UCDAVIS Wheelhouse
The Center for Community College Leadership and Research

RESEARCH BRIEF APPENDIX
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A Foot in the Door

Appendix of Dual Enrollment Participation by Race/Ethnicity: Fields of Study and Units Attempted/Earned

As described in *A Foot in the Door*, student participation in dual enrollment has been growing steadily over the last four years for students from all racial/ethnic subgroups. Yet, participation and course taking patterns vary across racial/ethnic subgroups. This appendix provides detailed tables about the fields of study and the units attempted/earned for the 2018–19 cohort of public high school graduates for five racial/ethnic subgroups (Asian, Black, Latinx, White and Other).

Data and Methods

Results presented in this appendix are based on analysis that links administrative data from two education sectors—the California Department of Education and the California Community Colleges Chancellor's Office. Specifically, we merge:

- Student-level data, including individual demographic characteristics, from the California Department of Education's College/Career Indicator for the 2015–16 through the 2018–19 public high school graduating cohorts. In our analysis, we limited our sample to students in the four-year cohort who entered a California public high school as 9th graders and were expected to graduate in four years.
- Data from the California Community Colleges Chancellor's Office "special admit" populations of all high school students statewide who concurrently enroll in a community college between 2012 and 2019. These data include information on course enrollments and fields of study, as well as credits attempted and earned through 2019–20.

With this merged data, we explore students' course taking patterns, paying particular attention to the type, or format, of the dual enrollment courses. We leveraged detailed student-level and course-level information to isolate the courses that had only high school students enrolled; we refer to these as HS-Only courses. By contrast, when courses contained a mix of special admits and regular community college students, we categorized them as HS-CC Mixed. Some students enroll in HS-Only classes exclusively, others take only HS-CC Mixed courses, and still others take a combination of HS-Only and HS-CC Mixed courses. In each table, we report course taking and units attempted/earned for students in each of these categories.

UCDAVIS SCHOOL OF EDUCATION

Table A1. Dual Enrollment Participation Across Fields of Study Types, Asian Students in 2018–19 Cohort

	Dual Enrollment Type			
	Any DE	HS-Only	Combination	HS-CC Mixed
Number of Students from Subgroup	10,506	1,078	8,490	938
Agriculture & Natural Resources	0.7%	0.6%	0.6%	1.3%
Architecture	0.1%	0.0%	0.2%	0.0%
Biological Sciences	6.9%	2.5%	7.4%	8.1%
Business & Management	9.2%	8.8%	8.6%	15.5%
Commercial Services	0.0%	0.0%	0.0%	0.0%
Education	10.2%	7.4%	9.3%	21.2%
Engineering & Industrial Arts	2.7%	6.6%	1.8%	7.0%
Environmental Sciences	0.6%	0.6%	0.6%	1.1%
Family & Consumer Sciences	4.3%	3.6%	4.1%	7.1%
Fine & Applied Arts	19.3%	17.5%	17.0%	42.9%
Foreign Language	12.4%	13.8%	10.1%	31.6%
Health	3.8%	7.0%	3.1%	6.5%
Humanities	18.3%	13.1%	17.8%	29.5%
Information Technology	11.9%	9.2%	11.2%	22.0%
Interdisciplinary	9.9%	12.6%	8.8%	16.0%
Law	0.1%	0.0%	0.1%	0.3%
Library Science	0.3%	0.2%	0.4%	0.2%
Mathematics	24.5%	10.8%	26.0%	26.9%
Media & Communications	4.2%	2.2%	4.4%	4.6%
Military Studies	0.0%	0.0%	0.0%	0.0%
Physical Sciences	8.7%	1.2%	9.3%	12.0%
Psychology	15.4%	8.0%	15.3%	25.5%
Public & Protective Services	2.8%	4.1%	2.3%	5.8%
Social Sciences	22.7%	13.0%	22.2%	38.2%
Took Any CTE	31.2%	37.3%	28.3%	49.9%
Took any Basic Skills	7.8%	4.3%	7.2%	16.6%

Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCO. Each cell represents the percent of students from the subgroup of dual enrollment participants named at the top of the column (and from the 2018–19 public 4-year high school graduating cohort) who took a course in that particular field of study during the four normative years of high school. HS-Only refers to dual enrollment participants that took community college courses in which only high school students were enrolled. HS-CC Mixed refers to dual enrollment participants that took community college courses that included high school students and traditional community college students. Combination refers to dual enrollment participants that took a combination of HS-Only and HS-CC Mixed courses. Percentages in each column total more than 100% as students often take more than one course. Shaded rows indicate the most popular courses in dual enrollment overall.

