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THE IMPACT OF COVID-19 ON COMMUNITY COLLEGE ENROLLMENT AND STUDENT SUCCESS: EVIDENCE FROM CALIFORNIA ADMINISTRATIVE DATA

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The Impact of COVID-19 on Community College Enrollment and Student Success: Evidence from California Administrative Data

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ABSTRACT

Enrollment increased slightly at both the California State University and University of California systems in fall 2020, but the effects of the pandemic on enrollment in the California Community College system are mostly unknown and might differ substantially from the effects on 4-year colleges. This paper provides the first analysis of how the pandemic impacted enrollment patterns and the academic outcomes of community college students using administrative college-level panel data covering the universe of students in the 116-college California Community College system. We find that community college enrolment dropped precipitously in fall 2020 – the total number of enrolled students fell by 4 percent in spring 2020 and by 15 percent in fall 2020 relative to the prior year. All racial and ethnic groups experienced large enrollment decreases in spring and fall 2020, but African-American and Latinx students experienced the largest drops at 17 percent in fall 2020. Enrollment fell the most for first-year students in the community college system, basic skills courses, and fields such as engineering/industrial technology, education, interdisciplinary studies, and art. There were smaller decreases for continuing students, academic courses transferable to four-year institutions, and business and science fields. Enrollment losses were felt throughout the entire community college system, and there is no evidence that having a large online presence in prior years protected colleges from these effects. In terms of course performance, there was a larger disruption to completion rates, withdrawal rates, and grades in spring 2020 than in fall 2020. These early findings of the effects of the pandemic at community colleges, which serve higher percentages of lower-income and minority students, have implications for policy, impending budgetary pressures, and future research.

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1 Introduction

Both the University of California and the California State University systems recently reported that total undergraduate enrollment increased slightly from fall 2019 to fall 2020. The effects of the COVID-19 pandemic, however, on enrollment in the California Community College system are not known. Community colleges serve different student populations, are less selective, and could experience very different effects. The move to remote instruction due to COVID restrictions might have caused incoming and continuing community college students to not enroll given the more tenuous enrollment pattern of these students relative to their four-year college peers and the emphasis on hands-on technical training in some programs. On the other hand, given the extremely weak labor market during the pandemic, young adults might have been attracted to open-enrollment and relatively inexpensive community colleges. Thus, theoretically the direction of net impacts on community college enrollment is not clear.

The effects of the pandemic on the academic performance of community college students is also relatively unknown and theoretically ambiguous. Students might have struggled with online learning given the lack of structure, requirement of more self-discipline, and technological disruptions. On the other hand, instructors might have been more lenient in grading, students were less distracted from social events, job opportunities were limited, COVID-19 relief aid was available, and options for taking courses pass/no pass increased. Thus, GPAs and other outcomes might have improved instead of worsened in the pandemic. The scant empirical evidence is mixed. Students at Arizona State University studied less and were more likely to withdraw from classes and delay graduation in the spring of 2020 (Aucejo et al., 2020). In contrast, while students reported challenges with online learning at Queens College in New York City, GPAs were higher and there was no effect on credits earned during spring semester (Rodríguez-Planas, 2020, 2021).[1]

We use administrative college-level panel data covering the universe of students and courses from the California Community College System to provide the first detailed evidence of the effect of COVID-19 and the transition to online classes on community college enrollment and academic outcomes. Specifically, this short, primarily descriptive paper explores five fundamental and policy-relevant questions regarding impacts of the pandemic. First, did

[1] Ahn, Lee and Winters (2020) find that high school graduation rates increased, perhaps due to limited labor market opportunities during the early stages of the pandemic.

community colleges experience falling enrollment in spring and fall 2020 in contrast to the UC and CSU systems? Were there disproportionate impacts on enrollment across racial and ethnic groups? Second, in fall 2020, were new students dissuaded from starting community colleges and was this effect larger than for continuing students trying to stay on track with their educational goals? Third, which types of courses were affected the most? Specifically, did enrollment effects differ for vocational courses relative to academic courses that can be transferred to four-year institutions, and how did trends differ across fields of study? Fourth, were falling enrollments in the pandemic concentrated in a few community colleges or were losses spread across all campuses, and did having a larger online presence prior to the pandemic insulate colleges from enrollment losses? Fifth, how were course loads, completion, and grades affected by the pandemic?

We explore these questions for the California Community College system which is the largest higher educational system in the United States with 116 colleges and 2.1 million students per year.[2] We find that community college enrolment dropped precipitously in fall 2020 contrasting with slight enrollment increases in the CSU and UC systems. The total number of enrolled students fell year-over-year by 60,600 students or 4 percent in spring 2020 and by 235,842 students or 15 percent in fall 2020. All racial and ethnic groups experienced large enrollment drops in spring and fall 2020, but African-American and Latinx students experienced the largest drops, 17 percent for both groups, in fall 2020. Enrollment fell the most for first-year students in the community college system, basic skills courses, and fields such as engineering/industrial technology, education, interdisciplinary studies, and art. Enrollment losses were observed in every community college in the system. Interestingly, community colleges with large online presences prior to the pandemic were not protected from losing students as courses moved online in the pandemic.

Our administrative data also contain information on academic outcomes among enrolled students. Conditional on enrollment, student course loads were similar before and during the pandemic. However, there were significant changes in course completion rates and grade distributions, especially during the spring of 2020. From spring 2019 to spring 2020, course completion dropped from 73 to 70 percent. The underlying cause was that a much higher

[2] The California Community College system enrolls 20 percent of all community college students in the United States, and 30 percent of all Californians ages 18-24 (CCCCO 2020).

percentage of students withdrew or dropped their courses, while course fail rates decreased substantially. The percentage of course grades of "A" increased from 40 percent in spring 2019 to 50 percent in spring 2020 whereas the percentage of courses with B's and C's decreased. Most of these patterns were similar in fall 2020 but to a lesser extent.

An examination of the impacts of COVID-19 on community colleges is especially important. Community colleges enroll nearly half of all students attending public universities and more than half of all minority students. Since community colleges, in addition to providing workforce training, serve as an important gateway to 4-year colleges, they can be seen as a crucial part of the post-secondary educational system in the United States. In fact, in some states, including California, nearly half of all students attending a 4-year college previously attended a community college.[3] With recent calls for major expansions in enrollments and provision of 4-year transfer courses, one can expect that community colleges will gain even further importance.[4] Impacts of the pandemic on community colleges are therefore likely to have major effects on the educational system as a whole.

These results build on the findings from a few related studies of the early effects of the coronavirus on college enrollments and success. We provide the first analysis of changes in community college enrollment and outcomes due to COVID-19 and for the fall semester of 2020 when online courses were anticipated. The California Community College system provides an ideal setting to study these questions because of its size and diversity. The findings also contribute to the broader literature on the effectiveness of online education which generally finds worse outcomes for online instruction relative to in-person instruction prior to the pandemic.[5] Revealed preference of students in community colleges, which offer substantial flexibility in course taking and enrollment, suggest that students generally view online classes as inferior to in-person classes. The findings also contribute to a more general literature examining recessionary effects on college enrollments (e.g., Betts and McFarland 1995; Barr and Turner 2013; Long 2015). The unique characteristics and restrictions of the COVID-19 induced recession, however, resulted in the opposite effect.

[3] See U.S. Department of Education (2010); CCCCO (2009); Sengupta and Jepsen (2006).
[4] In California, transfers from community colleges to the California State University (CSU) system are projected to increase by 25 percent over the next decade (California Postsecondary Education Commission 2010).
[5] See, for example, Figlio, Rush and Lin (2013), Xu and Jaggars (2014), Alpert, Couch and Harmon (2016), Krieg and Hansen (2016) and Bettinger et al. (2017), and see Bulman and Fairlie (2016) for a review.

