

Iowa Community College Employment Outcomes

Noncredit Career and Technical Education (CTE)

Academic Year 2019-2020

Released 2022



COMMUNITY COLLEGES &
WORKFORCE PREPARATION

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Iowa Community Colleges Employment Outcomes: Noncredit Career and Technical Education (CTE) Programs

A statewide overview of education and employment outcomes of individuals enrolled in community college noncredit programs.

Prepared by

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Noncredit Outcomes

Iowa Community College Noncredit Career and Technical Education (CTE) Programs
Academic Year 2019/2020

Programs Benefit Individuals, Employers and the State

The noncredit career and technical education (CTE) programs offered by Iowa's 15 community colleges provide targeted pathways that expedite the attainment of marketplace skills that benefit individuals, employers and the state.

These market-driven programs are highly responsive to regional workforce needs. They provide a starting point for individuals to acquire skills needed for high-demand job opportunities as well as satisfy continuing education units (CEUs) required of certain occupations. These programs also offer continuing education for individuals to stay current in their jobs, meet local employer needs with custom job training designed for workplace preparation and provide a pathway to further postsecondary education.

Student Demographics

As compared to credit-bearing students, noncredit CTE students at Iowa community colleges tend to be male, older and more racially diverse.



55.2% of noncredit CTE students were male compared to **43.2%** of credit students.



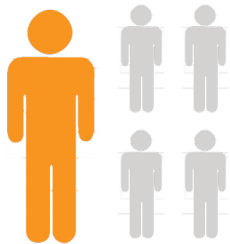
67.8% of noncredit CTE students were 25 years or older compared to **41.9%** of credit students.



30.1% of noncredit students were of a racial or ethnic minority group compared to **24.2%** of credit students.

Continue Education

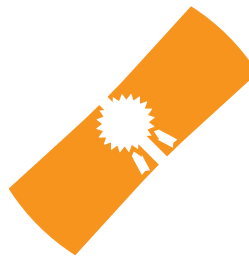
Noncredit CTE programs often lead to enrollment in credit programs, support credit students on their educational journey and help degree holders build and enhance current marketplace skills.



18.8% of noncredit students continue into credit-bearing programs.



Of those who continue into credit programs **83.7%** did so at an Iowa college or university.



3.6% of noncredit students hold previously earned postsecondary degrees.

Top 10 Noncredit Programs

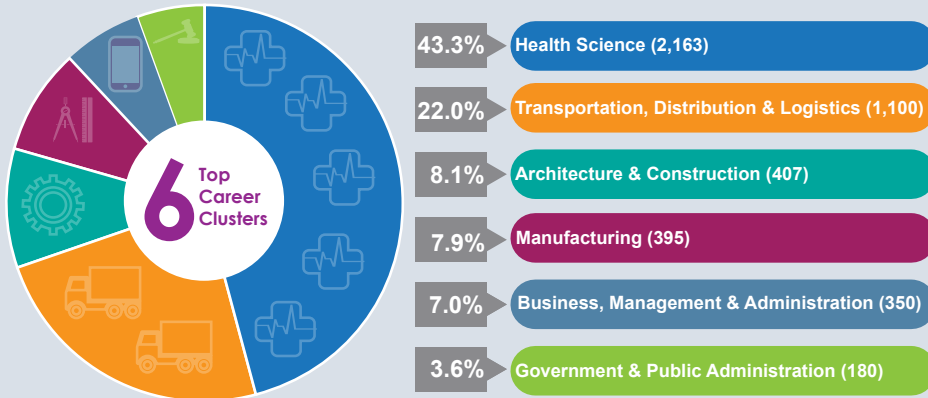


Health care and transportation programs comprised the highest noncredit CTE enrollments at Iowa community colleges in AY 2018/2019.



Top Career Clusters

The National Career Clusters Framework organizes CTE programs into 16 career clusters. The top career clusters by noncredit enrollment are health science and transportation, distribution and logistics.



Top Industries for Employment



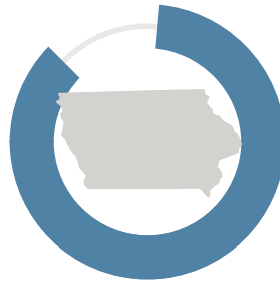
Of the noncredit students employed the year following program exit, over 72 percent work in the following top six industries:

Employment

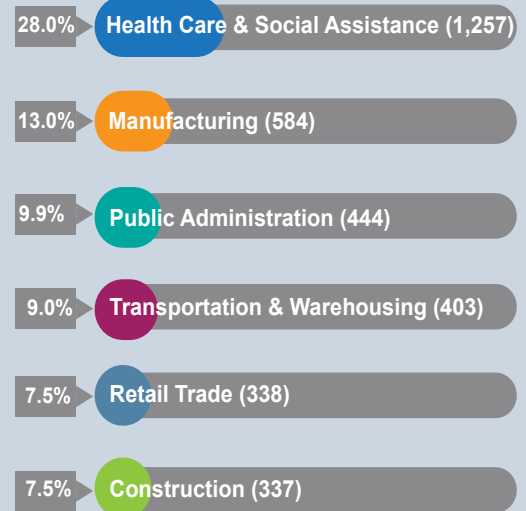
The majority of students in noncredit CTE programs stay in Iowa and are employed the first year following exit from their programs.



91.1% of noncredit students were employed in the first year following exit from their programs.



83.8% of noncredit students were employed in the state of Iowa.



Earnings

Earnings in the first year following program completion vary based on a variety of factors, including the number of contact hours required by the program, employer demand and whether or not the programs were for continuing education credits. The following examples provide median annual wages for in-demand occupations by number of required contact hours.

