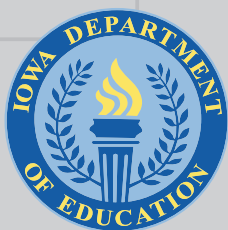


FALL ENROLLMENT

IOWA COMMUNITY COLLEGES

2020



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Executive Summary

The COVID-19 outbreak was declared a pandemic in March 2020. This pandemic has had an impact in Iowa community college's 2020 fall enrollment in the following areas:

- Total enrollment dropped 6.0 percent, the enrollment in part-time students decreased 5.1 percent, and the enrollment in full-time students declined 7.4 percent. Nationwide, the same categories decreased by 9.4, 10.1 and 8.2 percent respectively [1]. Total credit hours decreased 6.5 percent to 705,267 credit hours;
- Part-time enrollment remained larger than full-time enrollment and reached an all-time record high 64.8 percent of total fall enrollment;
- Enrollments of nontraditional college age students decreased in higher proportion (8.9 percent) than that of the traditional age students (5.3 percent decline), compared to 9.2 percent and 8.7 percent nationally [1];
- Joint enrollment decreased (3.6 percent) for the first time since tracking began for fall enrollment data. Nationally, joint enrollment decreased 5.5 percent [1];
- Online enrollment increased 45.6 percent, compared to last fall's 5.0 percent, and 79.2 percent of all students were enrolled in online or blended courses;
- Online credit hours increased 93.0 percent, compared to last fall's 5.8 percent, and 60.8 percent of all credit hours were delivered via online or blended mode;
- Percentages of economically disadvantaged students increased from 22.0 to 23.3; percentages of students with disabilities decreased from 3.0 to 2.7;
- The proportion of minorities decreased (0.5 percent) for the first time since modern tracking started in 2010. The decrease in enrollments was the heaviest on Asian students (13.0 percent) and black students (9.8), compared to a 5.5 percent decline for white students. Nationally, black students declined at the highest rate (14.2 percent), followed by Hispanic students (12.7 percent) and white students (11.0 percent);
- The proportion of female students increased according to stable trends. Nationwide the decrease in enrollment of male students was nonproportional [1];
- Average course load for both full-time students (13.9 credits) and part-time students (5.5 credits) remained unchanged;
- Similar to last year, students in college parallel programs comprised 41.4 percent of total fall enrollment, followed by students with no program of study (28.6 percent) and CTE programs (28.0 percent)
- Percentages of new enrollments (22.2 percent of all) and new enrollments immediately after high school completion (9.8 percent of all) remain stable, while nationwide new enrollments in community colleges (down 22.7 percent) dramatically outpaced general enrollment, a 9.4 percent decrease [1].



Table of Contents

Students	1
Students Demographics	3
Academics	5
Program Type	7
Transfer Major Programs	8
Career Clusters	10
Online Enrollment	11
Joint Enrollment	12
Immediate Enrollment	13
Enrollment Projections	15
References	16

Students

The COVID-19 pandemic has been negatively affecting the US economy. Previous research has indicated a countercyclical relationship between community college enrollment and local economic conditions, i.e., enrollment drops when the local economy gets better [2]; however, this countercyclical relationship does not occur simultaneously with economic crisis—rather, it manifests itself consecutively. As a result, a short-term crisis may not trigger higher enrollments [3]. In fall 2020, a total of 83,109 students enrolled in Iowa community colleges, a 6.0 percent decrease in enrollment from last fall (the largest decrease in the last seven years).

The lack of typical countercyclical reaction may be explained by the short period of time since the peak of COVID-19-related unemployment, or the short-term nature of high unemployment rates in Iowa. The US Bureau of Labor Statistics shows a dramatic increase of unemployment rates in Iowa from 3.3 percent in March to 11.0 percent in April of 2020; however, since April these rates demonstrate a stable recovery, with the latest rate of 4.7 percent in September – an indicator of the short-term nature of high unemployment rates. For contrast, during Great Recession, the unemployment rate in Iowa remained at high stability above 6.0 percent for as long as 16 months before enrollment in Iowa community colleges reached its peak [4]. Figure 1 displays fall enrollment data since 1970, which also illustrates that the peak of Iowa community college’s enrollment occurred in the fall of 2010 which is typically identified as the end of the Great Recession of 2007-2009.

Moreover, Figure 1 shows there has been a year-to-year decrease in fall enrollment since 2011. The decrease in 2020 enrollment is the largest in the last seven years, which is due to COVID-19. The negative impact of COVID-19 on enrollment does not only occur in Iowa. According to recent data from National Student Clearinghouse Research Center, nationally, community colleges have experienced a great loss in fall enrollment (9.4 percent)[1].

FALL ENROLLMENT HIGHLIGHTS



Enrollment
83,109
students



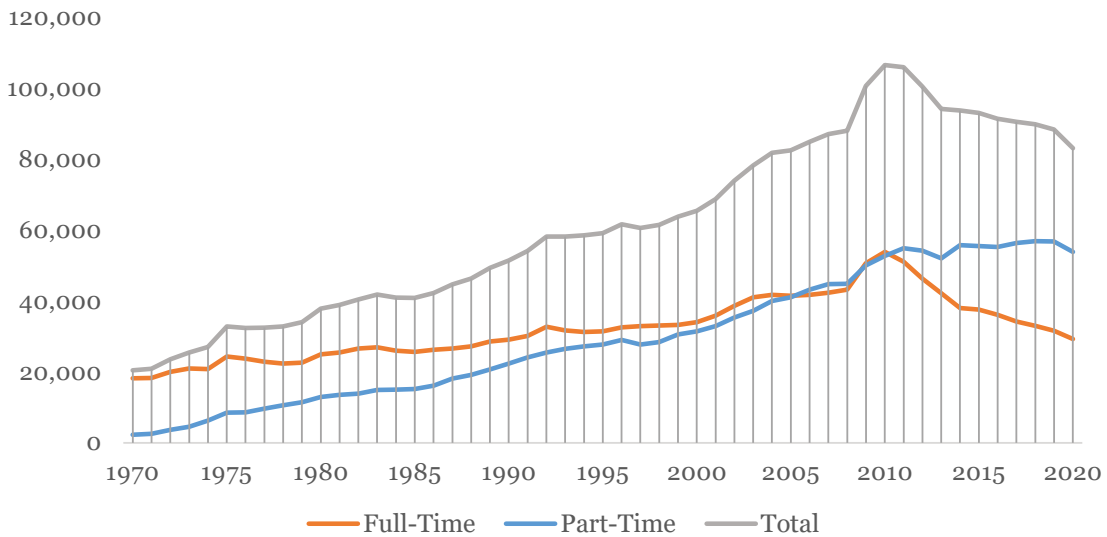
Enrollment
increased at **1** college
and decreased at 14.



35.2%
of students
enrolled full time



FIGURE 1: FALL ENROLLMENT BY STATUS: 1970-2020



Although COVID-19 influenced this fall’s enrollment, the proportion of full-time and part-time students did not change significantly. The number of full-time students (i.e., students who enrolled in more than 12 credit hours) as a percentage of total fall enrollment has steadily declined from 89.1 percent in 1970 to 35.2 percent in 2020 (Figure 2). This fall, enrollment of full-time students was 29,236 students (35.2 percent of total enrollment), compared to 31,580 students (35.7 percent) last fall.