2 Recent Trends in Community College Enrollment

We first examine the impact of COVID-19 on how many students enrolled in the California Community College system. To first think about the timing of potential impacts, on March 11 the World Health Organization (WHO) declared COVID-19 a pandemic.[6] A few days later, the San Francisco Bay Area imposed shelter-in-place or social-distancing restrictions (March 16, 2020). Then the State of California imposed restrictions on March 19. New York State followed the next day, and by early April most states imposed social distancing restrictions that shifted in-person instruction to online. The timeline suggests that health concerns and shelter-in-place restrictions would have had their first potential effects during the spring semester of 2020 and full impacts on fall semester 2020.

2.1 Enrollment Trends

Figure 1 displays the number of students enrolled in the system each semester over the past decade. Only three community colleges operate on the quarter system so for those colleges we use fall quarter and spring quarter to line up with fall and spring semesters. Enrollment in community colleges decreased substantially in spring semester of 2020, which included the social-distancing restrictions imposed by the state. The total number of enrolled students fell by 60,601 students or 4 percent from spring 2019 as instruction switched from in-person to online.[7]

Enrollment declined even more sharply in fall 2020. Year-over-year (YOY) enrollment dropped by 15 percent from fall 2019 to fall 2020. Over the entire system there were 235,842 fewer students. As it became clear that classes would not be held in person in fall 2020 and some classes that could only be held in-person would be cancelled, many students opted to not enroll in community college. The large drops in enrollment in both spring 2020 and fall 2020 are evident if we estimate an event-study regression in which we adjust for a time trends and include a semester dummy variable. The results do not change from the comparisons of fall 2020 to fall

[6] Coronavirus cases were first found in China in December 2019 and in the United States near the end of January 2020. NYTimes (https://www.nytimes.com/article/coronavirus-timeline.html

[7] Four community colleges (of which two are very small) have not released their enrollment data as of April 1, 2021. The reported enrollment change for the system excludes these colleges.

2019 and spring 2020 to spring 2019, which is expected given the relatively constant level of enrollment. We focus the remaining analysis on YOY comparisons for simplicity and clarity.

Appendix Figure 1 extends the time period back to 1992 and displays YOY changes by semester instead of trends in total enrollment. Only a few years reveal changes that were similar in magnitude to the change from spring 2019 to spring 2020. The change in student enrollment from fall 2019 to fall 2020 was much larger than changes in any year over the last two decades.

In contrast to these patterns, enrollment in the California State University and University of California systems did not fall from fall 2019 to fall 2020.[8] Figure 2 displays undergraduate enrollment totals for both systems of higher education. In the CSU system, total undergraduate enrollment increased by 2,355 students or 0.8 percent. Total undergraduate enrollment in the University of California system increased by 328 students or 0.1 percent. Selective admissions allowed both systems to maintain enrollment levels in the pandemic.

2.2 Patterns by Race and Ethnicity

The California Community College system has a diverse student body with 50 percent Latinx, 12 percent Asian, 6 percent African-American, and 25 percent non-Latinx white students. Did enrollment fall disproportionately among minority students? Figure 3 displays YOY changes in student enrollment for major racial and ethnic groups. African-American enrollment dropped by 6 percent from spring 2019 to spring 2020, and by 17 percent from fall 2019 to fall 2020. Latinx students, who represent nearly half of all students statewide, experienced a drop of 2 percent in spring 2020 and 16 percent in fall 2020. Asian students experienced YOY drops of 3 percent in spring 2020 and 12 percent in fall 2020, while white, non-Latinx students experienced a larger drop in spring 2020 (9 percent) but a similar drop in fall 2020 (13 percent).[9] Thus, while all racial and ethnic groups experienced large drops in enrollment during the pandemic, African-American and Latinx students had the largest drops in the fall of 2020.

2.3 What Types of Students Stopped Enrolling in Community College?

[8] In addition to the California Community College System, the California State University and University of California systems are part of the California master plan for higher education.

[9] In the California Community College system, Filipino student counts are not included in Asian student counts. Filipino students experienced enrollment YOY drops of 5 percent in spring 2020 and 10 percent in fall 2020.

The California Community College system classifies students into several categories related to their current or previous enrollment in a community college, another college, or high school. Students in these groups having varying levels of attachment to education and therefore may have responded differently to the pandemic and switch to fully online courses. Table 1 reports enrollment totals and changes in enrollment for different classifications of students, focusing on the large enrollment drop from fall 2019 to fall 2020. The largest YOY drops in enrollment in the pandemic were for first-time students in the community college system. First-time student enrollments fell by 22 percent in fall 2020. Apparently, many high school graduates chose not to start college when it became clear that classes would be held remotely. Enrollment fell by 18 percent among students returning to the community college after taking time off from college. Enrollment might have dropped for this group for similar reasons as first-year students. These students had more flexibility or less attachment, and decided to skip or defer enrolling in community college because of the shift to online courses and other educational disruptions caused by the pandemic.

Community college students continuing with their educations experienced a smaller, though still substantial, drop in enrollment of 12 percent from fall 2019 to fall 2020. Another group that likely to did not want to disrupt their longer-term education plans were first-time transfer students. These are students transferring between community colleges in the system or from a college outside of the system. Among these transfer students there was a decrease in enrollments of 15 percent. Special admit students, primarily high-school students taking community college courses, decreased slightly in the fall of 2020 (-1 percent). High school students taking courses at community colleges might not have had as much flexibility to drop classes given the requirements and strict timeline for graduating from high school. Also, the tradeoff for these students was between taking a high school class online or a community college class online.

Although not reported, from spring 2019 to spring 2020 enrollment also dropped among all of the groups of students. The one exception was for special admit students who experienced a large increase in enrollment. The drops in enrollment were the largest again for those students who might have the most flexibility and least attachment to community college – first-year students (generally coming straight out of high school) and first-time transfer students. All of these enrollment losses were much smaller than from fall 2019 to fall 2020.

2.4 Enrollment Losses by Course Type and Field

Were there differences in enrollment losses across general types of courses? Figure 4 displays YOY changes in course enrollments for remedial skills, credit, degree applicable, transfer and vocational courses.[10] Course taking for remedial skills experienced the largest drop from fall 2019 to fall 2020 with a reduction of 35 percent. But, overall no basic course type was spared from large drops in enrollments in the pandemic. Vocational course enrollment fell by 16 percent. Academic courses that are transferable to four-year colleges such as the CSU and UC systems fell by 13 percent.[11]

Were some fields of study spared enrollment losses in fall 2020 and others hit especially hard? In conversations with officials at various community colleges we learned that the primary response to the pandemic was that colleges did not drop sections for classes but instead switched to teaching them remotely. The main exceptions were that programs such as nursing and medical fields were considered essential and were generally taught in-person even in spring 2020. Colleges continued to operate a handful of allied health programs in-person that would train medical professionals to help with the community response to COVID. On the other hand, the small subset of courses that were impossible to convert to online instruction because of dependence on physical facilities (e.g. automotive, aviation, cosmetology, culinary arts, dental hygiene, horticulture and welding) were cancelled.

Table 2 reports enrollment changes from fall 2019 to fall 2020 by field. Some fields experienced large enrollment losses in the pandemic. Among larger fields, Education, Engineering and Industrial Technologies, Fine and Applied Arts, and Interdisciplinary Studies each lost at least 20 percent of enrollment from fall 2019 to fall 2020. On the other side of the spectrum, Physical Sciences, Biological Sciences, and Foreign Language experienced enrollment losses of 3 percent or less in fall 2020. These results indicate that losses were felt across a wide range of fields of study and were not limited to only a few fields. But, there is some evidence of

[10] Remedial courses do not count for credit towards degrees and transfer to other colleges. Vocational courses provide credit for vocational degrees and certificates. Transfer courses provide credit for transfer to 4-year colleges such as CSUs and UCs. Courses are not limited to one category.

