Hawaii system for information on this course ** Running Start: Leeward Community College ICS 141- Discrete Mathematics for Computer Science Includes logic, sets, functions, matrices, algorithmic concepts, mathematical reasoning, recursion, counting techniques, probability theory.
ZTI1170	Running Start: Ethics for the Digital World	** Reference specific Community College within the University of Hawaii system for information on this course ** Running Start: Leeward Community College ICS 170- Ethics for the Digital World An overview of ethical issues and regulations in the digital world related to networked communications, intellectual property, privacy, computer and network security, computer reliability, and workplace issues.
ZTI1171	Running Start: Introduction to Computer Security	** Reference specific Community College within the University of Hawaii system for information on this course ** Running Start: Windward Community College ICS 171 Introduction to Computer Security. Examines the essentials of computer security, including risk management, the use of encryption, activity monitoring, intrusion detection; and the creation and implementation of security policies and procedures to aid in security administration.
ZTI1184	Running Start: Introduction to Networking	** Reference specific Community College within the University of Hawaii system for information on this course ** Running Start: Windward Community College ICS 184 Introduction to Networking. This course provides the student with the knowledge and skills to manage, maintain, troubleshoot, install, operate and configure basic network infrastructure, as well as to describe networking technologies, basic design principles and adhere to wiring standards and use testing tools. The course also introduces the student to network security concepts.

ACCN	Title	Description
SIC8500	IB Comp Sci Modeling Hlv 1	This course integrates the natural sciences with computer science, through exploration and application of the physical science behind computers and networking and through applying computer models and simulations to the natural world. Students will engage in computational thinking, develop computational solutions, and apply the body of knowledge, methods, and techniques that characterize computer science. As part of the modeling and simulation option, students will use computer science skills to solve problems or represent phenomena in life, physical, and/or earth and space sciences. Throughout the course, students will engage in the practices of science and engineering and apply crosscutting concepts to understanding computing, computer systems, and modeling and simulation of the natural world. This course is an interdisciplinary course that integrates science and computer science. It satisfies a HIDOE graduation requirement for Science, but it may not be accepted by colleges and universities as a Science credit for admissions. Students may consider taking an additional natural science course for purposes of college admissions.
SIC8910	IB Comp Sci Modeling Hlv 2	This course integrates the natural sciences with computer science, through exploration and application of the physical science behind computers and networking and through applying computer models and simulations to the natural world. Students will engage in computational thinking, develop computational solutions, and apply the body of knowledge, methods, and techniques that characterize computer science. As part of the modeling and simulation option, students will use computer science skills to solve problems or represent phenomena in life, physical, and/or earth and space sciences. Throughout the course, students will engage in the practices of science and engineering and apply crosscutting concepts to understanding computing, computer systems, and modeling and simulation of the natural world. This course is an interdisciplinary course that integrates science and computer science. It satisfies a HIDOE graduation requirement for Science, but it may not be accepted by colleges and universities as a Science credit for admissions. Students may consider taking an additional natural science course for purposes of college admissions.
XAT1000	STEM Capstone	This elective course is self-directed and project based. Students are expected to demonstrate skilled or masterful levels for all STEM Competencies as they address the following major outcomes for the course: * Research: Conduct research to reflect upon and determine a project to address a specific community need. * Design: Design, build, test, refine, and deliver a solution to address the need. *Reflection: Engage in ongoing reflection throughout all levels of the project design and its impacts on the local and global community. *Technology: Learn to use technologies with the aid of online self-guided tutorials, student mentoring, and/or professional assistance arranged by the course facilitator. Accessible technology may include, but is not limited to; probe-ware, biotechnology, bio-agricultural systems, computer-aided design, 3-D modeling, architectural design, animation, games design, surveying and mapping (GPS), Geographic Information Systems, programming, database applications, web page design, digital photo and video editing. * Career Skills; Acquire career-building skills. Skills include reflection on and integration of personal values with career interests, strategic resume development, and enhancing job search capability. Project-based learning experiences will specifically address skills with STEM fields. Successful projects will integrate the practice and development of specific skills from all four areas -- Science, Technology, Engineering Design, and Mathematics. STEM Capstone projects