Automotive Mechanic

\$67,416



32 to 99 Contact Hours

Industrial Maintenance Mechanic

\$56,668



100 to 200 Contact Hours

Machine Tool Technology

\$48,172



200+ Contact Hours

Read the full report and access the interactive dashboard:

Iowa Community Colleges Employment Outcomes: Noncredit Career and Technical Education Programs



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Introduction

Iowa's Community Colleges: Noncredit Career and Technical Education (CTE) Employment Outcomes Report, is a statewide analysis on the outcomes of students enrolled in community college noncredit programs. Additional data tables at the institutional level are also provided to colleges for administrators and policymakers to use as they engage in planning and program approval. According to the Community College Research Center (CCRC):

“Substantive information is needed on outcomes to assess fully the contributions of noncredit workforce education to students, employers and the community...it is crucial to document the value of noncredit workforce education for individuals and to determine which recorded outcomes have the most value for individuals in different occupations, industries and labor markets,”[1] (pg. 4, CCRC, 2008).

In this report, employment and wages are analyzed to illustrate the important impact that the noncredit education and training provided by Iowa's community colleges has on the state's economy. Following students on the individual level is the preferred method of reporting education outcomes by program. Confidentiality laws, however, restrict the ability to link individual student records to employment and wages for most researchers. In addition, educational records and employment records are held in two different state agencies, the Iowa Department of Education (Department) and the Iowa Workforce Development (IWD).

The Department and IWD have overcome this hurdle by forming a partnership dedicated to evaluating and reporting education outcomes (i.e., continued education, employment and wages) for community college credit certificate, diploma and associate degree awards, as well as noncredit programs through strict data sharing agreements and confidentiality agreements.

NONCREDIT CTE PROGRAMS

Noncredit CTE programs offered by Iowa's 15 community colleges are market-driven programs that are highly responsive to regional workforce needs. These programs expedite the attainment of marketplace skills, equipping individuals to enter the labor market and secure gainful employment.



DATA ANALYSIS

Noncredit CTE programs were analyzed separately, by Classification of Instructional Program (CIP), in order to assess the benefits of each. To ensure a uniform approach to research, only programs consisting of 32 or more contact hours were analyzed, which is comparable to two credit hours and is the equivalent of the shortest credit certificate program in Iowa that has proven labor market value.

AGENCY PARTNERSHIP

The Iowa Department of Education and Iowa Workforce Development partnered to evaluate and report education, employment, and wage outcomes for individuals in noncredit CTE community college programs. This partnership has allowed for data sharing through agreements that adhere to all Unemployment Insurance (UI) and Family Educational Rights and Privacy Act (FERPA) regulations and rules. Research objectives are clearly stated in the agreements and limited staff have access. In addition, staff from both agencies signed confidentiality agreements pertaining to the reporting and use of student records.

[1] Van Noy, M., Jacobs, J., Korey, S., Bailey, T. & Hughes, K. L. (2008, March). *The Landscape of Noncredit Workforce Education: State Policies and Community College Practices*, CCRC Brief Number 38. NY, NY: Community College Research Center.

Iowa's CTE Programs

A study published by the American Association of Community Colleges (AACC) [3] indicates that the following overarching issues affect community college noncredit workforce education:

1. the extent to which noncredit workforce education and state policies play a role in workforce development, provide disadvantaged groups with access to higher education and generate revenue for colleges;
2. how colleges organize their noncredit workforce programs to balance the tradeoffs between the desired flexibility of noncredit education and the integration of credit and noncredit programs; and
3. the extent to which noncredit workforce education provides recorded outcomes for students, such as transcripts or industry certifications, and the extent to which outcome data are available.

Iowa community colleges offer both credit-bearing and noncredit CTE programs throughout the state. Programs vary based on the demand for particular skill sets identified through sector boards, employer relationships and local labor market data. In some portions of the state, noncredit enrollment represents the highest percentage of all CTE enrollment. Figure 1, on the following page, illustrates the percentage of noncredit enrollments (including those less than 32 contact hours) as it relates to total credit and noncredit CTE enrollment by college.

RESEARCH HIGHLIGHTS

Noncredit CTE Enrollment

Of the 145,814 noncredit program enrollments at Iowa's community colleges during AY 2019/2020, over half (51.7 percent), or 75,389, were in noncredit career and technical education programs.

[3] Van Noy, M., Jacobs, J., Korey, S., Bailey, T. & Hughes, K. L. (2008). *Noncredit Enrollment in Workforce Education: State Policies and Community College Practices*.

**FIGURE 1. PERCENTAGE OF NONCREDIT CTE ENROLLMENT TO TOTAL CTE ENROLLMENT
(TOTAL OF ALL CREDIT AND NONCREDIT AY 2019-2020)**