[11] Partly reflecting pre-pandemic decisions and commitments the number of incoming transfer students to the CSU and UC systems from California community colleges increased by 8 percent and 4 percent, respectively, from fall 2019 to fall 2020.

largest reductions in fields in which online learning might be inferior (e.g. industrial technologies, teaching aides, art, and police training).

2.5 College Losses and Pre-Pandemic Online Share

Were enrollment losses felt by all community colleges or were they concentrated in only a few colleges? Figure 5 displays the distribution of enrollment losses from fall 2019 to fall 2020 across community colleges in the system. Every college in the system experienced at least some loss in enrollment in fall 2020. A large number of colleges experienced losses in the range of 8 to 18 percent. Only a handful of college experienced losses of less than 2 percent, while enrollment fell by more than 20 percent for several colleges in the system.

Did the relative online presence of community colleges prior to the pandemic limit enrollment losses? This would be the case if, for example, colleges with more pre-existing online offerings had an easier time transitioning courses online while maintaining quality, or if they serve students who are more willing and accustomed to taking online courses. Many community colleges in the system had strong online-distant learning presences before the pandemic. Using data from fall 2019, we identify the online percentage of course enrollments for each community college. Community colleges differed in the percentage of their courses that were held online before the pandemic. The interquartile range is nearly 10 percentage points with 13 percent online at the 25th percentile and 22 percent online at the 75th percentile.

Figure 6 displays a scatterplot of the percent change in student enrollment from fall 2019 to fall 2020 by the online share of course enrollments in fall 2019. Each point represents a different community college in the system. There does not appear to be a strong relationship between student enrollment changes and pre-pandemic online shares. The point estimate from a linear regression through the data is small, negative and not statistically significant. Apparently, having a larger online presence prior to the pandemic did not protect colleges from enrollment losses in fall 2020.

3 Student Outcomes

3.1 Course Completion and Grades

We turn to examining student success in courses and how this changed during the pandemic. We first focus on course completion as the main outcome potentially affected by the shift to remote

learning. Figure 7 displays course completion rates since fall 2012. Course completion is defined as receiving a passing grade in the course relative to failing, dropping or withdrawing from the course. Course completion trended upwards and reached a high of 73 percent in spring 2019. In spring 2020 course completion dropped to 70 percent. Course completion also declined in fall 2020 from the previous year but only slightly (71 percent to 70 percent).[12] In the past few years there is a strong seasonal component (i.e. fall vs. spring) to course completion, and thus we focus on YOY changes within fall or spring semester.

The major cause of the decrease in course completion rates in spring 2020 is that a much higher percentage of students withdrew or dropped courses during the semester.[13] Figure 8 displays course withdraw/drop rates and course fail rates, which are the primary reasons for not completing courses. While course withdrawals increased substantially in spring 2020, this was offset by a large reduction in course fail rates. In fall 2020 both withdraw/drop rates and fail rates reversed course. However, withdraw rates are still higher than pre-pandemic fall 2019 levels. Partially offsetting this effect on course completion, however, fail rates remained lower in fall 2020 than fall 2019.

The decrease in fail rates in courses might be due in part to instructors being more lenient in grading during the pandemic. Table 3 reports the distribution of grades from spring 2019 to spring 2020. The percentage of courses with A's increased from 40 percent in spring 2019 to 50 percent in spring 2020 whereas the percentage of courses with B's and C's decreased. The shift in the grade distribution is too large to be fully explained by the increased withdrawal rate among students who would have otherwise earned low grades. Thus, there is evidence that instructors were more lenient in awarding high grades during this period.

The unanticipated disruption in spring 2020 resulted in more changes in course completion, withdrawals and grades than during fall 2020. It was well known among students that fall 2020 would be held online, and thus adjustments might have already been made through

[12] There is some evidence that course completion rates declined more at community colleges with higher shares of underrepresented minority students (data are not available on the full grade distribution by student race). From linear regressions using college-level data, we find that an increase in college minority share of 10 percentage points is associated with larger course completion rate declines of 0.3 percentage points in spring 2020 and 0.4 percentage points in fall 2020. Both relationships are statistically significant.

[13] Withdraws and drops differ in that drops are withdraw actions taken early in the quarter and thus do not show up on a student's transcript. A regular withdraw that is done later in the quarter shows up on the student's transcript and can create probationary problems in rare cases. Withdraws recorded as drops represent only 1 percent of all withdraws.

enrollment decisions and by instructors in their teaching methods. Those students enrolling in online courses during fall 2020 likely did so with full knowledge that courses would be taught remotely. Instructors were more prepared to teach their classes remotely.

3.2 Course Loads

The pandemic might have also impacted the number of units taken by students, affecting their longer-term time to degree or transfer preparedness. One possibility is that students dislike online learning and might have shifted their total units downward, taking only the most important courses that they needed and postponing others. Alternatively, with higher unemployment, students may have pursued more full-time education. Table 4 reports the distribution of students taking different unit loads from spring 2019 to fall 2020. On average, course loads did not change substantially. The percent of students taking 15 or more units, for example, was 10 percent in fall 2019 and 11 percent in fall 2020. Similarly, the percent of students taking 15 or more units was 10 percent in both spring 2019 and fall 2020. While it may be the case that students who remained enrolled tended to be those inclined to take higher course loads, the lack of significant changes in the distribution of unit totals provides some evidence that there was not a major shift towards lower or higher loads during the pandemic.

4 Conclusions

We use administrative college-level panel data covering the universe of students and courses in the 116-college California Community College System to provide the first analysis of COVID-19 impacts on community college students. We find that the pandemic had a large effect on student enrollment in the system: a loss of roughly 61,000 students from spring 2019 to spring 2020 and approximately 240,000 students from fall 2019 to fall 2020. The enrollment drop of 15 percent in fall 2020 is unprecedented. These patterns contrast sharply with slight enrollment increases in the CSU and UC systems. All racial and ethnic groups experienced large enrollment effects in the spring and fall of 2020, but African-American and Latinx students experienced the largest drops. Enrollment fell the most for first-year students in the community college system, for basic skills courses, and fields such as engineering/industrial technology, education, interdisciplinary studies, and art. Enrollment losses were felt throughout the community college

system, and colleges with larger online presences prior to the pandemic were not insulated from these effects.

Our administrative data also contain detailed information on unit loads, withdrawals, completions, and grade distributions. In the disruption to courses caused by COVID-19 in spring 2020, there was a substantial drop in course completion among community college students. Withdrawals and drops for courses in the spring increased despite evidence that, if anything, professors awarded higher grades. Fall course completion was not as impacted, perhaps reflecting the fact that students were aware that courses would be online and opted not to enrol. Instructors also had more time to adjust to teaching their courses remotely, potentially affecting course quality. Although it is too early to tell, these disruptions to course outcomes might have derailed some students from obtaining degrees and transferring to four-year colleges, and ultimately have a longer term effect on earnings.[14]

This first view of changes in enrolment and academic outcomes at community colleges in the pandemic suggests that COVID-19 created a major and unprecedented disruption to education. The results in this paper raise a number of interesting questions for future study as more data becomes available. First, it will be important to shed additional light on why enrolment at community colleges was so much more sensitive to the pandemic and the shift to online courses than was four-year college enrolment. In particular, the interplay between labor market opportunities, college cost, and fields of study seem especially compelling. Second, it will be important to examine whether reductions in enrolment ultimately reduce the fraction of students who earn associate's degrees or transfer to four-year colleges, and whether short-run reduction in enrolment translate into permanent reductions in educational attainment that affect future labor market returns. And finally, from the college perspective, the revenue losses from losing nearly 250,000 students in the California community college system will be severe and likely have looming budgetary consequences. Thus, it will be important to document how community colleges address these issues and the effects this has on future educational opportunities for low-income and minority students.