ACCN	Title	Description
		will address all four areas of STEM and will directly reflect meet or exceed levels of all STEM Competencies.
EMS 0091	Computer Science Grade K	This ACCN course is only to be used for Elementary Master Scheduling. Course content is determined by Hawaii State Standards
EMS 0010	Computer Science Grade 1	This ACCN course is only to be used for Elementary Master Scheduling. Course content is determined by Hawaii State Standards
EMS 0020	Computer Science Grade 2	This ACCN course is only to be used for Elementary Master Scheduling. Course content is determined by Hawaii State Standards
EMS 0030	Computer Science Grade 3	This ACCN course is only to be used for Elementary Master Scheduling. Course content is determined by Hawaii State Standards
EMS 0040	Computer Science Grade 4	This ACCN course is only to be used for Elementary Master Scheduling. Course content is determined by Hawaii State Standards
EMS 0050	Computer Science Grade 5	This ACCN course is only to be used for Elementary Master Scheduling. Course content is determined by Hawaii State Standards
EMS 0060	Computer Science Grade 6	This ACCN course is only to be used for Elementary Master Scheduling. Course content is determined by Hawaii State Standards

Appendix B

List of Schools and Number of CS Courses Offered by Complex Area

Quick Links

Farrington-Kaiser-Kalani

Elementary School	Number of CS Courses
Aina Haina	1
Fern	2
Hahaione	0
Kaewai	6
Kahala	0
Kalihi	6
Kalihi-Kai	5
Kalihi-Uka	6
Kalihi-Waena	6

Elementary School	Number of CS Courses
Kamiloiki	2
Kapalama	6
Koko Head	6
Liholiho	1
Linapuni	0
Puuhale	6
Waikiki	3
Wilson	0

Middle/Intermediate School	Number of CS Courses
Dole Middle	2
Kaimuki Middle	3

Middle/Intermediate School	Number of CS Courses
Kalakaua Middle	0
Niu Valley Middle	2

High School	Number of CS Courses
Farrington	1
Kaiser	8

High School	Number of CS Courses
Kalani	7

Combo School	Number of CS Courses
HI School for the Deaf & Blind	10

Kaimuki-McKinley-Roosevelt

Elementary School	Number of CS Courses
Ala Wai	0
Aliiolani	6
Hokulani	0
Jefferson	0
Kaahumanu	0
Kaiulani	0
Kauluwela	0
Kuhio	0
Lanakila	0
Likelike	0

Elementary School	Number of CS Courses
Lincoln	0
Lunalilo	0
Maemae	0
Manoa	0
Noelani	0
Nuuanu	0
Palolo	0
Pauoa	6
Royal	0

Middle/Intermediate School	Number of CS Courses
Jarrett Middle	0
Kawananakoa Middle	0
Keelikolani Middle	0

Middle/Intermediate School	Number of CS Courses
Stevenson Middle	0
Washington Middle	4

High School	Number of CS Courses
Kaimuki	2
McKinley	4

High School	Number of CS Courses
Roosevelt	2

Combo School	Number of CS Courses
Anuenue	2

Aiea-Moanalua-Radford

Elementary School	Number of CS Courses
Aiea	0
Aliamanu	0
Hickam	0
Makalapa	0
Moanalua	7
Mokulele	0
Nimitz	0
Pearl Harbor	0

Elementary School	Number of CS Courses
Pearl Harbor Kai	0
Pearl Ridge	0
Red Hill	0
Salt Lake	0
Scott	0
Shafter	0
Waimalu	0
Webling	0

Middle/Intermediate School	Number of CS Courses
Aiea Inter	1
Aliamanu Middle	0

Middle/Intermediate School	Number of CS Courses
Moanalua Middle	0

High School	Number of CS Courses
Aiea	3
Moanalua	5

High School	Number of CS Courses
Radford	4

Leilehua-Mililani-Waialua

Elementary School	Number of CS Courses
Haleiwa	0
Helemano	0
Iliahi	0
Inouye	0
Kaala	0
Kipapa	0
Mililani Ike	0

Elementary School	Number of CS Courses
Mililani Mauka	0
Mililani Uka	0
Mililani Waena	0
Solomon	0
Wahiawa	0
Waialua	0
Wheeler	0

Middle/Intermediate School	Number of CS Courses
Mililani Middle	2
Wahiawa Middle	3