Table A2. Units Attempted and Earned by Asian Dual Enrollment Participants, 2018–19 Cohort

	Dual Enrollment Type			
	Any DE	HS-Only	Combination	HS-CC Mixed
Number of Students from Subgroup	10,506	1,078	8,490	938
Units Attempted	9.9	8.3	8.9	20.9
Units Earned	9.1	7.7	8.1	19.4
Transfer Units Earned	8.2	5.2	7.5	17.1
CTE Units Earned	1.6	1.6	1.4	3.2

Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCO. Each cell represents the percent of students from the subgroup of dual enrollment participants named at the top of the column (and from the 2018-19 public 4-year high school graduating cohort) and the number of units attempted or earned during the four normative years of high school. HS-Only refers to dual enrollment participants that took community college courses in which only special admits were enrolled. HS-CC Mixed refers to dual enrollment participants that took community college courses that included high school students and traditional community college students. Combination refers to dual enrollment participants that took a combination of HS-Only and HS-CC Mixed courses.

Table A3. Dual Enrollment Participation Across Fields of Study Types, Black Students in 2018–19 Cohort

	Dual Enrollment Type			
	Any DE	HS-Only	Combination	HS-CC Mixed
Number of Students from Subgroup	3,405	523	2,549	333
Agriculture & Natural Resources	0.6%	0.8%	0.5%	1.5%
Architecture	0.2%	0.0%	0.2%	0.3%
Biological Sciences	3.9%	1.2%	3.6%	10.2%
Business & Management	7.7%	9.9%	6.4%	14.1%
Commercial Services	0.1%	0.0%	0.1%	0.0%
Education	20.0%	12.8%	19.1%	38.1%
Engineering & Industrial Arts	2.9%	5.2%	2.2%	4.5%
Environmental Sciences	0.8%	0.0%	0.5%	3.9%
Family & Consumer Sciences	6.1%	6.3%	5.7%	8.7%
Fine & Applied Arts	15.7%	9.2%	14.9%	32.4%
Foreign Language	8.7%	3.1%	8.4%	20.1%
Health	4.7%	8.4%	4.0%	3.9%
Humanities	22.2%	21.4%	18.5%	52.3%
Information Technology	5.4%	3.4%	4.9%	12.0%
Interdisciplinary	18.7%	22.8%	16.2%	31.5%
Law	0.1%	0.0%	0.2%	0.0%
Library Science	0.9%	0.0%	1.0%	1.5%
Mathematics	13.7%	5.9%	13.6%	26.4%
Media & Communications	4.9%	7.1%	4.1%	7.8%
Military Studies	0.0%	0.0%	0.0%	0.0%
Physical Sciences	4.9%	0.8%	4.4%	15.6%
Psychology	13.2%	10.5%	11.4%	31.5%
Public & Protective Services	6.7%	6.1%	6.5%	9.6%
Social Sciences	26.4%	21.6%	23.5%	56.2%
Took Any CTE	28.3%	35.6%	25.1%	41.7%
Took any Basic Skills	14.9%	9.8%	13.4%	34.5%

Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCO. Each cell represents the percent of students from the subgroup of dual enrollment participants named at the top of the column (and from the 2018–19 public 4-year high school graduating cohort) who took a course in that particular field of study during the four normative years of high school. HS-Only refers to dual enrollment participants that took community college courses in which only high school students were enrolled. HS-CC Mixed refers to dual enrollment participants that took community college courses that included high school students and traditional community college students. Combination refers to dual enrollment participants that took a combination of HS-Only and HS-CC Mixed courses. Percentages in each column total more than 100% as students often take more than one course. Shaded rows indicate the most popular courses in dual enrollment overall.