[14] The broader losses from the pandemic on learning, earnings and economies might be large (Hanushek and Woessmann 2020).

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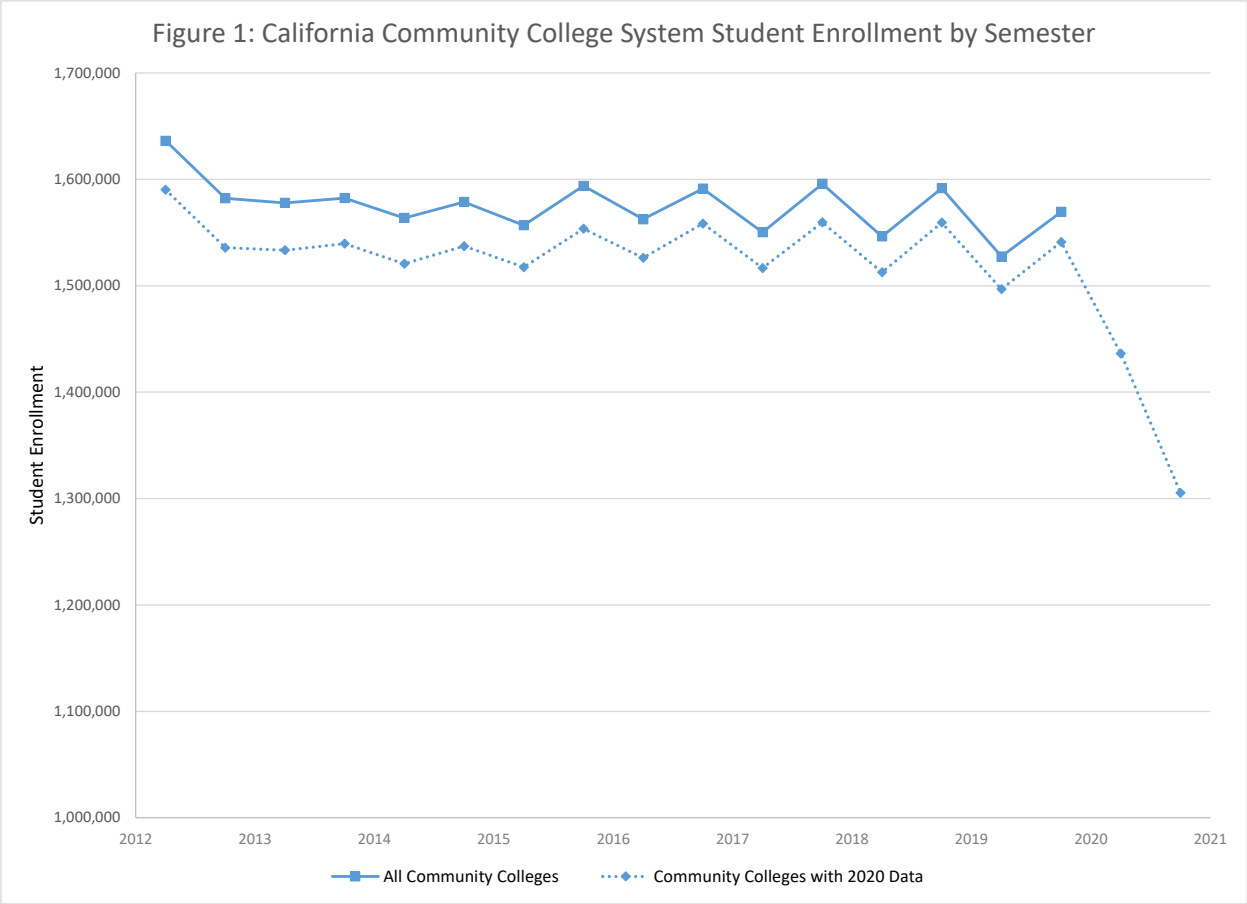


Figure 1: California Community College System Student Enrollment by Semester
1,700,000
1,600,000
1,500,000
1,400,000
1,300,000
1,200,000
1,100,000
1,000,000
Student Enrollment
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
All Community Colleges
Community Colleges with 2020 Data

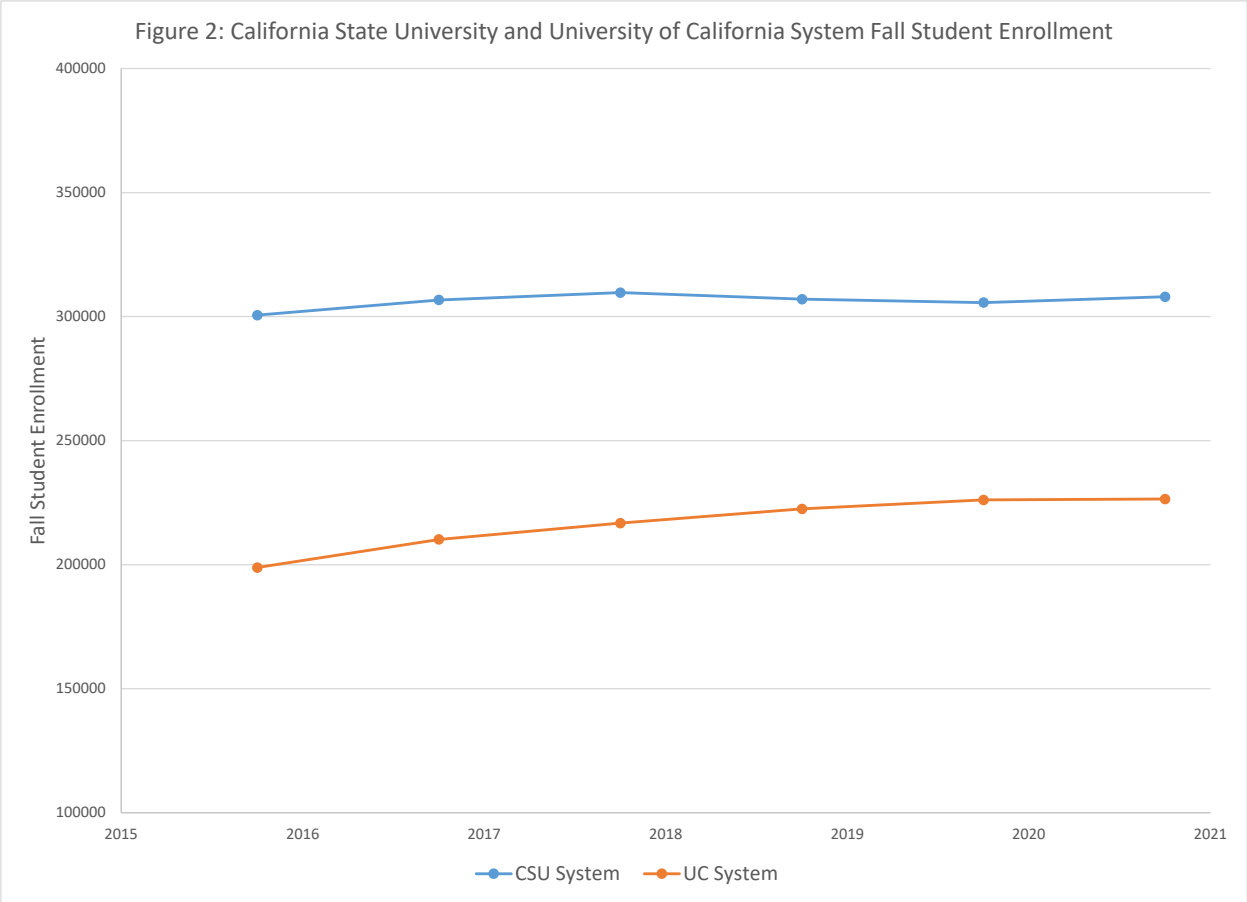


Figure 2: California State University and University of California System Fall Student Enrollment
400000
350000
300000
250000
200000
150000
100000
Fall Student Enrollment
2015
2016
2017
2018
2019
2020
2021
CSU System
UC System