Middle/Intermediate School	Number of CS Courses
Wheeler Middle	1

High School	Number of CS Courses
Leilehua	6

High School	Number of CS Courses
Mililani	12

Combo School	Number of CS Courses
Waialua High & Inter	4

Campbell-Kapolei

Elementary School	Number of CS Courses
Barbers Point	6
Ewa Beach	0
Ewa	0
Holomua	0
Hookele	0
Iroquois Point	0

Elementary School	Number of CS Courses
Kaimiloa	0
Kapolei	0
Keoneula	0
Makakilo	0
Mauka Lani	0
Pohakea	0

Middle/Intermediate School	Number of CS Courses
Ewa Makai Middle	0
Honouliuli Middle	2

Middle/Intermediate School	Number of CS Courses
Ilima Inter	1
Kapolei Middle	4

High School	Number of CS Courses
Campbell	12

High School	Number of CS Courses
Kapolei	8

Pearl City-Waipahu

Elementary School	Number of CS Courses
August Ahrens	7
Honowai	7
Kaleiopuu	7
Kanoelani	0
Lehua	7
Manana	7
Momilani	7

Elementary School	Number of CS Courses
Palisades	7
Pearl City	7
Pearl City Highlands	7
Waiau	7
Waikele	7
Waipahu	7

Middle/Intermediate School	Number of CS Courses
Highlands Inter	2

Middle/Intermediate School	Number of CS Courses
Waipahu Inter	2

High School	Number of CS Courses
Pearl City	9

High School	Number of CS Courses
Waipahu	8

Nanakuli-Waianae

Elementary School	Number of CS Courses
Leihoku	0
Maili	0
Makaha	0

Elementary School	Number of CS Courses
Nanaikapono	0
Nanakuli	0
Waianae	0

Middle/Intermediate School	Number of CS Courses
Waianae Inter	3

High School	Number of CS Courses
Waianae	1

Combo School	Number of CS Courses
Nanakuli High & Inter	2

Castle-Kahuku

Elementary School	Number of CS Courses
Ahuimanu	0
Hauula	0
Heeia	0
Kaaawa	0
Kahaluu	0
Kahuku	0
Kaneohe	0

Elementary School	Number of CS Courses
Kapunahala	0
Laie	0
Parker	0
Puohala	0
Sunset Beach	0
Waiahole	0

Middle/Intermediate School	Number of CS Courses
King Inter	0

High School	Number of CS Courses
Castle	5

Combo School	Number of CS Courses
Kahuku High & Inter	1

Kailua-Kalaheo

Elementary School	Number of CS Courses
Aikahi	0
Enchanted Lake	0
Kaelepulu	0
Kailua	0
Kainalu	0

Elementary School	Number of CS Courses
Keolu	0
Maunawili	0
Mokapu	0
Pope	0

Middle/Intermediate School	Number of CS Courses
Kailua Inter	1

High School	Number of CS Courses
Kailua	2

High School	Number of CS Courses
Kalaheo	1

Combo School	Number of CS Courses
Waimanalo Elem & Inter	0

Combo School	Number of CS Courses
Olomana	3

Hilo-Waiakea

Elementary School	Number of CS Courses
DeSilva	0
Haaheo	0
Hilo Union	0
Kapiolani	0

Elementary School	Number of CS Courses
Kaumana	0
Keaukaha	0
Waiakea	0
Waiakeawaena	0

Middle/Intermediate School	Number of CS Courses
Hilo Inter	1

Middle/Intermediate School	Number of CS Courses
Waiakea Inter	1

High School	Number of CS Courses
Hilo	4

High School	Number of CS Courses
Waiakea	3

Combo School	Number of CS Courses
Kalanianaole Elem & Inter	0

Kau-Keaau-Pāhoa

Elementary School	Number of CS Courses
Keaau	0
Keonepoko	7
Mountain View	0

Elementary School	Number of CS Courses
Naalehu	0
Pahoa	7

Middle/Intermediate School	Number of CS Courses
Keaau Middle	1

High School	Number of CS Courses
Keaau	7

Combo School	Number of CS Courses
Kau High & Pahala Elem	2

Honokaa-Kealakehe-Kohala-Konawaena

Elementary School	Number of CS Courses
Holualoa	0
Honaunau	0
Honokaa	0
Hookena	0
Kahakai	0