While the percentage of full-time students has been decreasing since 1970, the percentage of part-time students has increased steadily over the years. In fall 2020, 53,873 students were enrolled as part-time students, which accounted for 64.8 percent of total enrollment, compared to 56,795 part-time students (64.3 percent of total enrollment) last fall. Table 1 shows the full-time, part-time and total enrollment of each community college. This fall, the enrollment increased at one college and decreased at 14 colleges.

FIGURE 2: HISTORICAL ENROLLMENT OF FULL-TIME STUDENTS AND PART-TIME STUDENTS AS A PERCENT OF TOTAL ENROLLMENT: 1970-2020

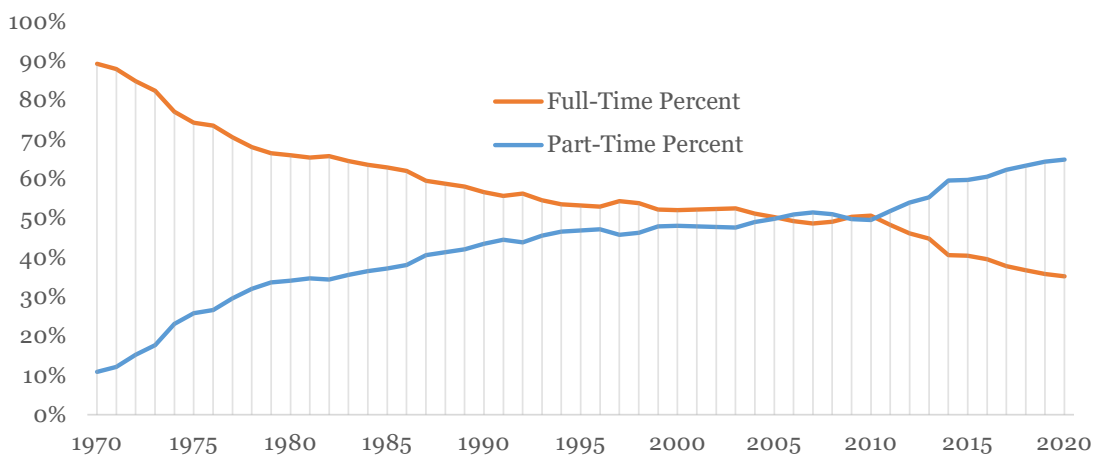


TABLE 1: FALL 2020 ENROLLMENT BY COLLEGE

College	Total	Full-time		Part-time		Change (%) from last year
		N	%	N	%	
Northeast Iowa	4,167	1,032	24.8%	3,135	75.2%	-5.5%
North Iowa Area	2,681	1,285	47.9%	1,396	52.1%	-7.4%
Iowa Lakes	1,833	828	45.2%	1,005	54.8%	-11.4%
Northwest Iowa	1,670	596	35.7%	1,074	64.3%	-5.8%
Iowa Central	4,561	2,341	51.3%	2,220	48.7%	-8.7%
Iowa Valley	2,557	1,230	48.1%	1,327	51.9%	-5.6%
Hawkeye	5,042	1,994	39.5%	3,048	60.5%	-1.4%
Eastern Iowa	7,081	2,423	34.2%	4,658	65.8%	-11.5%
Kirkwood	12,280	4,304	35.0%	7,976	65.0%	-13.4%
Des Moines Area	23,051	5,703	24.7%	17,348	75.3%	-0.9%
Western Iowa Tech	5,360	1,707	31.8%	3,653	68.2%	-10.3%
Iowa Western	5,784	2,336	40.4%	3,448	59.6%	8.7%
Southwestern	1,503	621	41.3%	882	58.7%	-4.9%
Indian Hills	3,279	1,734	52.9%	1,545	47.1%	-9.2%
Southeastern	2,260	1,102	48.8%	1,158	51.2%	-8.8%
TOTAL	83,109	29,236	35.2%	53,873	64.8%	-6.0%

Students Demographics

In fall 2020, 57.4 percent of students enrolled were female, 42.6 percent were male and 33 students did not report gender. The composition of male and female students demonstrates an existing trend that enrollment of female students increase annually. Nationwide the decrease in enrollment of male students is nonproportional [1].

COVID-19 also impacted the age distribution of fall 2020 students. The average age of community college students this fall is 20 with a median age of 18, which is one year younger than last year. This fall, students under age 18 (48.9 percent) and between 18 and 22 (31.1 percent) are the two largest age groups that Iowa’s community colleges are serving, followed by students between 23 and 26 (6.6 percent) and between 31 and 39 (5.4 percent). Other age groups in total comprised less than 10 percent of fall enrollment this year. Divided by traditional (under 25 years) and nontraditional college age (25 years and older) groups, percentages were 83.7 and 16.3, respectively. This fall enrollment pattern demonstrates higher losses of populations of 25 years and older (nontraditional college age students). This age group declined

STUDENT DEMOGRAPHIC HIGHLIGHTS



57.4%
of students
are female

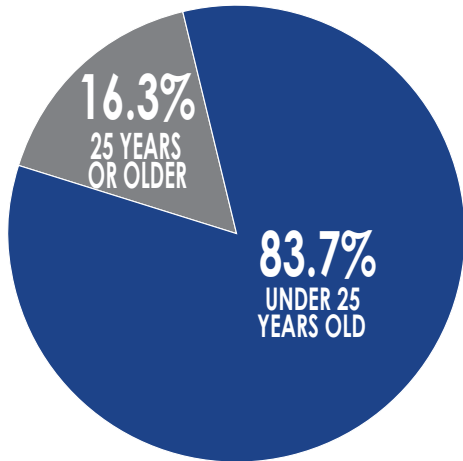


18
median age
of students



23.1%
of students are
minorities

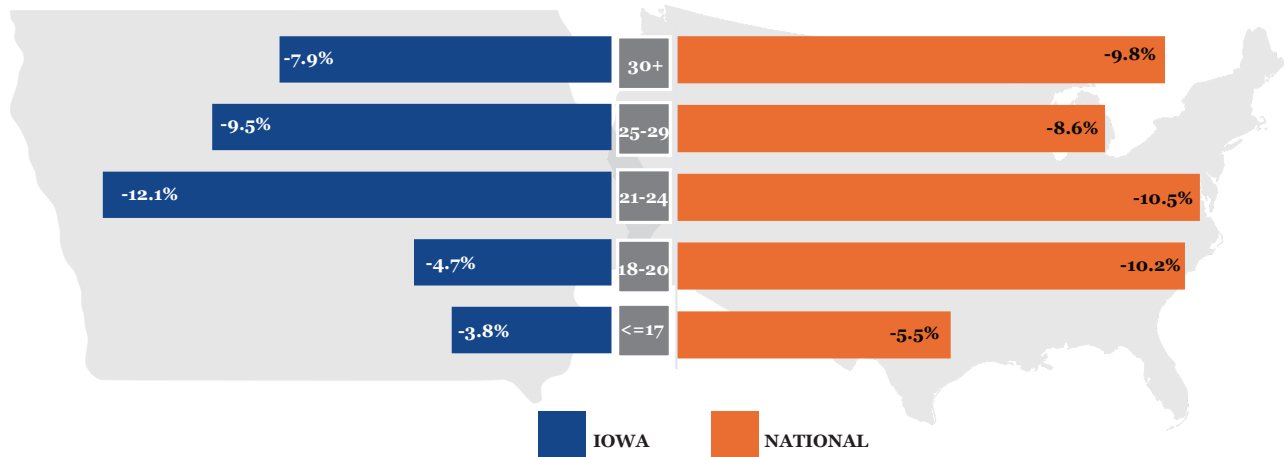
FIGURE 3: TRADITIONAL AND NONTRADITIONAL COLLEGE AGE



by 8.9 percent, as compared to a 5.3 percent decline of the under 25 years age group (traditional college age) (Figure 3). Nationwide, nontraditional college age students and traditional college age students decreased 9.2 percent and 8.7 percent, respectively [1]. Figure 4 compares national data and Iowa data in terms of enrollment change by age, which shows Iowa lost more students ages 21-29 than the national average.