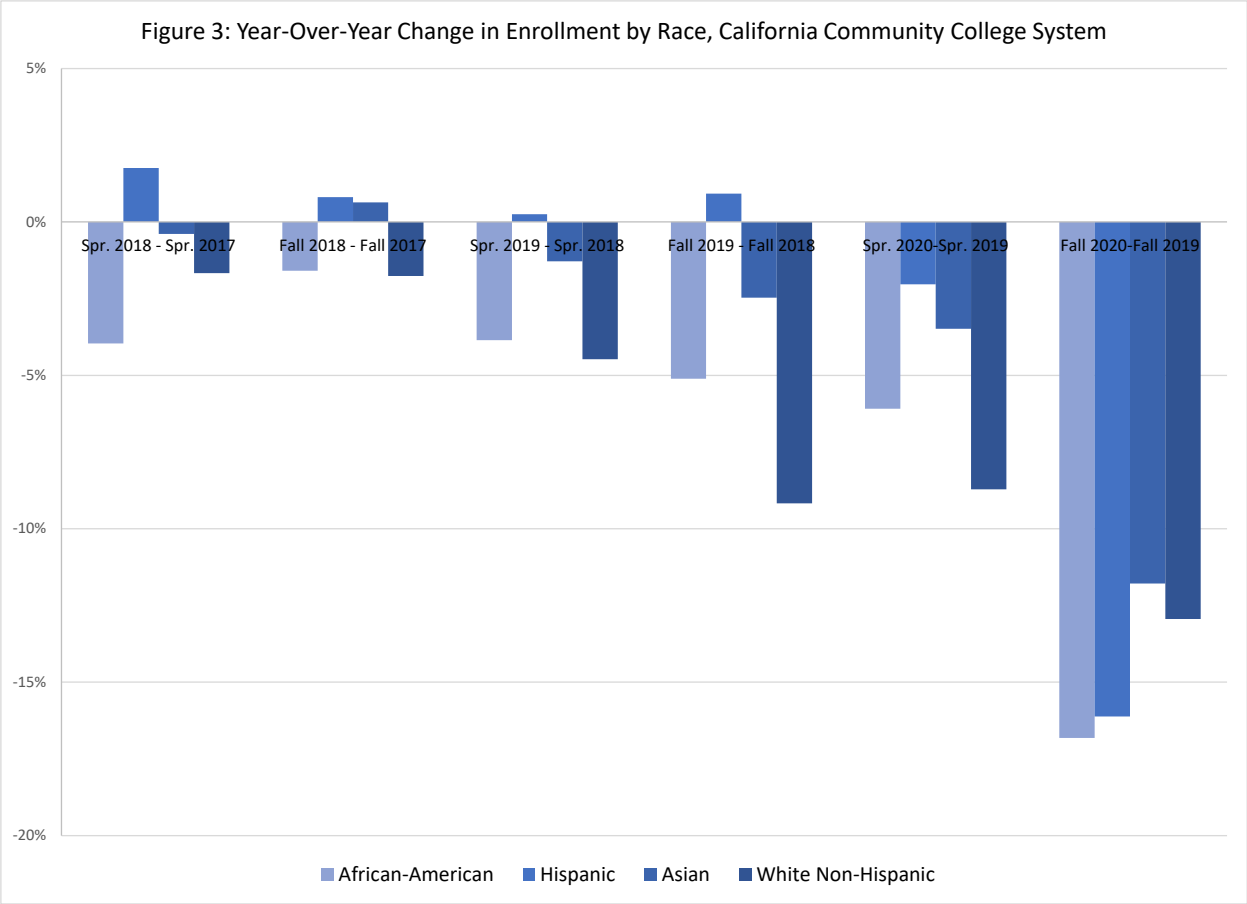
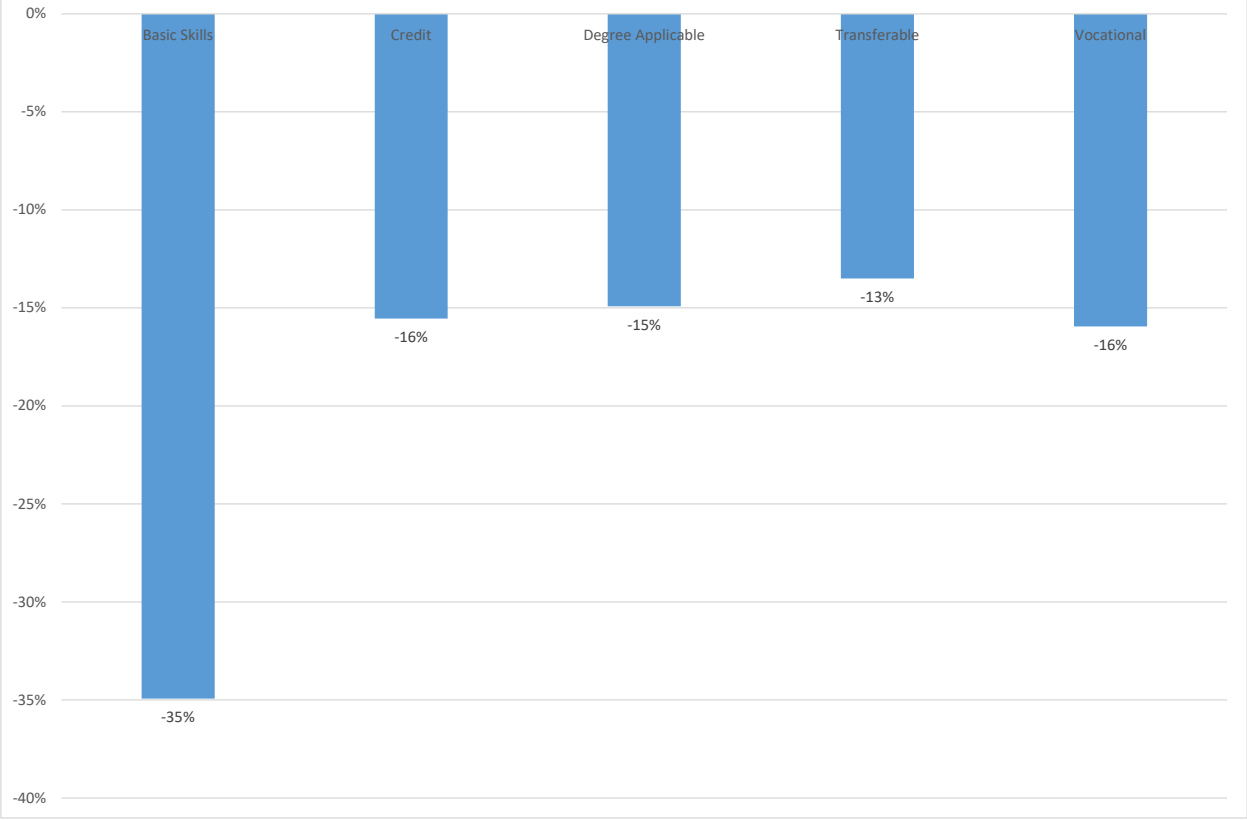


Figure 3: Year-Over-Year Change in Enrollment by Race, California Community College System
5%
0%
-5%
-10%
-15%
-20%
Spr. 2018 - Spr. 2017
Fall 2018 - Fall 2017
Spr. 2019 - Spr. 2018
Fall 2019 - Fall 2018
Spr. 2020-Spr. 2019
Fall 2020-Fall 2019
African-American
Hispanic
Asian
White Non-Hispanic