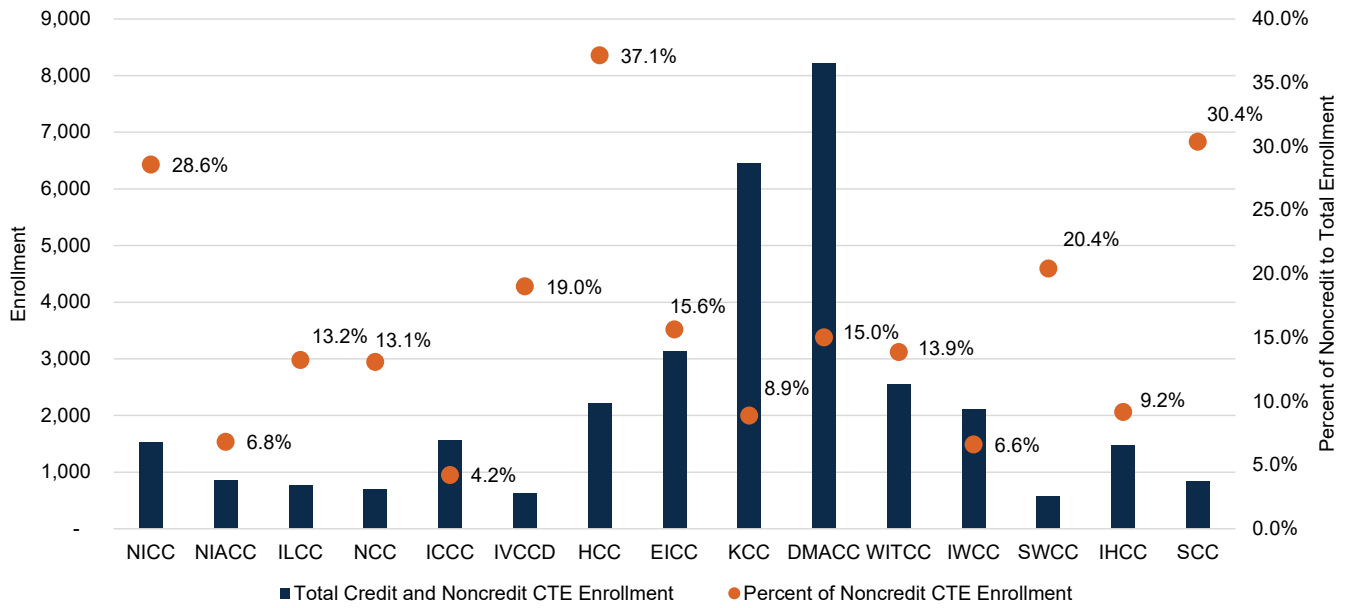


Figure 1 Abbreviation Key:

- NICC - Northeast Iowa Community College
- NIACC - North Iowa Area Community College
- ILCC - Iowa Lakes Community College
- NCC - Northwest Community College
- ICCC - Iowa Central Community College
- IVCCD - Iowa Valley Community College District
- HCC - Hawkeye Community College
- EICC - Eastern Iowa Community Colleges
- KCC - Kirkwood Community College
- DMAcc - Des Moines Area Community College
- WITCC - Western Iowa Tech Community College
- IWCC - Iowa Western Community College
- SWCC - Southwestern Community College
- IHCC - Indian Hills Community College
- SCC - Southeastern Community College

Overview of the Research

Noncredit coursework/programs are in high demand in Iowa, yielding 145,814 enrollments in the 2019-2020 academic year (AY 2019-2020). Of those, there were 75,389 noncredit Career and Technical Education (CTE) enrollments (51.7 percent).

For data consistency, it was necessary to establish criteria to define noncredit programs [4]. Thirty-two (32) contact hours was determined to be comparable to two credits, which is the equivalent of the shortest credit certificate program in Iowa that has proven labor market value. Additionally, programs are grouped by those containing 32 to 99, 100 to 200, and more than 200 contact hours to further distinguish among programs and their impact on the workforce. All data were extracted from the Management Information System (MIS) based on these criteria.

Compared to credit enrollment, noncredit students are more likely to be enrolled in multiple programs and less likely to provide personal identification such as social security number (SSN), race/ethnicity, or date of birth. Therefore, prior to following the students into the workforce and further education, students without SSNs and/or birthdates were excluded from the analysis due to matching restrictions. Matching to Unemployment Insurance (UI) wage records is conducted using SSNs, and birthdates are needed to match to the National Student Clearinghouse (NSC). This process limited the analysis to 4,996 students who completed noncredit CTE programs with at least 32 contact hours in AY 2019-2020.

Once extracted, data were sent to the NSC to identify students who enrolled in credit-bearing programs after their noncredit CTE programs at the community college. These individuals may have transferred from one community college to another, continued their education at their current locations, or transferred to four-year institutions. Transfer students were analyzed by college type (two- or four-year, and private or public) and by transfer location, allowing for the study of graduate out-migration (leaving Iowa).

Next, data were sent via secure file transfer to IWD to match the records to the UI wage records. This match provided employment, wage, and industry data by quarter using the following timeframes:

- » Quarter 1: January 1 to March 31
- » Quarter 2: April 1 to June 30
- » Quarter 3: July 1 to September 30
- » Quarter 4: October 1 to December 31

Four different cohorts (AY 2015-2016, AY 2016-2017, AY 2017-2018, AY 2018-2019 and AY 2019-2020) were analyzed in this report:

Year Prior to Enrollment in Noncredit - The four full quarters prior to the quarter in which the individual started his or her earliest noncredit course.

During Enrollment in Noncredit - All quarters, including and between the quarter in which the individual started his or her earliest noncredit course and exited his or her latest noncredit course.

Year Following Enrollment in Noncredit - The four full quarters following the quarter in which the individual exited his or her last noncredit course.

Due to the confidentiality of the wage record data, IWD processed the records and returned aggregate data for the Department to analyze and use in this report. Data was thoroughly scrutinized to maintain confidentiality and all rules, regulations, and restrictions for each of the data sources was strictly followed. Additionally, data-sharing agreements have gone through comprehensive legal review.

[4] Iowa Department of Education, Division of Community Colleges and Workforce Preparation, Methodology and Research Limitations, Data Field Formation, Program of Study (POS).