Around 90.3 percent of students enrolled in Iowa’s community colleges this fall were Iowans. Residents from other states accounted for 8.7 percent of enrolled students, and foreign nationals comprised 0.9 percent (Figure 5). This composition remained unchanged compared to last year, except for foreign nationals, which, contrary to established trends for growth, moved to under one percent from 1.3 percent last year.

FIGURE 4: ENROLLMENT DECLINE BY AGE GROUPS



This fall, 5,967 students (7.2 percent) did not report their race and ethnicity. Among the 77,142 students who reported their race and ethnicity, 23.1 percent of students were minorities, compared to 23.6 percent last year. Hispanics were the second largest racial/ethnic group (9.3 percent), followed by African-Americans (7.6 percent) and Asians (2.9 percent). More than two percent indicated they were part of multiple racial and ethnic groups. American Indians and Pacific Islanders constituted 0.6 percent and 0.2 percent, respectively. The decline in percentages of racial and ethnic minorities is unprecedented, as it has been on the rise annually since the beginning of

tracking. Figure 6 compares national data and Iowa data in terms of enrollment change by race/ethnicity. It shows that Iowa lost more Asian students than the national average, i.e., -13.0 percent (Iowa) versus -6.9 percent (nationwide)[1].

This fall also demonstrated declines and gains in some categories of traditionally underserved populations: students with disabilities represented only 2.7 percent of the total enrollment (3.0 percent last year), while representation of economically disadvantaged students grew to 23.2 percent from 22.0 percent last fall.

FIGURE 5: FALL 2020 ENROLLMENT BY RESIDENCY

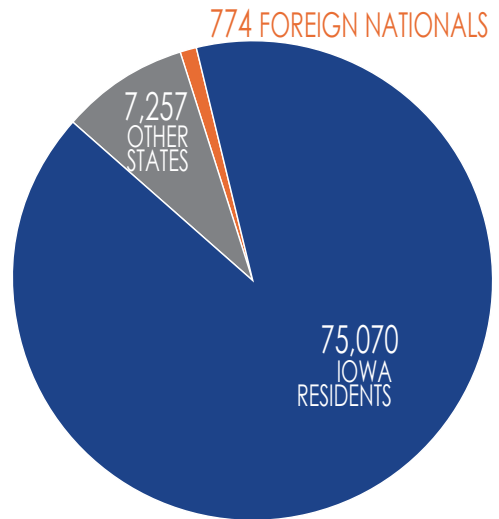
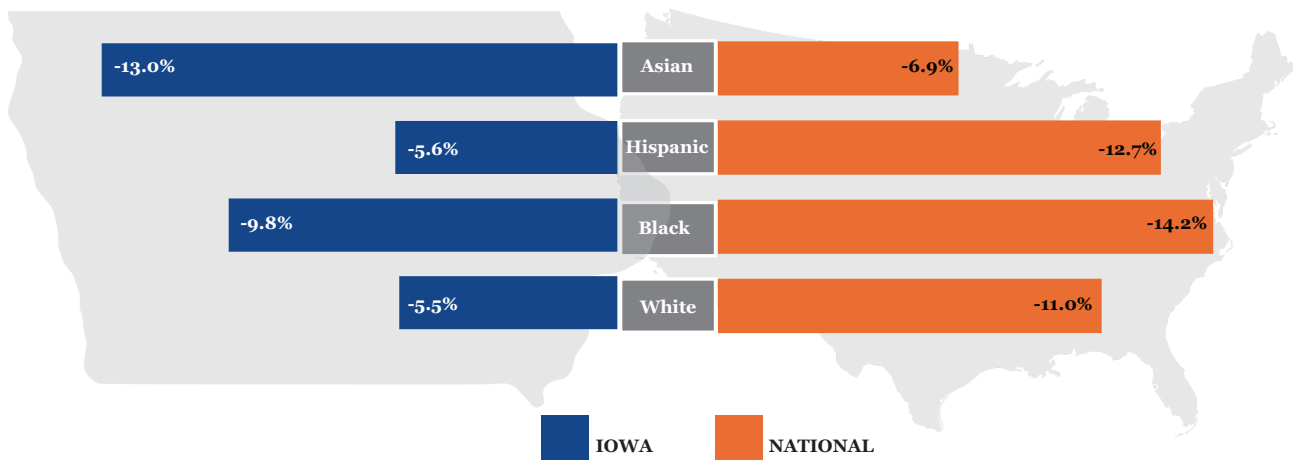


FIGURE 6: ENROLLMENT DECLINE BY RACE AND ETHNICITY



Academics

Due to COVID-19, the total credit hours registered decreased. Students attending Iowa’s community colleges this fall registered for 705,267 credit hours, compared to 754,124 credit hours last fall (a 6.5 percent decrease). On average, students enrolled in

8.5 credit hours in the fall semester, which is consistent with last fall. Figure 7 displays the change of total credit hours and average credit hours registered per student in the last five years. The decreases in total credit hours and average credit hours, as indicated in the figure, align with the enrollment decline in recent years.