Figure 4: Year-Over-Year Changes in Course Enrollments by Type of Course (Fall 2020)



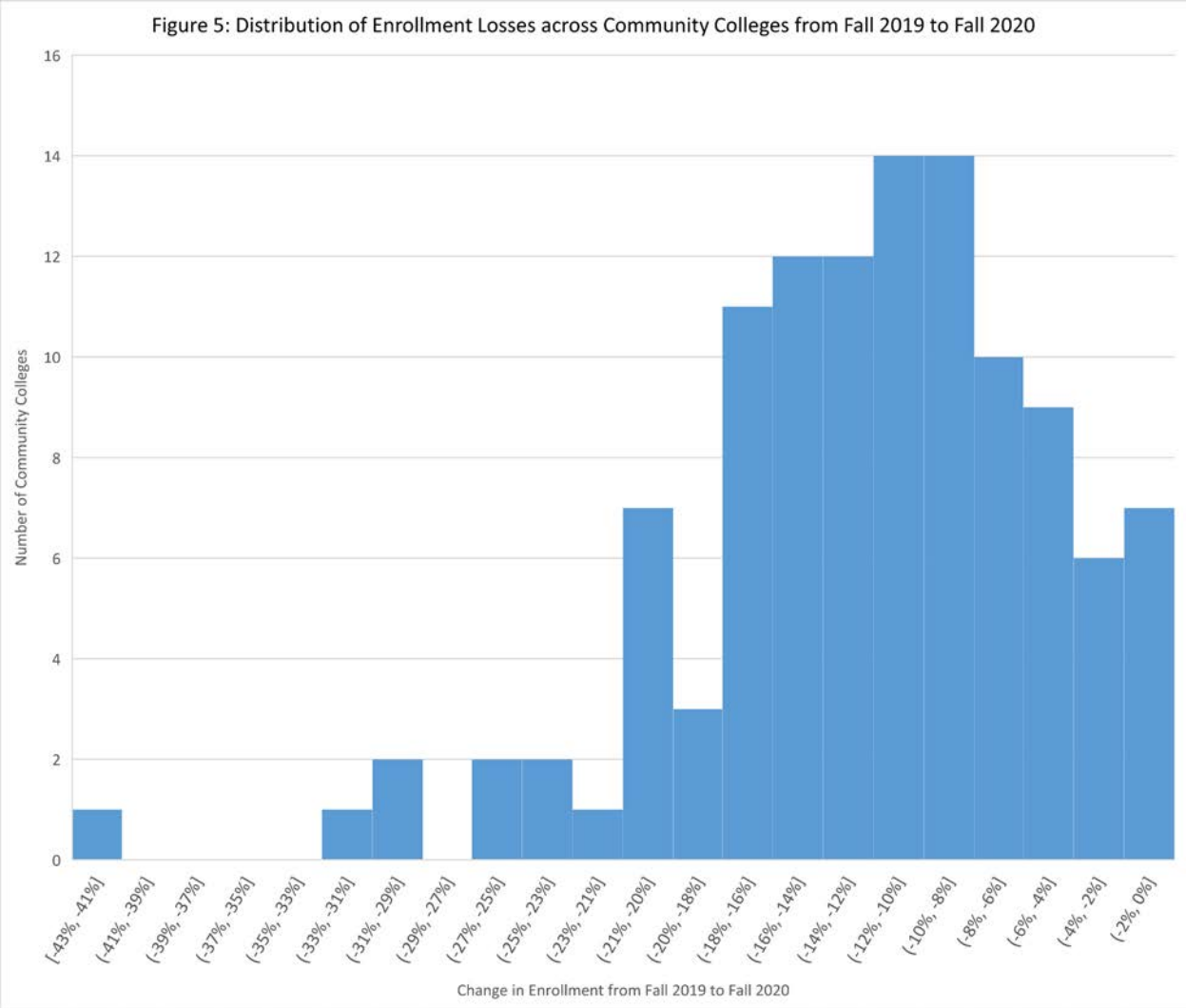


Figure 5: Distribution of Enrollment Losses across Community Colleges from Fall 2019 to Fall 2020
Number of Community Colleges
0
2
4
6
8
10
12
14
16
[-43%, -41%)
(-41%, -39%]
(-39%, -37%]
(-37%, -35%]
(-35%, -33%]
(-33%, -31%]
(-31%, -29%]
(-29%, -27%]
(-27%, -25%]
(-25%, -23%]
(-23%, -21%]
(-21%, -20%]
(-20%, -18%]
(-18%, -16%]
(-16%, -14%]
(-14%, -12%]
(-12%, -10%]
(-10%, -8%]
(-8%, -6%]
(-6%, -4%]
(-4%, -2%]
(-2%, 0%]
Change in Enrollment from Fall 2019 to Fall 2020