Demographics of Noncredit CTE Students

This annual report contains four cohorts of data with the intention to longitudinally study students from AY 2015-2016 forward. Of the 42,943 noncredit CTE students in aggregate studied, over half (56.5 percent) were male (N=23,566) and 18,145 were female. Additionally, there was a small number of students who did not indicate gender (N=1,232).

The students were divided into two age groups, under 25 years of age and 25 years or older. Nearly two-thirds (65.1 percent) of noncredit students studied were age 25 years or older (N=27,160) and 15,295 were under the age of 25.

Race/ethnicity was also identified; however, a significant number of students (N=16,863) did not report race/ethnicity. Of the 26,080 who did report, 72.8 percent were white/non-Hispanic (N=18,976), and 27.2 percent (7,104) were minority students.

FIGURE 2. AGE GROUPS BY GENDER

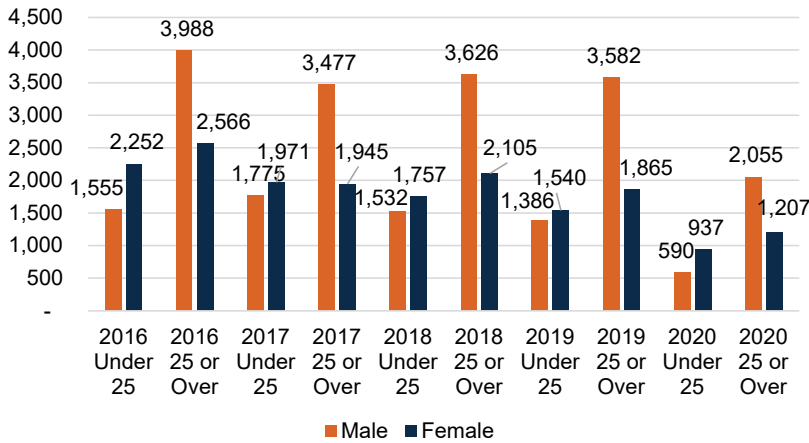
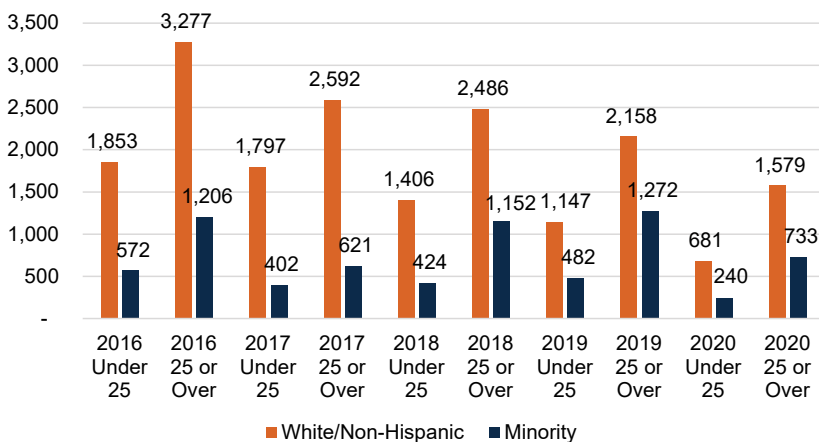


FIGURE 3. AGE GROUPS BY RACE/ETHNICITY



DEMOGRAPHICS

Overall, the majority of community college noncredit CTE students were 25 years of age and older, white/non-Hispanic and male.



AGE

- » 65.1 percent of students were 25 years of age and older.
- » 70.2 percent of all students who self-identified as being a minority were 25 years of age and older.



GENDER

- » 56.5 percent of students who indicated their gender were male.



RACE/ETHNICITY

- » 27.2 percent of students who indicated their race/ethnicity identified themselves as being minorities.

Noncredit CTE Programs by Gender and Age

Classification of Instructional Program (CIP) codes reported through the MIS are six digits in length and used to categorize programs. These codes, for purposes of simplicity, have been aggregated to the first two digits (series), which represents the overarching program title.

Table 1 illustrates the noncredit CTE programs by two-digit CIP, with the number of students in each, reported by gender and age grouping for AY 2019-2020. The largest program by enrollment encompasses training in the Health Professions and Related (N=15,779), followed by Transportation and Materials Moving (N=9,635).

RESEARCH HIGHLIGHTS

High Program Enrollments

Of the 29,300 noncredit students (academic years 2016 to 2018), 42.2 percent were enrolled in health-related noncredit CTE programs, followed by 23.7 percent in noncredit CTE transportation and materials moving programs.

TABLE 1. NONCREDIT CTE PROGRAMS BY 2-DIGIT CIP GENDER & AGE

CIP Description	Under Age 25			Age 25 and Older			Total
	Male	Female	Unknown	Male	Female	Unknown	
Health Professions & Related	1,397	7,726	388	1,978	6,130	335	17,954
Transportation & Materials Moving	2,848	161	18	6,603	851	67	10,548
Business Management, Marketing & Related	150	192	10	1,177	1,524	59	3,112
Mechanics & Repairers, General	622	27	16	2,040	80	91	2,876
Engineering Technologies & Engineering Related	323	63	9	1,797	238	46	2,476
Precision Production Trades	552	63	20	1,304	189	36	2,164
Homeland Security, Law Enforcement, Firefighting & Related Protective Services	524	67	15	899	101	45	1,651
Construction Trades	279	18	1	438	22	13	771
Computer & Information Sciences & Support Services	42	10	-	210	108	21	391
Family & Consumer Sciences/Human Sciences	8	46	4	39	163	12	272
Education	5	27	2	68	133	1	236
Agriculture	25	3	3	59	12	14	116
Communications Technologies/Technicians & Support Services	9	17	-	28	37	-	91
Visual & Performing Arts	33	10	-	22	14	-	79
Foreign Languages, Literatures & Linguistics	1	8	2	17	47	-	75
Personal & Culinary Services	12	10	-	32	9	2	65
Parks, Recreation, Leisure & Fitness Studies	6	5	-	9	7	-	27
Communication, Journalism & Related Programs	1	1	-	6	13	1	22
Legal Professions & Studies	1	1	-	2	8	-	12
Human Services	-	2	-	-	2	1	5
Total	6,838	8,457	488	16,728	9,688	744	42,943