Table A4. Units Attempted and Earned by Black Dual Enrollment Participants, 2018–19 Cohort

	Dual Enrollment Type			
	Any DE	HS-Only	Combination	HS-CC Mixed
Number of Students from Subgroup	3,405	523	2,549	333
Units Attempted	8.6	5.9	7.5	21.3
Units Earned	6.8	4.8	5.8	18.1
Transfer Units Earned	6.1	4.5	5.0	16.6
CTE Units Earned	1.2	1.4	1.0	2.3

Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCO. Each cell represents the percent of students from the subgroup of dual enrollment participants named at the top of the column (and from the 2018-19 public 4-year high school graduating cohort) and the number of units attempted or earned during the four normative years of high school. HS-Only refers to dual enrollment participants that took community college courses in which only special admits were enrolled. HS-CC Mixed refers to dual enrollment participants that took community college courses that included high school students and traditional community college students. Combination refers to dual enrollment participants that took a combination of HS-Only and HS-CC Mixed courses.

Table A5. Dual Enrollment Participation Across Fields of Study Types, Latinx Students in 2018–19 Cohort

	Dual Enrollment Type			
	Any DE	HS-Only	Combination	HS-CC Mixed
Number of Students from Subgroup	31,549	5,866	22,040	3,643
Agriculture & Natural Resources	2.9%	3.6%	2.2%	5.9%
Architecture	0.1%	0.0%	0.1%	0.1%
Biological Sciences	3.1%	0.9%	2.9%	7.7%
Business & Management	6.9%	8.3%	5.6%	13.0%
Commercial Services	0.1%	0.0%	0.1%	0.4%
Education	15.8%	9.0%	15.1%	30.4%
Engineering & Industrial Arts	5.1%	6.8%	4.0%	9.5%
Environmental Sciences	0.4%	0.2%	0.4%	1.0%
Family & Consumer Sciences	8.2%	6.9%	7.5%	14.4%
Fine & Applied Arts	16.4%	11.0%	15.1%	32.8%
Foreign Language	7.9%	4.8%	6.6%	20.9%
Health	5.0%	6.4%	4.2%	7.7%
Humanities	22.4%	22.0%	17.9%	50.3%
Information Technology	3.9%	2.9%	3.3%	9.4%
Interdisciplinary	20.0%	22.6%	18.1%	26.8%
Law	0.2%	0.4%	0.1%	0.3%
Library Science	0.5%	0.1%	0.5%	1.0%
Mathematics	10.1%	5.0%	9.2%	23.7%
Media & Communications	4.3%	3.2%	3.9%	8.1%
Military Studies	0.0%	0.0%	0.0%	0.0%
Physical Sciences	4.0%	1.3%	3.3%	12.8%
Psychology	12.3%	8.1%	11.2%	26.3%
Public & Protective Services	8.4%	7.1%	8.2%	11.5%
Social Sciences	24.4%	22.3%	20.9%	49.0%
Took Any CTE	34.4%	37.6%	30.7%	51.4%
Took any Basic Skills	12.7%	9.9%	9.8%	34.2%

Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCO. Each cell represents the percent of students from the subgroup of dual enrollment participants named at the top of the column (and from the 2018–19 public 4-year high school graduating cohort) who took a course in that particular field of study during the four normative years of high school. HS-Only refers to dual enrollment participants that took community college courses in which only high school students were enrolled. HS-CC Mixed refers to dual enrollment participants that took community college courses that included high school students and traditional community college students. Combination refers to dual enrollment participants that took a combination of HS-Only and HS-CC Mixed courses. Percentages in each column total more than 100% as students often take more than one course. Shaded rows indicate the most popular courses in dual enrollment overall.