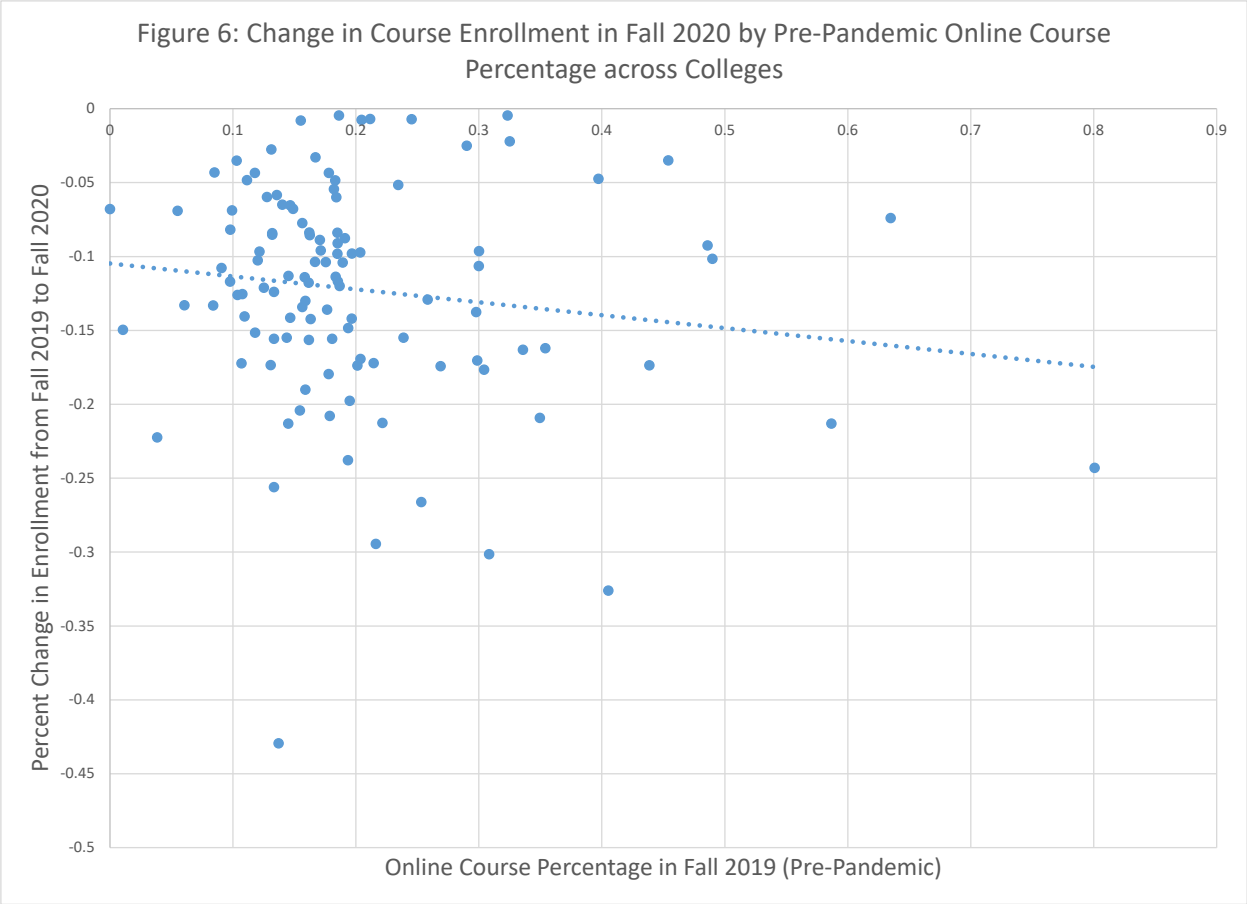


Figure 6: Change in Course Enrollment in Fall 2020 by Pre-Pandemic Online Course Percentage across Colleges
Percent Change in Enrollment from Fall 2019 to Fall 2020
0
-0.05
-0.1
-0.15
-0.2
-0.25
-0.3
-0.35
-0.4
-0.45
-0.5
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
Online Course Percentage in Fall 2019 (Pre-Pandemic)

Figure 7: California Community College System Course Completion Rates

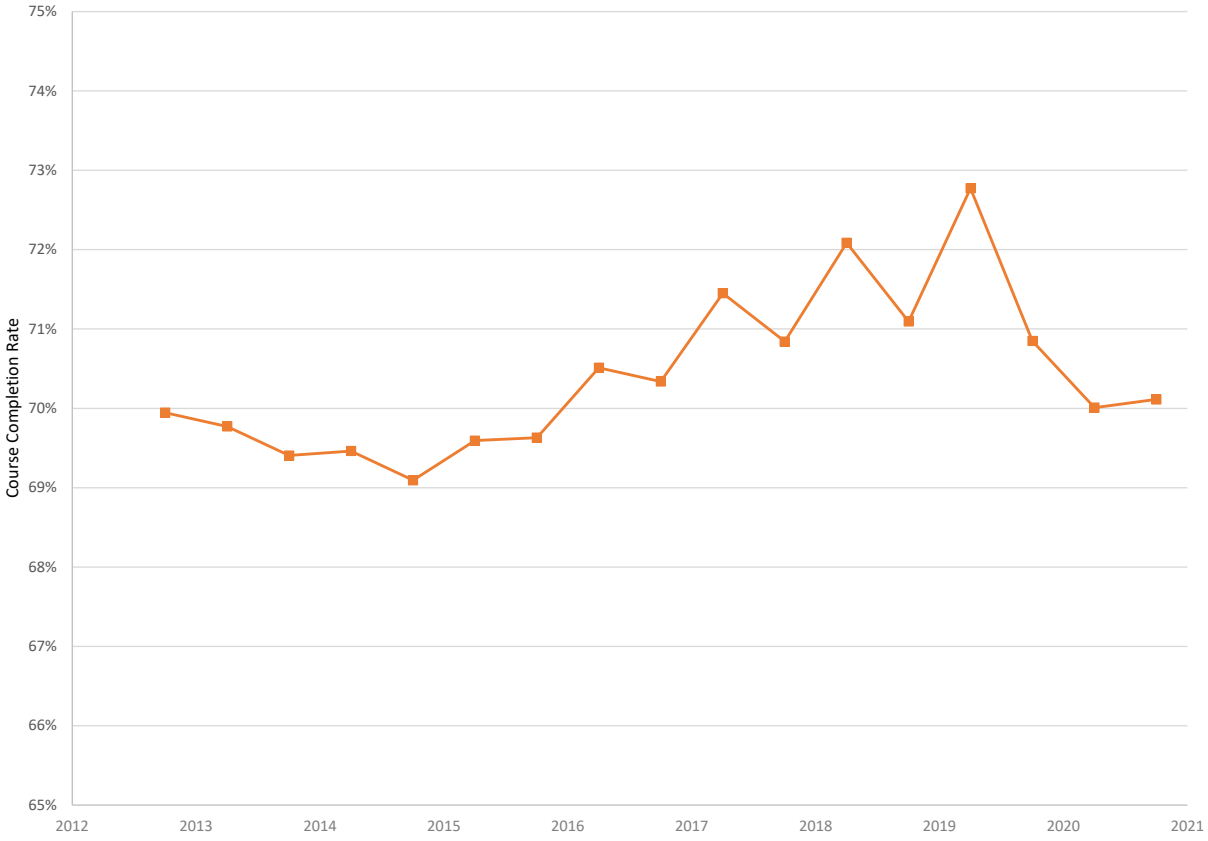


Figure 8: California Community College System Course Withdraw/Drop and Fail Rates

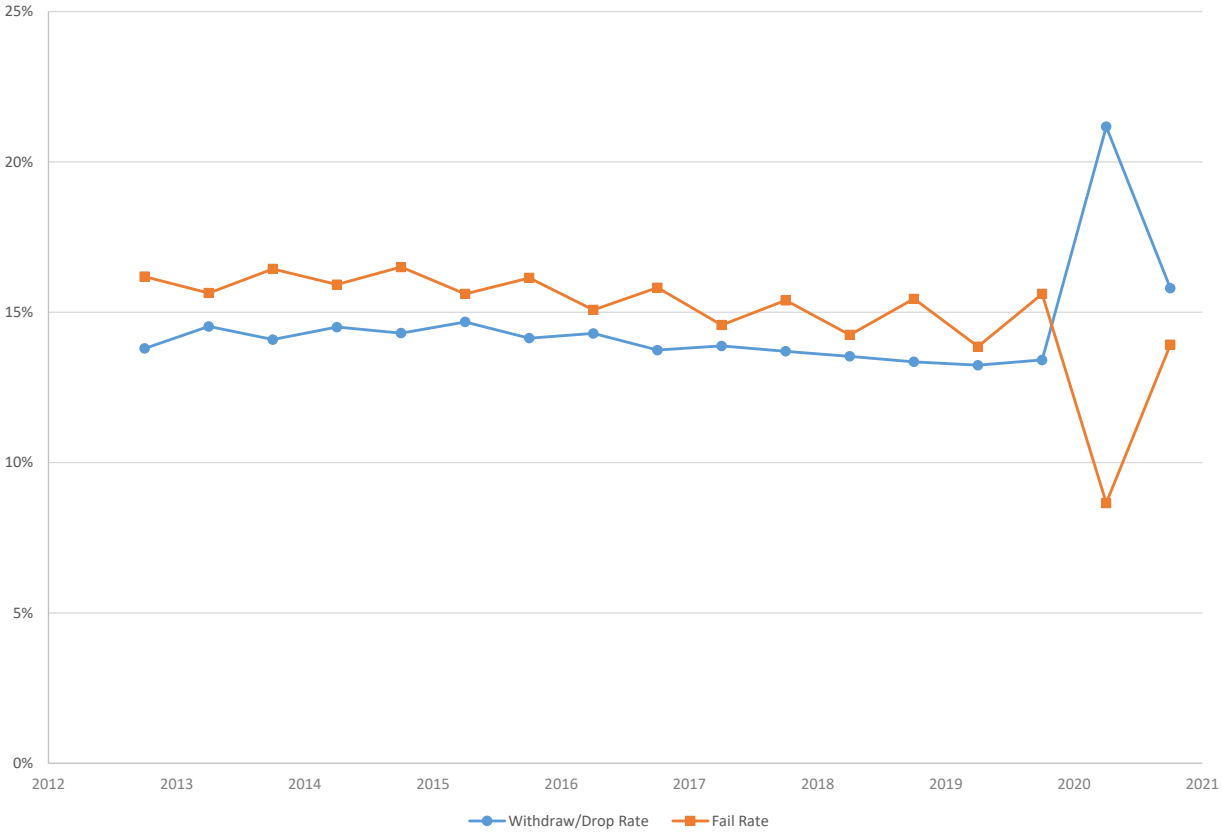


Table 1: Enrollment Changes by Type of Student

Student Type	Fall 2019	Fall 2020	Change	Percent
Continuing Student	856,323	754,317	-102,006	-12%
First-Time Student	241,913	188,817	-53,096	-22%
First-Time Transfer Student	107,787	91,285	-16,502	-15%
Returning Student	171,417	140,603	-30,814	-18%
Special Admit Student	103,722	102,979	-743	-1%

Notes: Calculated from administrative data from the California Community College system. The total number of students enrolled of each type is reported. Enrollment is for all colleges except four colleges that did not report enrollment data in fall 2020. See text for more details.