Females dominate enrollment in the health profession programs (80.4 percent), whereas males represent 90.3 percent in the transportation-related CIPs. Interestingly, enrollment increased by more than 80 percent for females entering transportation programs when looking at those who are 25 years of age or over compared to those females under age 25 (N=161 to N=851).

RESEARCH HIGHLIGHTS

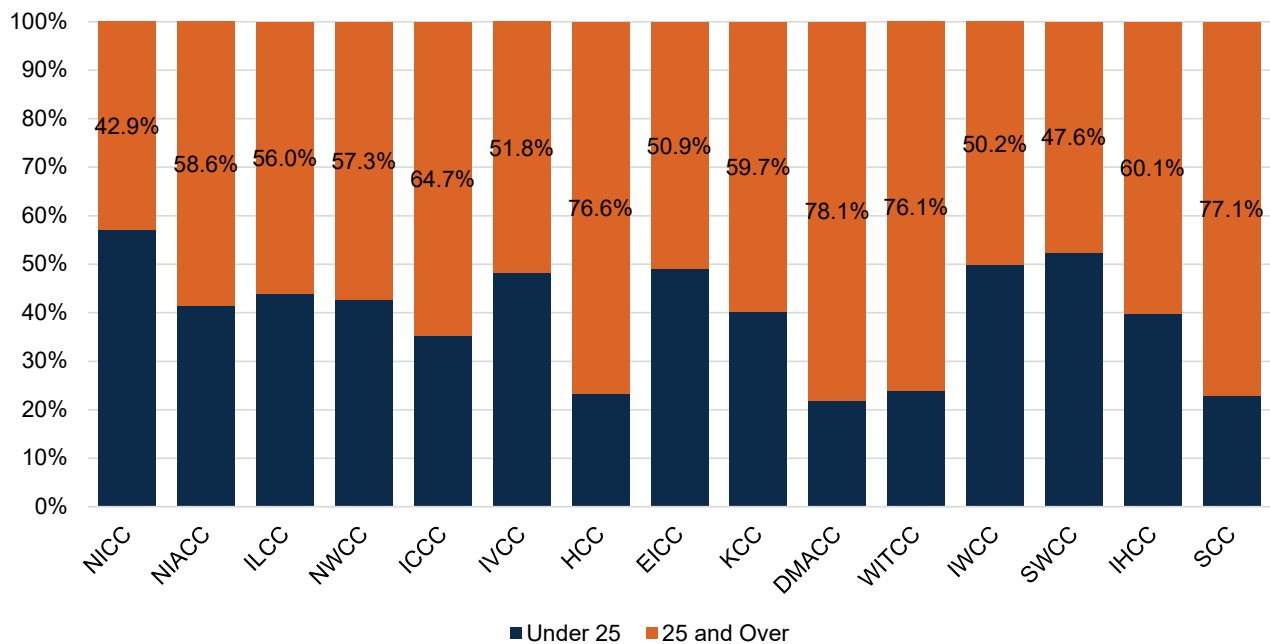
Number of Contact Hours

The majority of students, 63.1 percent, enroll in noncredit CTE programs that require between 32 to 99 hours to complete.

An additional point that is noteworthy is the difference in number of enrollments by program for the younger students versus older students. In previous years, higher numbers of students 25 or older enrolled in transportation, business management, mechanics/repair, and engineering technology programs, while more students under 25 enrolled in a variety of high demand occupations such as precision trades, transportation, construction, and law enforcement. This report reflects that the proportion of students was very similar with the exception of males in engineer technologies.

Figure 4 illustrates the proportion of noncredit students by age group for each college. In four colleges, over 70 percent of the students enrolled in noncredit programs were age 25 years or older. The distribution of age does not seem to be contingent on geography as there are both urban and rural colleges that enrolled high proportions of noncredit students over the age of 25.

FIGURE 4: PROPORTION OF NONCREDIT STUDENTS BY AGE GROUP AND BY COLLEGE



Note: College abbreviations are defined under Figure 1, Page 4.

Additional analysis was conducted to determine whether age played a role in relation to the length of the program in which the noncredit students enrolled. There was little difference in the percentage of enrollees when cross-tabulated by age (Figure 6). Nearly two-thirds (64.7 percent) of those under the age of 25 were enrolled in programs with 32 to 99 contact hours, 24.7 percent in 100 to 200 contact hours, and 10.5 percent in programs that were over 200 contact hours. Similarly, 62.0 percent of those 25 years of age or older enrolled in programs that were 32 to 99 contact hours, 23.1 percent enrolled in 100 to 200 contact hours, and 14.8 percent in programs that were over 200 contact hours in length.