STUDENT ACADEMIC HIGHLIGHTS



8.5
Average number of credit hours



Total Credit Hours Down **6.5%** since last year

FIGURE 7: TOTAL CREDIT HOURS (TOP) AND AVERAGE CREDIT HOURS PER STUDENT (BOTTOM): 2016-2020

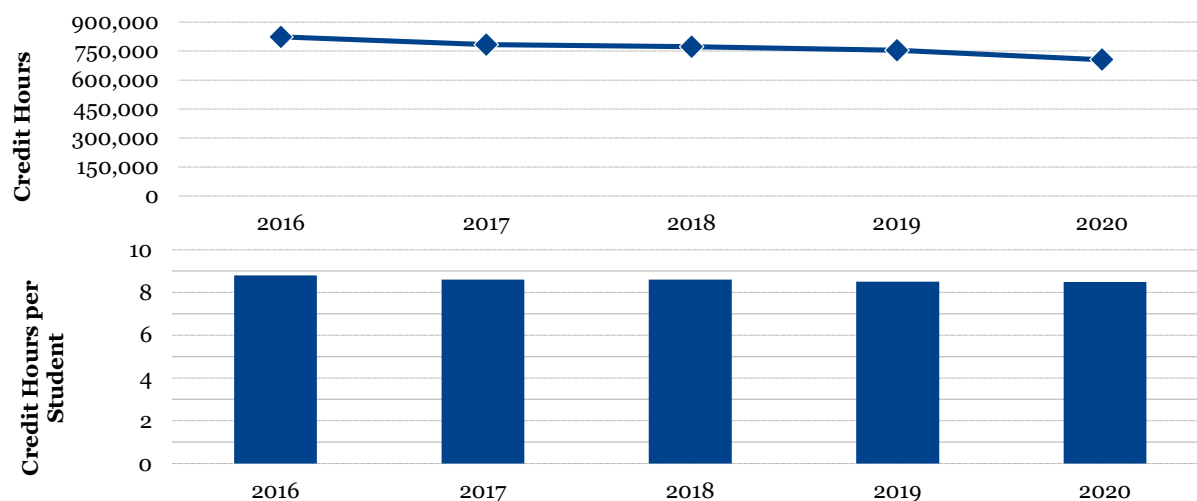


Table 2 summarizes the fall registered credit hours by college. Full-time students registered for 407,814 credit hours, accounting for 57.8 percent of total credit hours registered. This represents a slight decrease from last fall in which the full-time students registered comprised 58.3 percent of total registration hours; however, the average course load for full-time students was 13.9 credit hours, which is consistent with last fall. Part-time students registered for 297,453 credit hours, accounting for 42.2 percent of total credit hours, a 5.3 percent decrease from last fall. The average course load for part-time students remained virtually unchanged from last fall's 5.5 credit hours.

TABLE 2: SUMMARY OF FALL 2020 TOTAL REGISTERED CREDIT HOURS BY COLLEGE

College	Total Hours	Credit Hours Taken by Full-Time Students		Credit Hours Taken by Part-Time Students		Average Course Load	
		(N)	(%)	(N)	(%)	Full-Time	Part-Time
Northeast Iowa	31,697	14,673	46.3	17,024	53.7	14.2	5.4
North Iowa Area	25,745	18,304	71.1	7,441	28.9	14.2	5.3
Iowa Lakes	17,513	12,631	72.1	4,882	27.9	15.3	4.9
Northwest Iowa	14,675	9,278	63.2	5,398	36.8	15.6	5.0
Iowa Central	46,285	34,684	74.9	11,602	25.1	14.8	5.2
Iowa Valley	25,150	17,743	70.5	7,407	29.5	14.4	5.6
Hawkeye	45,311	28,615	63.2	16,696	36.8	14.4	5.5
Eastern Iowa	58,567	32,600	55.7	25,967	44.3	13.5	5.6
Kirkwood	107,791	59,543	55.2	48,248	44.8	13.8	6.0
Des Moines Area	171,644	79,064	46.1	92,580	53.9	13.9	5.3
Western Iowa Tech	45,021	24,629	54.7	20,392	45.3	14.4	5.6
Iowa Western	54,874	33,554	61.1	21,321	38.9	14.4	6.2
Southwestern	13,781	8,801	63.9	4,980	36.1	14.2	5.6
Indian Hills	24,985	17,966	71.9	7,019	28.1	10.4	4.5
Southeastern	22,229	15,731	70.8	6,498	29.2	14.3	5.6
TOTAL	705,267	407,814	57.8	297,453	42.2	13.9	5.5

Program Type

Programs offered by community colleges are generally categorized as college parallel (transfer arts and sciences), career and technical education (CTE) or general studies (AGS). College parallel programs prepare students for matriculation into four-year colleges or universities; CTE programs prepare students for the workforce and AGS

allows students to receive a two-year degree with a custom-selected set of courses not leading to a specific occupation or direct transfer. Students who declared two or more different types of programs were reported as a separate group. Students who were not eligible or were not willing to declare their programs of study for a variety of reasons (e.g., high school students taking college credits as joint enrollment) were identified as a group with no program of study.

As shown in Figure 8, college parallel programs had the largest group with 34,441 students, accounting for 41.4 percent of total enrollment, followed by the “no program of study” group (23,777 students, accounting for 28.6 percent) and CTE programs (23,240 students, accounting for 28.0 percent). This fall, 1,618 students enrolled in AGS programs (1.9 percent) and 33 students declared two or more different types of programs.

As compared to last year, the number of students with no program of study decreased 9.0 percent. The number of students in AGS programs and in CTE programs decreased 4.2 percent and 3.4 percent, respectively. The number of students enrolled in college parallel programs also decreased 5.6 percent.

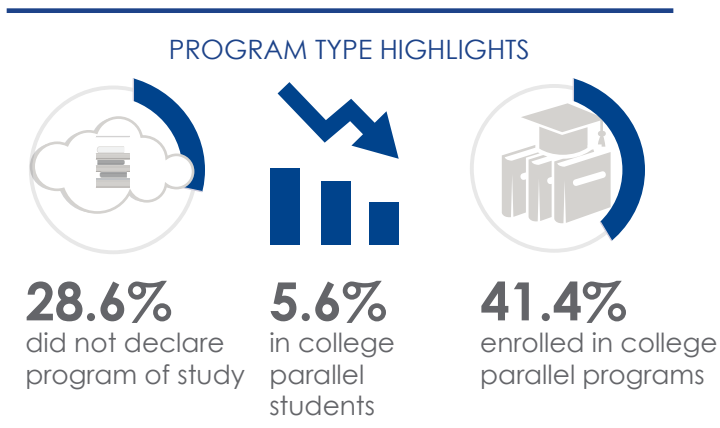
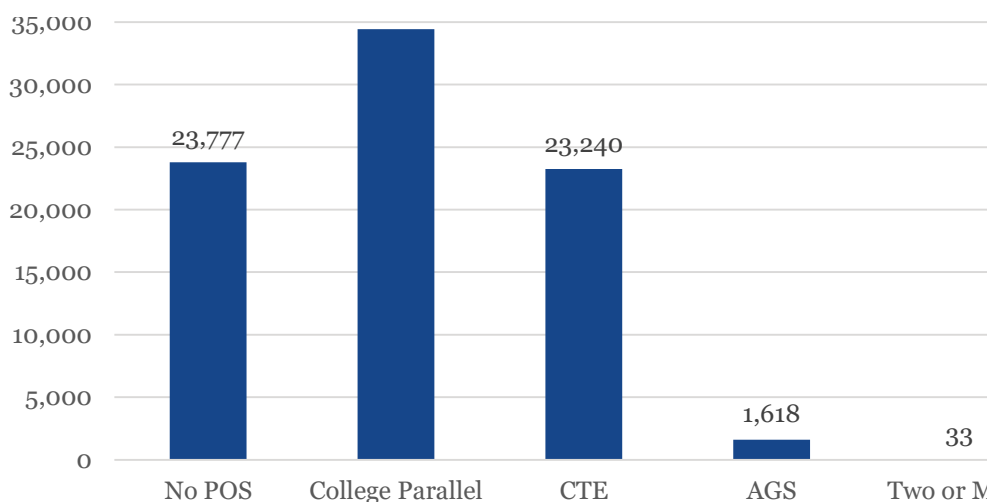


FIGURE 8: FALL 2020 ENROLLMENT BY PROGRAM TYPE



Note: No POS refers to students who were either ineligible or not willing to declare a program of study. Two or more refers to students who declared two or more different programs of study.