Elementary School	Number of CS Courses
Kealakehe	0
Kohala	0
Konawaena	0
Waimea	0

Middle/Intermediate School	Number of CS Courses
Kealakehe Inter	1
Kohala Middle	0

Middle/Intermediate School	Number of CS Courses
Konawaena Middle	3

High School	Number of CS Courses
Kealakehe	4
Kohala	2

High School	Number of CS Courses
Konawaena	3

Combo School	Number of CS Courses
Paauilo Elem & Inter	0
Waikoloa	1

Combo School	Number of CS Courses
Ke Kula O Ehunuikaimalino	0
Honokaa High & Inter	2

Baldwin-Kekaulike-Maui

Elementary School	Number of CS Courses
Haiku	0
Kahului	6
Kamalii	6
Kihei	0
Kula	0
Lihikai	0
Makawao	0

Elementary School	Number of CS Courses
Paia	0
Pomaikai	0
Pukalani	0
Puu Kukui	0
Waihee	0
Wailuku	0

Middle/Intermediate School	Number of CS Courses
Iao Inter	2
Kalama Inter	1

Middle/Intermediate School	Number of CS Courses
Lokelani Inter	2
Maui Waena Inter	1

High School	Number of CS Courses
Baldwin	5
Kekaulike	5

High School	Number of CS Courses
Maui	8

Hana-Lahainaluna-Lanai-Moloka‘i

Elementary School	Number of CS Courses
Kamehameha III	0
Kaunakakai	0
Kilohana	0

Elementary School	Number of CS Courses
Maunaloa	0
Nahienaena	0

Middle/Intermediate School	Number of CS Courses
Lahaina Inter	2

Middle/Intermediate School	Number of CS Courses
Molokai Middle	2

High School	Number of CS Courses
Lahainaluna	2

High School	Number of CS Courses
Molokai	4

Combo School	Number of CS Courses
Hana High & Elem	0

Combo School	Number of CS Courses
Lanai High & Elem	2

Kapaa-Kauai-Waimea

Elementary School	Number of CS Courses
Eleele	0
Hanalei	0
Kalaheo	0
Kapaa	0
Kaumualii	0

Elementary School	Number of CS Courses
Kekaha	0
Kilauea	0
Koloa	0
Wilcox	0

Middle/Intermediate School	Number of CS Courses
Kamakahelei Middle	1
Kapaa Middle	1

Middle/Intermediate School	Number of CS Courses
Waimea Canyon	1

High School	Number of CS Courses
Kapaa	1
Kauai	8

High School	Number of CS Courses
Waimea	6

Combo School	Number of CS Courses
Niihau High & Elem	5

Appendix C

Optional Complex Areas Summaries of CS-related Activities

Quick Links

Farrington-Kaiser-Kalani
No optional CS update submitted for SY 2021-2022

Kaimuki-McKinley-Roosevelt
School Year 2021-22 launched a unified Kaimuki-McKinley-Roosevelt (KMR) effort to determine schools' current Computer Science (CS) Implementation stage. Surveys collected data related to the intended implementation timelines from all KMR schools. The prior year's survey data show Act 51 compliance for High School coursework has been met. However, current discussion around offering foundational CS to more of the secondary populations at each school has begun. Polls of schools' implementation intent timelines and efforts were collected. Regarding plans for Act 158, one elementary school indicated they have full implementation this year, with five more coming on board next year, and 3 of 5 middle schools planning to implement. At that pace we are projected to hit our Complex Area compliance targets by 2024-25.

This year's focus was to offer overviews of CS expectations across the entire District of Honolulu. We have teamed with Farrington-Kaiser-Kalani Complex Area as a result of Act 51 and Act 158. A launch starting with a professional development session for all KMR schools' administrator/curricular leaders that emphasizes the need for equity and access to all K-12 students and a shift in CS's emphasis from Computer Literacy to CS foundations. Additionally,

KMR has started a robust District-level CS Cadre of teachers made of one or more members from a school within each of the three Complex Areas, and from each grade band. Members include: CS teachers, Technology Coordinators, Curriculum Coordinators, a registrar, and a Vice Principal. This cadre (13 members) participates in State-level meetings and offers the district input/guidance in developing the District-shared resources and CS expectation timelines/plans. Next year, a better pulse on each school's CS plan progress, individual courses, and CS-related activities will be collected.