Table 2: Course Enrollment Losses from Fall 2019 to Fall 2020 by Field of Study

Field of Study	Fall 2019	Fall 2020	Percent Change	Share of Fall 2019
Agriculture and Natural Resources	29,340	26,945	-8%	1%
Biological Sciences	158,068	154,809	-2%	4%
Business and Management	213,162	204,172	-4%	6%
Education	235,900	168,382	-29%	6%
Engineering and Industrial Technologies	135,155	87,798	-35%	4%
Family and Consumer Sciences	164,299	150,206	-9%	4%
Fine and Applied Arts	288,652	231,837	-20%	8%
Foreign Language	75,224	74,790	-1%	2%
Health	128,296	113,780	-11%	3%
Humanities (Letters)	601,017	538,259	-10%	16%
Information Technology	100,137	96,050	-4%	3%
Interdisciplinary Studies	156,187	119,378	-24%	4%
Mathematics	406,154	349,892	-14%	11%
Media and Communications	71,154	65,626	-8%	2%
Physical Sciences	171,459	167,077	-3%	4%
Psychology	175,950	168,886	-4%	5%
Public and Protective Services	146,406	121,122	-17%	4%
Social Sciences	527,507	501,505	-5%	14%

Notes: Calculated from administrative data from the California Community College system. The total number of courses in each field of study is reported.

Table 3: Course Grades Year over Year Changes

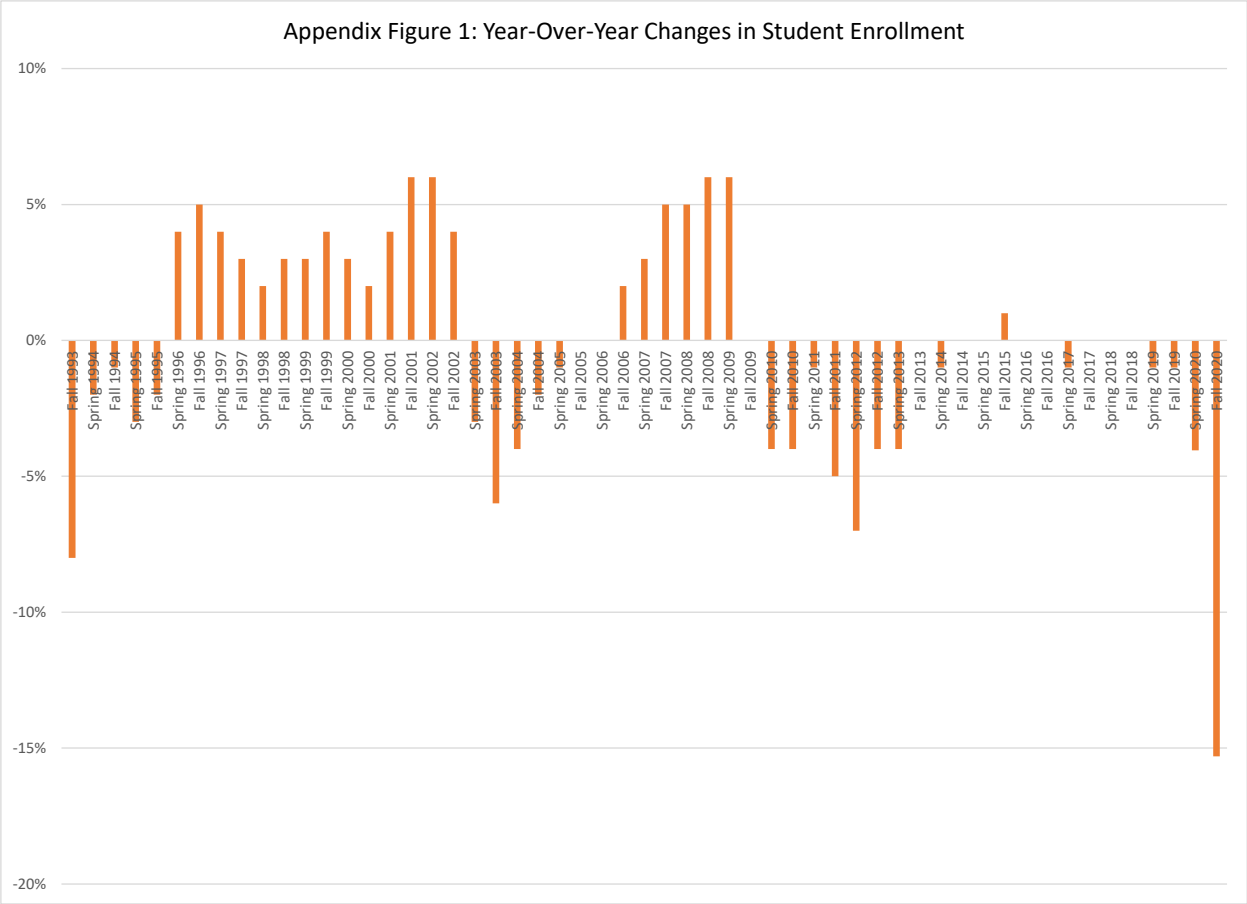
	Spring 2019		Spring 2020		Fall 2019		Fall 2020	
	Courses	Share	Courses	Share	Courses	Share	Courses	Share
Grade A	1,258,314	40%	1,368,272	50%	1,295,484	39%	1,294,648	45%
Grade B	738,512	24%	617,801	22%	766,587	23%	616,345	22%
Grade C	457,591	15%	322,876	12%	485,786	15%	348,734	12%
Pass (No Letter)	156,094	5%	144,501	5%	168,665	5%	114,544	4%
Fail	497,184	16%	303,330	11%	598,579	18%	471,462	17%

Notes: Calculated from administrative data from the California Community College system. The total number of courses with each grade is reported.

Table 4: Distribution of Student Unit Loads in California Community College System

	Fall 2019		Fall 2020		Spring 2019		Spring 2020	
Unit Load	Number	Share	Number	Share	Number	Share	Number	Share
B. 0.1 - 2.9	80,137	6%	49,793	4%	92,749	7%	79,198	6%
C. 3.0 - 5.9	392,910	28%	361,980	30%	393,507	28%	388,435	29%
D. 6.0 - 8.9	267,328	19%	234,956	19%	270,237	20%	260,728	19%
E. 9.0 - 11.9	224,787	16%	194,220	16%	222,046	16%	214,844	16%
F. 12.0 -14.9	313,937	22%	251,852	21%	270,086	20%	261,939	20%
G. 15 +	146,937	10%	130,026	11%	133,363	10%	134,239	10%

Notes: Calculated from administrative data from the California Community College system. The total number of students enrolled at each semester unit load level is reported.


Appendix Figure 1: Year-Over-Year Changes in Student Enrollment
10%
5%
0%
-5%
-10%
-15%
-20%
Fall 1993
Spring 1994
Fall 1994
Spring 1995
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