Transfer Major Programs

In December 2017, the Iowa Association of Community College Presidents unanimously approved an Iowa Department of Education proposal to establish an authorized process to permit community colleges to adopt transfer majors. This process has now been authorized through Iowa Administrative Code 281 21.3. These transfer majors are designed to guide students to take program-specific coursework within their associate of arts (AA) or associate of science (AS) studies that will transfer seamlessly into related majors at four-year institutions with the goal of:

- improving communication and transfer efficiency among institutions;
- providing students with a defined pathway toward their academic goals;
- supporting a more data-informed assessment/articulation process;
- avoiding excessive credits and decreasing time to degree completion and
- making postsecondary education more affordable, thus reducing student debt.

TRANSFER MAJOR HIGHLIGHTS

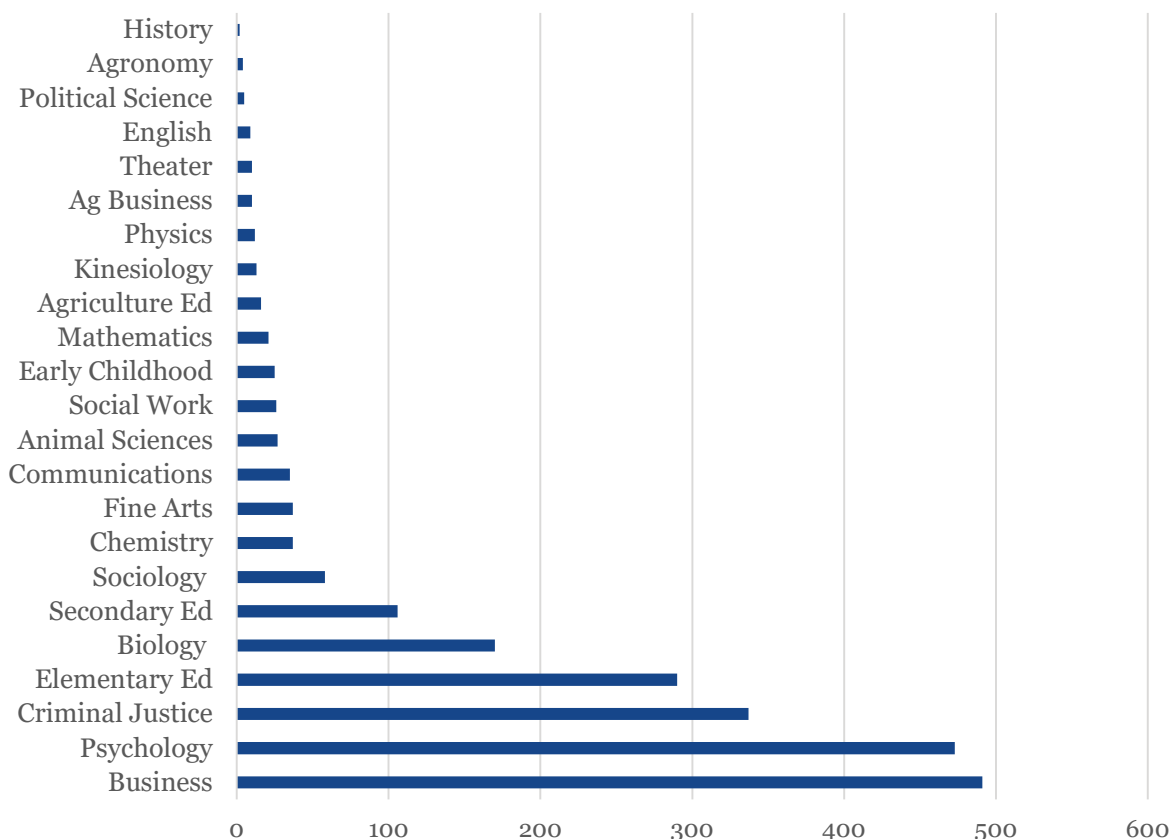


2,214
students enrolled
in transfer major
programs



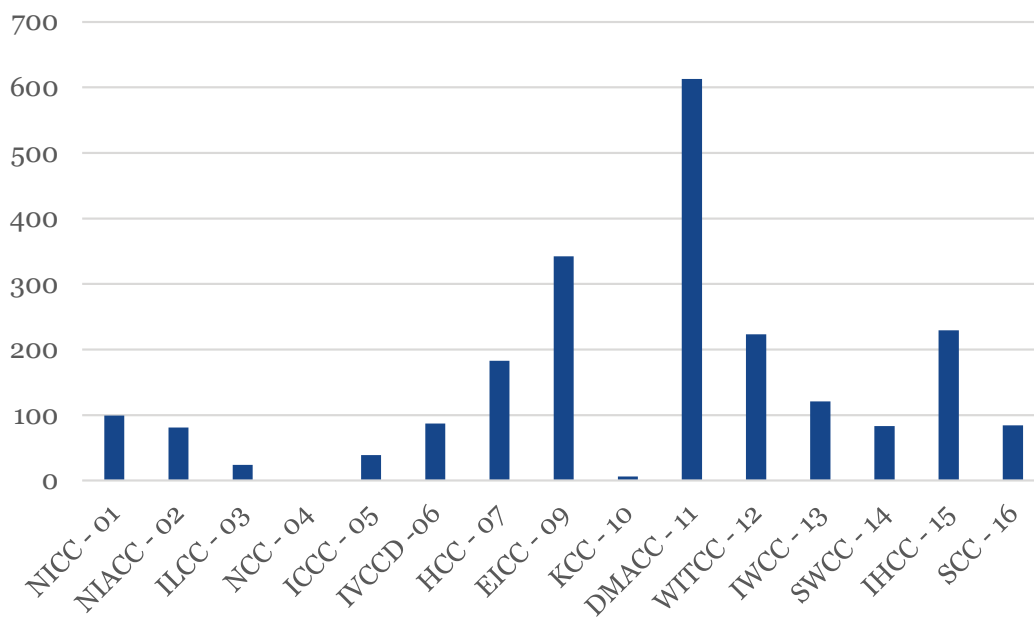
491
students in
Business

FIGURE 9: DISTRIBUTION OF TRANSFER MAJOR STUDENTS BY DISCIPLINE



In Fall 2020, there are 24 potential transfer major disciplines available to community college students depending on which colleges are offering them. In the fall 2020 enrollment data, there are 2,214 enrolled transfer major students across 23 of these disciplines (Figure 9) and across 14 colleges (Figure 10). The most popular transfer major disciplines for these students include: business with 491 enrollments (22.2%); psychology with 473 enrollments (21.4%); criminal justice with 337 enrollments (15.2%); elementary education with 290 enrollments (13.1%) and biology with 170 enrollments (7.7%). These four disciplines represent 79.5% of fall 2020 transfer major enrollments and were some of the first disciplines to be approved across the state, and thus have had the most time to become established at the colleges. In fall 2019, there were 249 transfer major enrollments across seven colleges and only four disciplines were approved and available at that time.