TABLE 2. CONTACT HOURS BY AGE GROUP

Student Age Group	32 to 99 Contact Hours		100 to 200 Contact Hours		Over 200 Contact Hours	
	#	%	#	%	#	%
Under 25 Years of Age	10,191	64.7	3,897	24.7	1,660	10.5
25 Years of Age and Older	16,714	62.0	6,236	23.1	3,463	14.6
Total	27,076	63.0	10,173	23.7	5,694	13.3

Pursuing Credit-Bearing Education

Using the NSC database, the Department was able to identify whether noncredit students transferred to or continued at postsecondary institutions that were in- or out-of-state, two- or four-year, or private or public. Table 3 illustrates the distribution of students from the AY 2019-2020 cohort who enrolled in credit programs the first year following exit from their noncredit program (N=938). This distribution includes students who were enrolled in credit programs previously, during, and following their noncredit program enrollment.

The majority of students (66.7 percent) who continued their education were under age 25 (N=626). Most (83.7 percent) of this group went on to credit-bearing programs at an in-state institution (N=785), while only 16.3 percent (N=153) of students continued their education at out-of-state institutions.

Of those under age 25 who continued their education in-state, 376 (60.1 percent) continued their education at a two-year public college and 15.5 percent transferred to public four-year institutions.

RESEARCH HIGHLIGHTS

High Program Enrollment

Of the 42,687 noncredit students (academic years 2016 to 2020), 61.3 percent were enrolled in health-related noncredit CTE programs, followed by 36.0 percent in noncredit CTE transportation and materials moving programs.

RESEARCH HIGHLIGHTS

Number of Contact Hours

The majority of students, 63.0 percent, enroll in noncredit CTE programs that require between 32 to 99 hours to complete.

**TABLE 3. FURTHER CREDIT EDUCATION, FIRST YEAR FOLLOWING NONCREDIT EXIT:
AY 2020 COHORT**

Year Following Noncredit Program at Community College	Characteristics of Institution		Continued Education In-State		Continued Education Out-of-State	
	2yr/4yr	Public/Private	#	%	#	%
Under 25 Years of Age - AY 2020 Cohort						
2021	2 yr	Private	0	0.0	0	0.0
		Public	376	60.1	31	5.0
	4 yr	Private	68	10.9	21	3.4
		Public	97	15.5	33	5.3
Total 2020 Cohort Under 25			541	86.4	85	13.6
25 Years of Age and Older - AY 2020 Cohort						
2021	2 yr	Private	0	0.0	1	0.3
		Public	201	64.4	21	6.7
	4 yr	Private	27	8.7	31	9.9
		Public	16	5.1	15	4.8
Total 2020 Cohort 25 and Older			244	78.2	68	21.8

The out-of-state enrollment percentage, of students age 25 and over, is greater than that of students under age 25 with 21.8 percent of students continuing their education at out-of-state institutions in aggregate. However, when analyzing the in-state data for students 25 years of age or older, 244 (64.4 percent) continued their education at one of Iowa’s community colleges and only 5.1 percent transferred to a public four-year institution (Table 3). Overall, the majority of students from the academic year 2020 cohort (83.7 percent), continued their education in credit-bearing programs in Iowa.

RESEARCH HIGHLIGHTS

Credit-Bearing Programs

Of the students in academic year 2019-2020, less than one-fifth (18.8 percent) of all noncredit CTE students continued their education in credit-bearing programs.

Noncredit students fall into multiple categories when it comes to engagement with educational opportunities at Iowa’s community colleges. There are those who were enrolled in a credit program prior to enrollment in the noncredit program, those who enrolled in noncredit while in credit programs (concurrently) and those who continued their education by entering a credit program following their experience with a noncredit program.

There are many reasons for the variety of enrollment patterns when it comes to noncredit CTE. Some students attend a noncredit program for continuing education credits or to gain additional skills during enrollment in a credit program, while others enroll to prepare for employment in a specific field.

Figure 5 shows that in AY 2019-2020 there were 1,082 students enrolled in a credit program prior to enrollment in noncredit compared to AY 2018-2019 which had 1,888 students enrolled in a credit program the year prior to enrolling in their noncredit program. However, there were a few more students enrolled during their noncredit program in AY 2019-2020 (1,023 compared to 1,919), but a decline in those who enrolled the year following the completion of their noncredit program (938 compared to 1,710). There were 642 students enrolled in credit programs both preceding and following their noncredit enrollment in AY 2019-2020, however of those there were 96 students who were not enrolled in credit programs before yet enrolled in a credit program following completion, showing an decrease in new credit students of 53.8 percent over the prior year.