Aiea-Moanalua-Radford

In 2021 - 2022, Aiea-Moanalua-Radford Complex Area began to solidify plans for students' equity and access to Computer Science education in grades K-12. While not reflected in the data, every student (380 students) in grade 8 at Moanalua Middle School has received CS instruction during the 2021-22 school year on a rotational basis; and many of our elementary schools have robotics and media clubs that address some of the CS standards.

Looking forward to the 2022-23 school year, we have met with the principals to ensure implementation of HRS302a-323. To support schools with their implementation, we will have meetings throughout the school year focused on providing resources and curriculum support along with standards unpacking and articulation between elementary, middle, and high schools. We will also be looking at creating community partnerships to support our schools.

Leilehua-Mililani-Waialua

In 2021 - 2022, the Leilehua-Mililani-Waialua Complex Area began a focused effort to determine Computer Science Readiness in all LMW Complex Areas schools. Schools were asked to assess where they stood in the following areas: equitable CS, high quality curriculum, access to CS PD, funding for CS, and implementation and monitoring plans for CS. Schools also had the opportunity to request support and services from complex area team members in the following forms: crafting school CS plans, assistance in CS curriculum and lesson design, CS-specific PD, and planning CS outreach activities. Schools were then asked to join cohorts for implementation per Act 158.

In March 2022, our CS team began meeting with school CS leads and administration. We will continue to meet with all school teams by the end of the Summer to help schools better understand the requirements of the legislation and begin planning for school-level implementation. This school year, we were also able to host a variety of CS-focused PD through our weekly Pop-Up PD sessions on Tuesday afternoons. Some of the topics included an Introduction to Act 158, Code.org for Elementary School, and Unpacking the CSTA Standards. Although turnout has been small, teachers are very interested in learning more.

Looking forward to the 2022 - 2023 school year, we are excited to be offering support to our CS Implementation Cohort 1 schools and building the CS capacity of all teachers in our Complex Area. The following is a breakdown of CS Implementation Cohort Groups:

- Cohort 1 (SY 22-23): Daniel K Inouye ES, Kipapa ES, Mililani Uka ES, Solomon ES, Mililani MS, Wahiawa MS, Wheeler MS, Waialua I & HS
- Cohort 2 (SY 23-24): Iliahi ES, Kaala ES, Mililani Ike ES, Waialua ES
- Cohort 3 (SY 24-25): Haleiwa ES, Helemano ES, Mililani Mauka ES, Mililani Waena ES, Wahiawa ES

Close to 50% of our complex area elementary and middle schools will be on board in this first year of Act 158 implementation. The remaining schools will transition over the coming school years. The Complex Area CS team will be providing schools with ongoing support and professional development opportunities as requested by the schools. We are also planning on hosting articulation meetings to give leads from each school a chance to share and learn from one another. Computer Science course offerings in our High Schools will continue, with efforts to increase opportunities for various certifications and early college and career connections.

Campbell-Kapolei
Offer CS courses focused on robotics, cybersecurity, and artificial intelligence.

Pearl City-Waipahu
In 2021 - 2022, Pearl City Waipahu Complex Area took the next step in offering Computer Science to our K-12 students. Through professional learning communities, educators met with Complex Area support to tackle challenges of a first-year implementation ranging from instructional strategies to standards-aligned assessment. With continued leadership support, by the end of 2021 - 2022 over 350 educators participated in capacity-building professional development in Computer Science. With over 7000 students enrolled in Computer Science courses, our Complex Area Computer Science pathway has taken a massive step forward from approximately 4500 students in the previous year.

Looking ahead to 2022 - 2023, we will continue to grow our Computer Science pathway of study with a focus on integrated projects through applied Computer Science. We will continue to offer Computer Science professional development for new teachers but also for those looking to take the next steps into physical computing. In addition, we will be looking to reach out to our community and make them aware of the opportunities that Computer Science can offer the students in our Complex Area.

Nanakuli-Waianae
During the 2021-22 school year, a Professional Learning Community (PLC) of 12 dedicated educators met each month to plan, engage, and operationalize the Nanakuli-Waianae Computer Science implementation plan at all of our schools. The team started the year by gaining a clear understanding of the expectations in both Act 51 and 158 so we could create goals to meet these legislative mandates. We also examined available resources to support our work, namely the Hawaii DOE Computer Science webpage, HIDOE CS Guidance Document, and CS Dashboard to inform ourselves of what needed to be accomplished. Lastly, we held meaningful discussions about equity and opportunity in our Complex Area in that nearly all of our students did not have access to Computer Science curricula, nor did they have opportunities to explore CS as a viable career pathway. Armed with this information, we began our journey.