FIGURE 10: DISTRIBUTION OF TRANSFER MAJOR STUDENTS BY COLLEGE



Career Clusters

The Iowa Department of Education reports CTE programs by the 16 National Career Clusters Framework that aligns academic programs with occupational fields. Information on career clusters can be obtained from www.careerclusters.org.

Figure 11 displays the distribution of CTE enrollment by career clusters.

Historically, cluster categories with the largest enrollments have been health science; business, management and administration and manufacturing. This fall, the top three cluster categories with the largest enrollments are health science (7,876 students, and a 2.7 percent decrease from last fall); business, management and administration (2,463 students, and a 22.6 percent increase) and law, public safety and security (2,229 students, a 13.4 percent increase). Unusually high increases in the science, technology, engineering and mathematics (STEM, 422.5 percent) and education and training (374.6 percent) career clusters are explained by the introduction of transfer majors which predominantly fall into these two clusters.

THREE LARGEST CAREER CLUSTERS



7,876
students in
health science

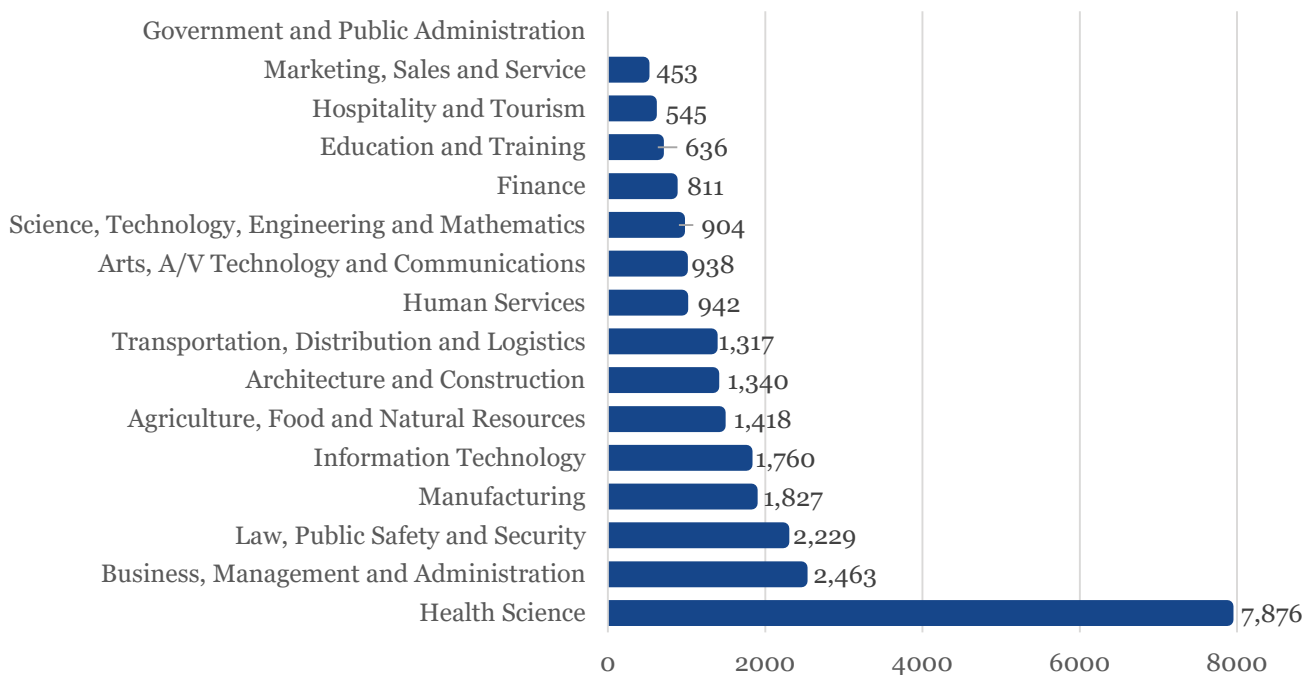


2,463
students in
business



2,229
students in law,
public safety
and security

FIGURE 11: FALL 2020 CTE ENROLLMENT BY CAREER CLUSTER



Online Enrollment

Online enrollment at Iowa’s community colleges is broken down into two categories: online classes and blended classes. An online class is defined as instruction delivered completely on the internet. In a blended class, at least half of the instruction is delivered via the internet and the remainder of the class is delivered in a face-to-face context.

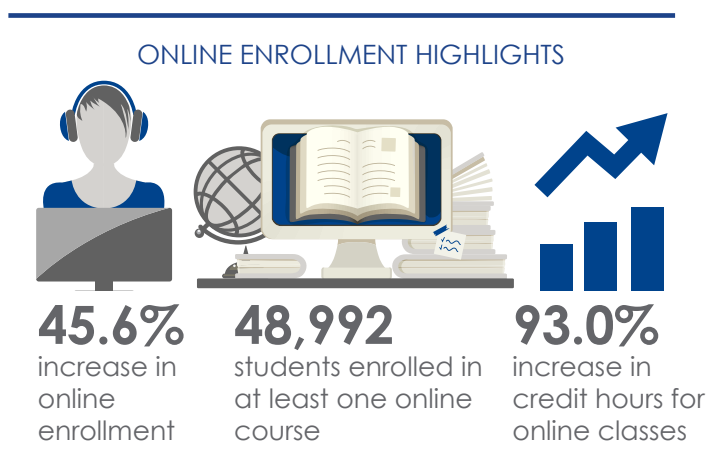


Table 3 summarizes the number of students enrolled in online and blended classes, and credit hours attributed to online and blended classes. Although COVID-19 negatively impacted the total enrollment for fall 2020, it increased this fall’s online enrollment: in fall 2020, 48,992 students enrolled in at least one online course (a 45.6 percent increase from last year) and 16,811 students enrolled in at least one blended course (a 155.3 percent increase from last year). Online course students registered for 328,603 credit hours. Compared to 170,241 credit hours last fall, this volume represents a 93.0 percent increase. This fall, students registered for 100,466 credit hours in blended classes, compared to 24,421 credit hours last fall, representing an increase of 311.4 percent.

TABLE 3: FALL 2020 ONLINE AND BLENDED COURSE ENROLLMENT BY COLLEGE

College	Online Course Enrollment			Blended Course Enrollment		
	Hours	Headcount	% Change Credit Hours	Hours	Headcount	% Change Credit Hours
Northeast Iowa	12,498	1,966	50.8%	3,262	790	104.1%
North Iowa Area	8,180	1,663	13.8%	1,095	326	114.0%
Iowa Lakes	10,248	1,287	95.2%	0	0.0%	-
Northwest Iowa	6,666	1,167	-0.3%	356	68	82.6%
Iowa Central	7,821	1,457	55.5%	18,493	2,202	347.7%
Iowa Valley	7,174	1,383	7.5%	2,051	484	27.2%
Hawkeye	9,534	1,987	18.6%	6,190	1,266	53.1%
Eastern Iowa	26,881	3,952	58.1%	4,956	770	258.1%
Kirkwood	57,600	8,868	160.1%	26,731	4,698	540.6%
Des Moines Area	122,695	15,248	226.5%	8,634	2,010	-
Western Iowa Tech	17,261	2,815	15.1%	2,899	879	1.4%
Iowa Western	23,071	3,774	52.1%	24,275	2,889	906.4%
Southwestern	4,965	948	12.5%	212	67	-28.9%
Indian Hills	5,577	1,158	0.9%	596	207	50.5%
Southeastern	8,433	1,319	34.8%	718	155	-10.9%
TOTAL	328,603	48,992	93.0%	100,466	16,811	311.4%

Joint Enrollment

Iowa community colleges offer joint enrollment opportunities to high school students. Such students may earn high school credit simultaneously with college credit, which is applicable toward a one- or two-year award or to transfer to a four-year institution. There are three ways in which joint enrollment is provided to Iowa students: postsecondary enrollment options (PSEO), contractual agreements between high schools and community colleges and direct payment of tuition. Students may choose to participate in more than one joint enrollment program during an academic year.