FIGURE 5. NUMBER OF NONCREDIT CTE STUDENTS ENROLLED IN CREDIT PROGRAMS

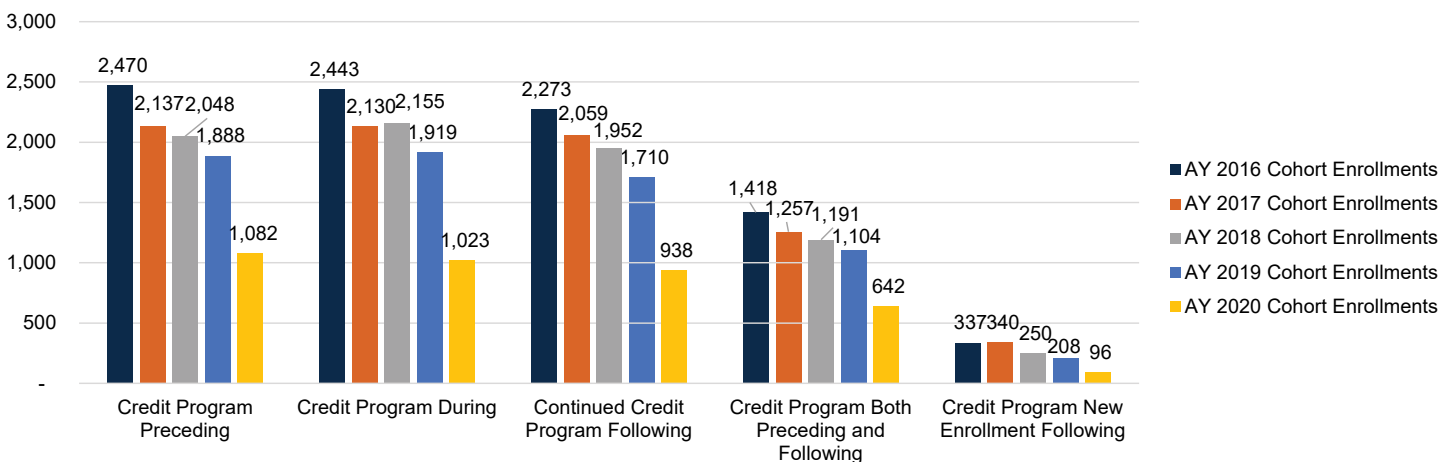
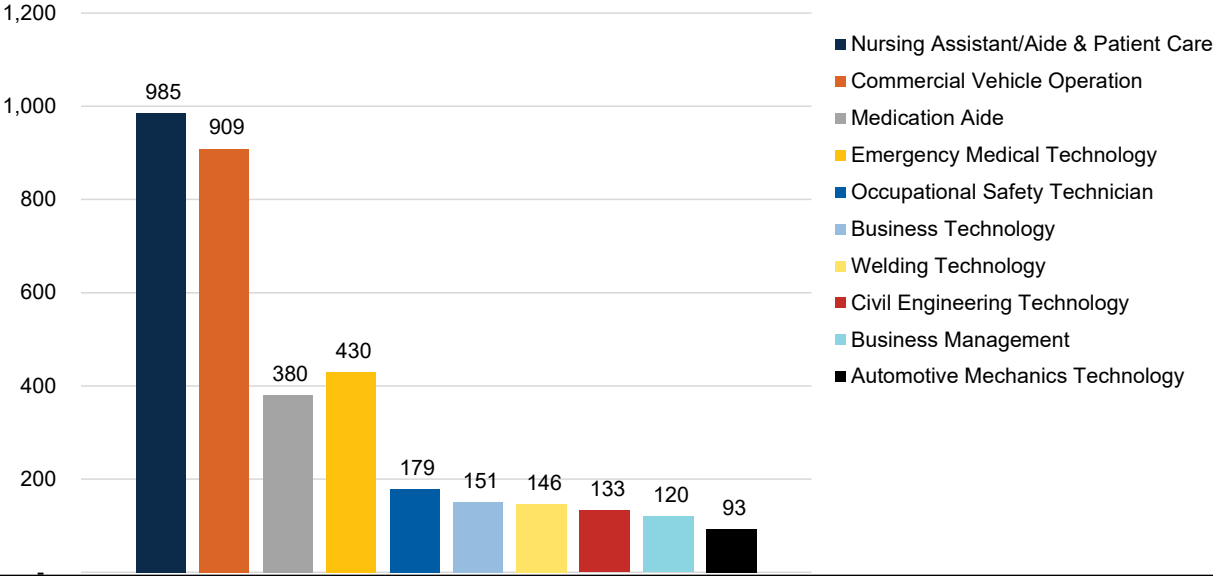


Figure 6 shows the top ten noncredit programs that this group of students completed before continuing on with their credit-bearing program. The majority (N=985) of noncredit students were enrolled in the Nursing Assistant/Aide program and 909 others in the commercial vehicle operation program.

FIGURE 6. TOP 10 NONCREDIT PROGRAMS COMPLETED BY THOSE WHO CONTINUED CREDIT-BEARING PROGRAMS, NOT PREVIOUSLY ENROLLED



Supplementary data were collected regarding previous credit-bearing education completed by noncredit students. Overall, there were 179 students in the AY 2019-2020 cohort who had previous awards/degrees. Of those students who had degrees, there were 83 (46.4 percent) who had a bachelor’s degree and 62 (34.6 percent) had a two-year degree, certificate or diploma.

Education Retention and Migration

The vast majority (83.7 percent) of noncredit students who enrolled in a credit-bearing program after exiting their noncredit program, remained in Iowa (N=785). Of those students who continued their education at an institution outside of Iowa, most enrolled in one of Iowa’s contiguous states such as Illinois (N=35) or Minnesota (N=15). For those who ventured farther away, the highest concentrations of migrating students enrolled at institutions in Indiana (N=11), Arizona (N=10), or Alabama (N=8) within one year after exiting their noncredit program.