Table A6. Units Attempted and Earned by Latinx Dual Enrollment Participants, 2018–19 Cohort

	Dual Enrollment Type			
	Any DE	HS-Only	Combination	HS-CC Mixed
Number of Students from Subgroup	31,549	5,866	22,040	3,643
Units Attempted	8.0	6.0	6.6	19.5
Units Earned	6.8	5.2	5.4	17.5
Transfer Units Earned	6.1	4.6	4.8	15.9
CTE Units Earned	1.6	1.5	1.3	3.6

Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCO. Each cell represents the percent of students from the subgroup of dual enrollment participants named at the top of the column (and from the 2018-19 public 4-year high school graduating cohort) and the number of units attempted or earned during the four normative years of high school. HS-Only refers to dual enrollment participants that took community college courses in which only special admits were enrolled. HS-CC Mixed refers to dual enrollment participants that took community college courses that included high school students and traditional community college students. Combination refers to dual enrollment participants that took a combination of HS-Only and HS-CC Mixed courses.

Table A7. Dual Enrollment Participation Across Fields of Study Types, White Students in 2018–19 Cohort

	Dual Enrollment Type			
	Any DE	HS-Only	Combination	HS-CC Mixed
Number of Students from Subgroup	21,183	2,990	16,565	1,628
Agriculture & Natural Resources	2.5%	3.7%	2.0%	5.3%
Architecture	0.2%	0.1%	0.2%	0.2%
Biological Sciences	4.7%	1.3%	4.9%	8.2%
Business & Management	8.6%	9.1%	7.5%	18.4%
Commercial Services	0.1%	0.0%	0.1%	0.0%
Education	16.5%	6.4%	17.3%	26.7%
Engineering & Industrial Arts	4.4%	7.7%	3.5%	7.5%
Environmental Sciences	0.5%	0.5%	0.5%	1.2%
Family & Consumer Sciences	5.9%	5.3%	5.8%	8.4%
Fine & Applied Arts	20.0%	13.0%	20.0%	33.0%
Foreign Language	11.5%	5.8%	11.4%	22.7%
Health	4.5%	7.1%	3.6%	9.3%
Humanities	23.7%	16.3%	23.1%	43.9%
Information Technology	5.6%	4.2%	5.1%	13.7%
Interdisciplinary	15.5%	18.8%	14.0%	24.6%
Law	0.1%	0.0%	0.1%	0.1%
Library Science	0.7%	0.0%	0.8%	0.7%
Mathematics	17.1%	8.4%	17.5%	28.7%
Media & Communications	7.0%	6.6%	6.6%	11.3%
Military Studies	0.0%	0.0%	0.0%	0.0%
Physical Sciences	6.9%	2.6%	7.1%	12.5%
Psychology	11.0%	3.1%	11.8%	17.2%
Public & Protective Services	4.5%	5.5%	4.1%	6.5%
Social Sciences	24.8%	16.5%	24.0%	47.4%
Took Any CTE	33.4%	46.5%	28.9%	55.2%
Took any Basic Skills	8.4%	5.3%	7.9%	18.6%

Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCO. Each cell represents the percent of students from the subgroup of dual enrollment participants named at the top of the column (and from the 2018–19 public 4-year high school graduating cohort) who took a course in that particular field of study during the four normative years of high school. HS-Only refers to dual enrollment participants that took community college courses in which only high school students were enrolled. HS-CC Mixed refers to dual enrollment participants that took community college courses that included high school students and traditional community college students. Combination refers to dual enrollment participants that took a combination of HS-Only and HS-CC Mixed courses. Percentages in each column total more than 100% as students often take more than one course. Shaded rows indicate the most popular courses in dual enrollment overall.

Table A8. Units Attempted and Earned by White Dual Enrollment Participants, 2018–19 Cohort

	Dual Enrollment Type			
	Any DE	HS-Only	Combination	HS-CC Mixed
Number of Students from Subgroup	21,183	2,990	16,565	1,628
Units Attempted	9.4	6.2	9.0	19.8
Units Earned	8.2	5.5	7.8	17.7
Transfer Units Earned	7.4	4.6	7.0	16.1
CTE Units Earned	1.6	1.9	1.4	3.6

Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCO. Each cell represents the percent of students from the subgroup of dual enrollment participants named at the top of the column (and from the 2018-19 public 4-year high school graduating cohort) and the number of units attempted or earned during the four normative years of high school. HS-Only refers to dual enrollment participants that took community college courses in which only special admits were enrolled. HS-CC Mixed refers to dual enrollment participants that took community college courses that included high school students and traditional community college students. Combination refers to dual enrollment participants that took a combination of HS-Only and HS-CC Mixed courses.