This fall, 34,450 high school students (unduplicated headcount) participated in at least one joint enrollment program, compared to 35,734 participants last fall, which represents a 3.6 percent decrease, compared to the 5.5 percent decrease indicated by nationwide data [1]. Students participating in joint enrollment programs accounted for 41.5 percent of total enrollment.

High school students participating in joint enrollment programs this fall registered for 176,626 credit hours of classes, compared to 182,521 credit hours last fall, which represents a 3.2 percent decrease. The number of credit hours attributed to joint enrollment programs this fall accounted for 25.9 percent of total registered credit hours, compared to 24.2 percent last fall. On average, students enrolled in 5.1 credit hours, which is consistent with last fall.

Distributed by type, 99.2 percent of high school students participated in joint enrollment through contractual agreements (Figure 12), 0.8 percent through direct payment of tuition and 17 through PSEO. Last year, contractual agreement, direct payment of tuition and PSEO comprised 99.4 percent, 0.5 percent and 0.1 percent of total joint enrollment, respectively. The decline in PSEO enrollments is expected, as the rules for types of joint enrollment changed as of academic year 2017-2018 [5].

JOINT ENROLLMENT HIGHLIGHTS

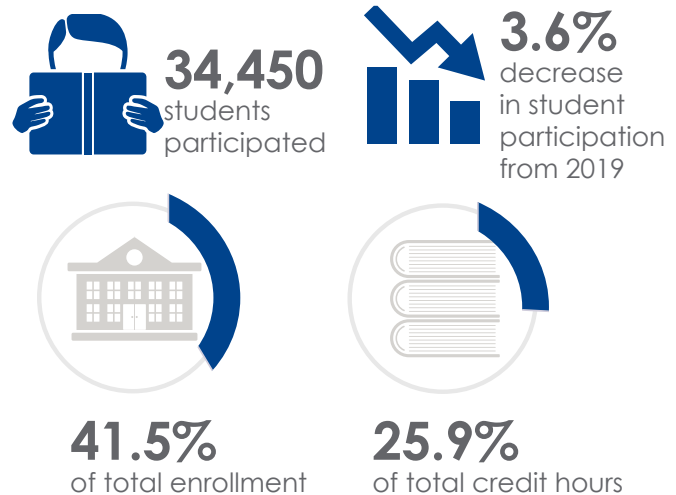
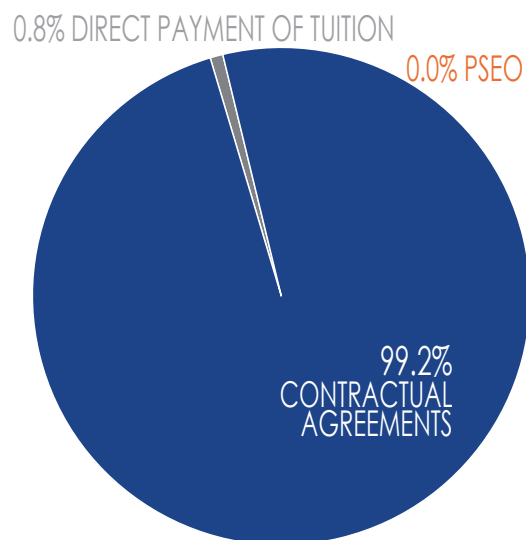


FIGURE 12: FALL 2020 JOINT ENROLLMENT BY OPTIONS



Immediate Enrollment

Every fall, Iowa community colleges enroll a large number of new non-high school students. This fall, they comprised 22.2 percent of total enrollment, with 37.7 percent of them having previous joint enrolled experience. A sizable portion of the first-time, non-high school community college population is comprised of students directly out of high school. According to annually stable patterns, this cohort of “immediate enrollees” comprises one-quarter to one-third of all Iowa high school graduating classes, and around one-tenth of Iowa community colleges’ total fall enrollment. COVID-19 did not seem to impact the stability of those proportions, contrary to the nationwide numbers for community colleges where declines in enrollments of new students outpaced overall enrollment decline (9.4 percent) more than two times (22.7 percent) [1].

This fall, a state identification number has been used to match Iowa high school students to community college enrollees. The matching procedure identified 8,174 students who entered Iowa community colleges directly after graduating from their Iowa high schools. Those immediate enrollees made up 9.8 percent of the total fall enrollment at Iowa’s community colleges. Distributed by community college, they represent a range of 5.9 percent to 14.9 percent of the total fall enrollment (Figure 13).

Over 62.0 percent of immediate enrollees (5,068) took some college-level courses through joint enrollment opportunities while in an Iowa high school. Distributed by college, those percentages range from 34.9 to 85.4 (Figure 14).