Each meeting brought about new questions and challenges as we navigated our way through the resource documents and determined how each school might be able to offer Computer Science to all students. Team members also participated in the state's tri-level meetings to understand the direction the state was heading in as well as to hear how other complex areas were successfully launching CS in their schools. After some deliberation, our team decided to adopt code.org as the official core CS curriculum for our complex area. Through constant dialogue and meetings with school administrators, the team was ultimately successful in getting five elementary schools and two secondary schools to offer Computer Science in the 2022-23 school year. The remaining schools are looking to offer CS in the 2023-24 school year. We are excited to launch Computer Science in the Nanakuli-Waianae Complex Area

and provide our students opportunities to learn the core concepts of CS and become informed digital citizens in the 21st century.

Castle-Kahuku and Kailua-Kalaheo

In the school year 2020-2021, we formed the K-12 Windward District Computer Science (CS) Work Group composed of teachers and technology coordinators from Castle-Kahuku and Kailua-Kalāheo Complex Areas. The CS Work Group began having meaningful discussions on the vision of CS in both Complex Areas and identified what CS learning opportunities are already available at our elementary and intermediate schools, such as through classroom learning experiences, computer and enrichment classes, robotics and media clubs, CS electives, and CS through the exploratory wheel course. The CS Work Group also identified the courses that are being offered in the high schools, such as Introduction to Computer Science, Advanced Placement Computer Science Principles, Computer Electronics, Digital Media, and Gaming. The CS Work Group developed a draft implementation plan of scaffolded CS learning experiences from elementary to high school and district resources available to support CS, including the Windward District Lending Library.

In the school year 2021-2022, the CS Work Group surveyed our K-8 schools to see how many teachers are currently teaching CS. Through the survey, we found that there are teachers teaching CS at most of our elementary and intermediate schools. We shared the survey data and the ACT 158 roll out timeline with our Windward District administrators and academic coaches. We also identified the elementary and intermediate schools who will be adding and grading CS on the report card in the school year 2022-2023. The Windward District Academic Integration Team also began to develop CS professional development opportunities for teachers and added more CS resources to the lending library that are aligned to support the teaching of CS standards. Hawaii Workforce Pipeline, our district's intermediary, also supports CS by providing work-based learning opportunities for our students, such as guest speakers with careers in Information Technology for our elementary and intermediate schools and high school internships.

Looking forward to the 2022-2023 school year, we will continue to learn and grow as a district. Our Windward District Academic Integration Team will continue to support our Windward teachers with CS PD opportunities and resources in our Lending Library. We would also like to provide time for K-12 vertical articulation and professional learning communities in hopes to increase CS learning experiences across our schools. Some of our high schools will also be expanding their CS course offerings. Castle High will replace their AP CS/A with a course in Beginning/Intermediate Python. Kahuku High will be transitioning to the new Information Technology and Digital Transformation Pathway. Kailua High will also offer courses in the new IT pathway.

Hilo-Waiakea

This past school year, 2021-22, the HWCA Computer Science Team continued working on our complex area CS implementation plan. We have added more teachers to our team for SY 22-23 so we will have broad representation from all grade levels. Our complex area team met twice during this school year to share information about Act 158 and to begin the planning for its full implementation by SY 24-25. Members of the HWCA CS team attended the State Computer Science tri-level meetings to share updates, hear from other complex areas and collaboratively plan next steps. We have shared the requirements of ACT 158 at regular principal meetings and have worked closely with the Office of Curriculum and Instructional Design as well as the University of Hawaii, College of Education, Learning & Technology Design department to provide resources, share professional development opportunities and offer guidance and support to meet the legislative requirements.

Kau-Keaau-Pāhoa
No optional CS update submitted for SY 2021-2022.

Honokaa-Kealakehe-Kohala-Konawaena

- Growth in CS Complex team from 1 -> 2 ->13 ->16
- Evaluation/use guidance doc
- Developed a WHCA CS webpage for our implementation
- Teachers adding additional field (CS) to license via coursework (PD) and Praxis
- Three of five high schools in the complex area are transitioning to Career Academies wherein articulation at the middle and high school regarding course offerings have been taking place.