Table A9. Dual Enrollment Participation Across Fields of Study Types, Other Racial Subgroups in 2018–19 Cohort

	Dual Enrollment Type			
	Any DE	HS-Only	Combination	HS-CC Mixed
Number of Students from Subgroup	4,488	593	3,518	377
Agriculture & Natural Resources	1.1%	2.4%	0.7%	2.1%
Architecture	0.1%	0.0%	0.1%	0.3%
Biological Sciences	4.6%	0.5%	4.9%	8.0%
Business & Management	7.1%	6.6%	6.6%	13.0%
Commercial Services	0.0%	0.0%	0.0%	0.3%
Education	16.5%	11.1%	15.9%	31.3%
Engineering & Industrial Arts	3.7%	6.9%	2.5%	9.3%
Environmental Sciences	0.6%	0.2%	0.6%	1.1%
Family & Consumer Sciences	5.2%	3.5%	5.1%	9.3%
Fine & Applied Arts	19.2%	12.1%	18.4%	38.5%
Foreign Language	11.3%	6.1%	10.9%	22.5%
Health	4.8%	7.6%	4.1%	6.9%
Humanities	21.1%	18.4%	19.0%	44.8%
Information Technology	6.0%	5.9%	5.3%	11.9%
Interdisciplinary	16.5%	19.9%	15.0%	24.4%
Law	0.2%	0.2%	0.2%	0.0%
Library Science	1.1%	0.2%	1.2%	2.1%
Mathematics	17.8%	10.1%	17.7%	30.8%
Media & Communications	6.1%	4.2%	6.2%	8.5%
Military Studies	0.0%	0.0%	0.0%	0.0%
Physical Sciences	6.0%	2.9%	5.7%	13.8%
Psychology	12.4%	6.2%	12.1%	24.9%
Public & Protective Services	4.5%	5.2%	4.3%	5.3%
Social Sciences	24.9%	18.4%	23.1%	52.0%
Took Any CTE	29.3%	37.3%	26.0%	47.2%
Took any Basic Skills	9.5%	5.1%	9.3%	18.6%

Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCO. Each cell represents the percent of students from the subgroup of dual enrollment participants named at the top of the column (and from the 2018–19 public 4-year high school graduating cohort) who took a course in that particular field of study during the four normative years of high school. HS-Only refers to dual enrollment participants that took community college courses in which only high school students were enrolled. HS-CC Mixed refers to dual enrollment participants that took community college courses that included high school students and traditional community college students. Combination refers to dual enrollment participants that took a combination of HS-Only and HS-CC Mixed courses. Percentages in each column total more than 100% as students often take more than one course. Shaded rows indicate the most popular courses in dual enrollment overall.

Table A10. Units Attempted and Earned by Dual Enrollment Participants of other Racial Subgroups, 2018–19 Cohort

	Dual Enrollment Type			
	Any DE	HS-Only	Combination	HS-CC Mixed
Number of Students from Subgroup	4,488	593	3,518	377
Units Attempted	9.1	6.6	8.3	20.2
Units Earned	7.9	5.8	7.1	18.1
Transfer Units Earned	7.1	5.1	6.4	16.6
CTE Units Earned	1.3	1.5	1.2	2.6

Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCO. Each cell represents the percent of students from the subgroup of dual enrollment participants named at the top of the column (and from the 2018-19 public 4-year high school graduating cohort) and the number of units attempted or earned during the four normative years of high school. HS-Only refers to dual enrollment participants that took community college courses in which only special admits were enrolled. HS-CC Mixed refers to dual enrollment participants that took community college courses that included high school students and traditional community college students. Combination refers to dual enrollment participants that took a combination of HS-Only and HS-CC Mixed courses.

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