IMMEDIATE ENROLLMENT HIGHLIGHTS



22.2%

of all students
are new this
fall



9.8%

of new fall
students are
immediate
enrollees



62.0%

of immediate
enrollees had
JE experience



FIGURE 13: FALL 2020 SHARE OF IMMEDIATE ENROLLEES IN IOWA COMMUNITY COLLEGES

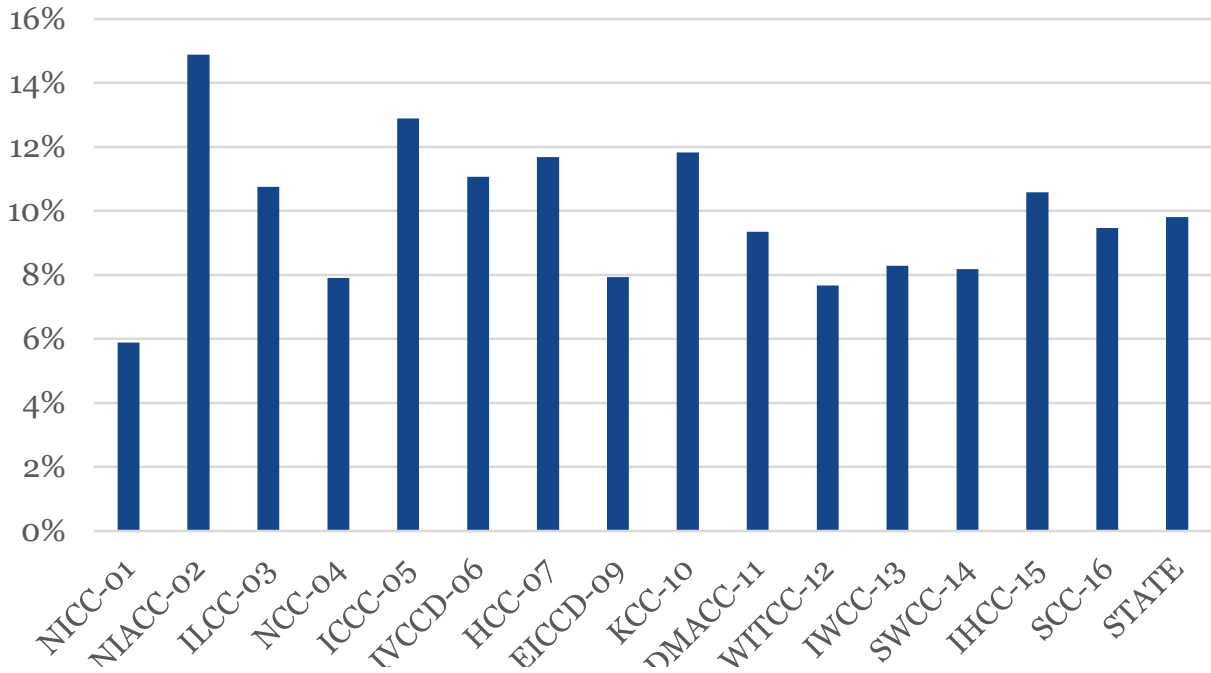
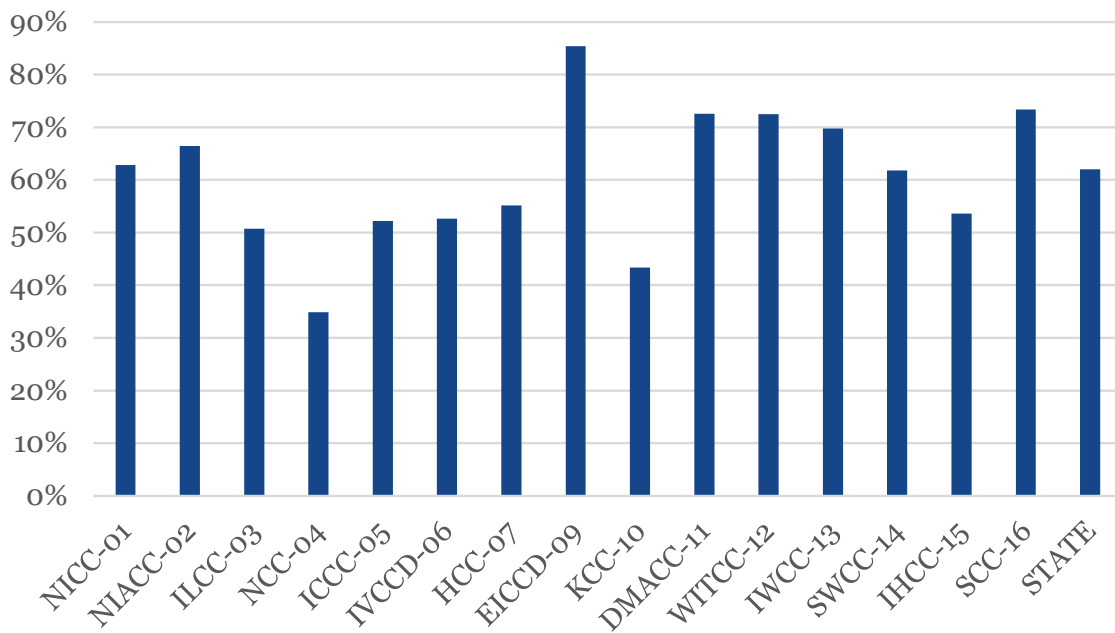


FIGURE 14: PERCENT OF IMMEDIATE ENROLLEES WITH PRIOR JOINT ENROLLMENT EXPERIENCE BY COMMUNITY COLLEGE



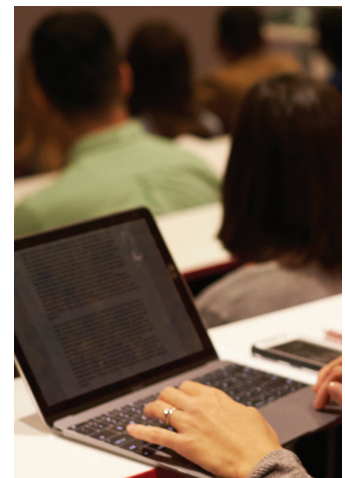
Enrollment Projections

There are two quantitative forecasting methods that are often used for enrollment projections: causal forecasting methods and time series methods. Causal forecasting methods are based on the assumption that the variable being forecasted is under the influence of one or more other variables [6]. Time series models assume that all information needed for forecasting is contained in data observed over successive periods of time, and that past data patterns (i.e., trend, seasonal, cyclical) have an effect on future data [6].

In terms of community college enrollment, the causal forecasting method assumes that enrollment in any given year is under the influence of other relevant factors. Such factors may include, but are not limited to, the distribution of demographics and economy in that year. Therefore, in order to estimate fall 2021 community college enrollment with causal forecasting methods, obtaining information regarding the distribution of demographics and the economy in 2021 is a prerequisite; however, such information is unknown for 2021.

Given that Iowa's community college enrollment data is available back to the 1960s, and that information on other relevant factors is unknown for 2021, time series methods are more appropriate for fall 2021 enrollment forecasting.

We used a single exponential smoothing equation, $\hat{y}_{t+1} = \partial y_t + (1-\partial)\hat{y}_t$, with time series methods to estimate fall 2021 enrollment. According to this equation, the value of y at time $t+1$ (i.e., \hat{y}_{t+1}) is a weighted combination of the observed value at time t (i.e., y_t) and the forecasted value at time t (i.e., \hat{y}_t), and the value of ∂ is the smoothing constant, which ranges from 0 to 1 [7]. Selecting the smoothing constant can be subjective or objective. If the value of a smoothing constant is near one, the forecasting puts more weights on the most recent observations, and the value of a smoothing constant near zero assumes that the distant past observations have a large influence. Considering the COVID-19 outbreak, we chose constant values close to one to forecast fall 2021 enrollment. We estimate that the total enrollment for fall 2021 will fall between 83,376 and 85,548 students; however, the actual enrollment for fall 2021 might fall out of this estimated range due to the uncertainty of COVID-19.



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- [4] U.S. Bureau of Labor Statistics. Retrieved from <https://data.bls.gov/timeseries/LASST1900000000000003> on November 6, 2020.
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COMMUNITY COLLEGES & WORKFORCE PREPARATION

PROSPERITY THROUGH EDUCATION

The Division of Community Colleges and Workforce Preparation within the Iowa Department of Education administers a variety of diverse programs that enhance Iowa's educational system and lead to a skilled and knowledgeable workforce. Divided between two bureaus — the Bureau of Community Colleges and the Bureau of Career and Technical Education — the Division is committed to providing and supporting opportunities for lifelong learning. In addition to working with the 15 Iowa public community colleges on state accreditation, program approval, and data reporting, guidance is also provided in the areas of career and technical education, workforce training and economic development, adult education and literacy, military education, the state mandated OWI education program, the GAP Tuition program, Senior Year PLUS, the National Crosswalk Service Center, and the Statewide Intermediary Network for Academic Career and Employment (PACE) program.