Baldwin-Kekaulike-Maui
In 2021 - 2022, Baldwin-Kekaulike-Maui Complex has taken the appropriate actions in improving access and the quality of CS education for their students. Schools at the elementary level are preparing and taking necessary actions for implementing Computer Science at their respective schools. Necessary steps include changes in “teacher lines”, curriculum research & selection, adjusting schedules, curriculum pacing & standards alignment, and the purchase of 3D printers. Middle schools are continuing their efforts in improving CS instruction. For example, Maui Waena submitted a grant to purchase $1,900 of VEX IQ equipment for CS, which has been an enhancement to their CS program. High Schools such as King Kekaulike High School have been leveraging the UTeach Curriculum. The UTeach curriculum uses the Codio Learning Management System which embeds the textbook, outside links, and coding environments all in one student-friendly location. This was a major improvement over the previous year's curriculum. Maui High School’s Robotics team won the Hawai’i Regionals competition in April 2022. As a result, they have been invited to the FRC World Championships, which will take place in Houston, Texas. BKM’s partnership with Oceanit has afforded the complex area with professional development in the past and also afforded the Complex Area with 25 Altino Cars for teachers who have taken PD courses with Oceanit.

Looking forward to the 2022-23 school year, BKM schools will continue to support its schools using the tri-level system of support to improve the access and quality of CS education. We will continue to support access for teachers to use Altino Cars in their classroom as well as seek further partnership opportunities with Oceanit and other organizations. With the HIDOE K-12 CS Guidance Document, BKM Implementation Plan, and with the tri-level system of support & collaboration, BKM will continue to grow and improve CS education for their students.

Hana-Lahainaluna-Lanai-Moloka‘i
In 2021 - 2022, Hana-Lahainaluna-Lanai-Molokai shared successes in several areas related to CS education. Schools at the elementary and middle school levels continued to take advantage of Computer Science Education Week by participating in various Hour of Code activities across content areas. In addition, several schools took the opportunity to invite guest speakers to talk about how Computer Science is impacting fields such as marine sciences and sports medicine. Finally, three teachers from one middle school submitted a grant proposal requesting $1500 to purchase two 3D printers for use in CS lessons.

Looking forward to the 2022-23 school year, several high schools are planning to offer CS courses focused on robotics and artificial intelligence for the first time. In conjunction with CS resource teachers, the area’s CS Team Lead is coordinating professional development support through a month-long initiative involving CS undergraduates

from the University of Delaware. This initiative will provide targeted professional development experiences chosen by classroom teachers. Finally, several schools are working with Technology Outreach Hawaii (TORCH) to arrange optional Saturday coding classes for 6th to 12th-grade students.

Kapaa-Kauai-Waimea

This past school year, 2021-22, the Kaua'i Complex Area began the initial implementation of our Computer Science plan. We assembled a group of knowledgeable and passionate teachers who now serve on our Kaua'i Computer Science Collaborative. This team is composed of 14 individuals including myself as the Complex Area Lead. Our team met twice during this school year to introduce the Computer Science initiative, articulate roles and responsibilities, share information about Act 158, and begin the planning for further rollout to schools. A subgroup of the CS Collaborative represented by elementary, middle, and high school teachers attend the State Computer Science tri-level meetings to gain information, network, and collaboratively design and plan next steps.

Our K-12 plan which involves professional development for staff and administrators is established and we are ready to implement our PD plan next school year. The Complex Area has partnered with nationally-recognized provider, Bootup PD, to provide services and coaching to our schools. Another innovation we instituted this year is "STEM Saturdays" which are workshops designed to bring together teachers to learn and grow together in the teaching and learning of STEM and computer science. Participants are engaged in professional development through an interactive, hands-on approach of integrating a physical computing device and programming that aligns to the CSTA Computer Science standards.

Next school year, we will offer more Computer Science content to students through various models which include classroom teacher integration and/or STEM/Computer Science teachers. Elementary schools will also be encouraged to begin grading Computer Science on their elementary school report cards. Middle school articulation with high schools has started and will expand to include more schools. We will also increase the number of afterschool Computer Science clubs as well as encourage more Computer Science opportunities for families to engage in with their children.

Mahalo