RESEARCH HIGHLIGHTS

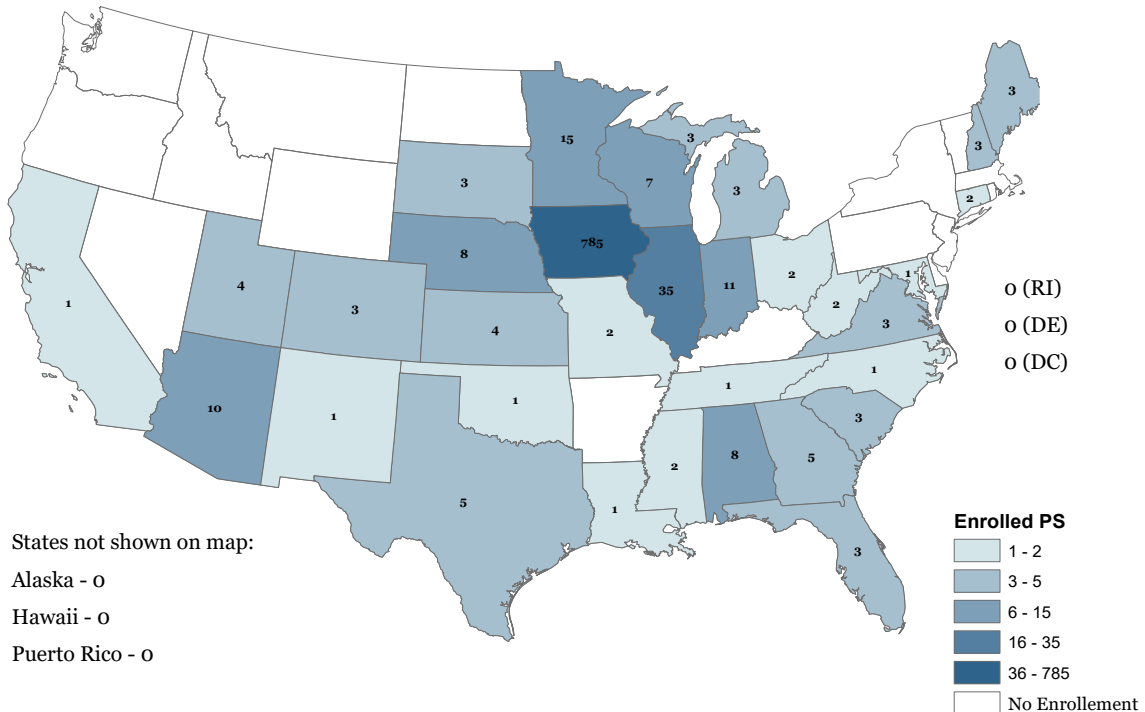
Continued Education in Iowa

Of the 785 noncredit students who continued into a credit-bearing program, 83.7 percent enrolled at an Iowa college or university.

Figure 7 represents aggregate numbers for those who continued their education either in- or out-of-state one year after exit (AY 2019-2020 only). When looking at migration patterns, whether it be students who transferred to an out-of-state college or sought employment outside of Iowa, percentages are relatively small. Those employed are studied in subsequent sections of this report.

Note: If students were enrolled in different colleges at the same time, we report the college based on hierarchy with preference to four-year institutions.

FIGURE 7. AY 2019-2020 COHORT EDUCATIONAL MIGRATION, FIRST YEAR FOLLOWING NONCREDIT PROGRAM EXIT



Workforce Cohort

When analyzing wage and employment data, it is important to note the restrictions and limitations of the Iowa UI and State Wage Interchange System (SWIS) data, as explained in the Methodology and Research Limitations section of this report. Three important factors that impact the data are: (1) the wage data only represents employees of companies that pay UI tax; (2) the number of hours worked are not reported within the data, making it impossible to identify part- versus full-time employment; and (3) data are not reported by occupation, only by industry. The unmatched records from both data sources encompass graduates who may be employed by employers that do not pay UI tax or those who were unemployed for the described periods of time.

RESEARCH HIGHLIGHTS

Employment and Wages

In the year following exit from a noncredit program, the percent of individuals who were employed increased by 12.4 percentage points and median wages increased 8.1 percent from the year prior to entry.

Some noncredit students were employed prior to, during or after enrolling in their programs. In order to measure the increase of employment percentage and overall wages, Figures 8 and 9 were created to illustrate the overall impact of noncredit training. Since students enter and complete noncredit programs at different times throughout the academic year, their wages were captured based on their college start and exit date independently, then aggregated relative to those dates.

The AY 2015-2016 cohort has a total of 90 students who were enrolled while incarcerated; in AY 2016-2017 there were an additional 45 students; in AY 2017-2018 there were 55 students; in 2018-2019 there were 141 students and in 2019-2020 there were 69 students. Therefore, all 400 students were removed for employment and wage calculations based on their inability to be gainfully employed during incarceration. Previously incarcerated students, once released, are analyzed for employment and recidivism outcomes annually and the report can be found at: <https://educateiowa.gov/sites/files/ed/documents/IowaEmploymentandRecidivismOutcomes2021.pdf>

Using the adjusted total of 4,927 students in the AY 2019-2020 cohort, a total of 3,877 (78.7 percent) matched employment in the year prior to enrollment in noncredit programs while 4,490 students (91.1 percent) matched employment in the year following exit. This represents a 12.4 percent percentage point increase in employment. Figure 8 illustrates these percentages of students who matched employment prior to, during and following enrollment in noncredit programs. Wage and employment data and accompanying tables for the AY 2015-2016 to 2019-2020 cohorts can be accessed on the Iowa Department of Education's website: <https://www.educateiowa.gov/iowa-community-college-program-outcomes>.

In order to compare and aggregate wages across the quarters being analyzed, a cost of living adjustment was applied to quarterly median wages and documented as the Adjusted Median Wage in Figure 9 (a detailed explanation is contained in the Methodology and Research Limitations section of this report). This adjustment is used to standardize wages in order to determine whether “real” wages have increased over the study period. The primary reason for utilizing the median quarterly wage for analysis (rather than mean) is that it mitigates the effects of outliers to provide a more accurate representation of the typical employee's wages.

Figure 9 provides wage data, by quarter, from the first year following completion of the cohort. The adjusted median quarterly wage increased from \$8,717 in the year prior to enrollment in noncredit CTE programs to \$9,421 in the year following exit for the AY 2019-2020 cohort, which represents an 8.1 percent increase in median wages. This data is reflective of the cohort in its entirety and will vary based on the program completed, which is studied further in the following pages.

FIGURE 8. OVERALL PERCENT MATCHED TO EMPLOYMENT: AY 2019-2020 COHORT

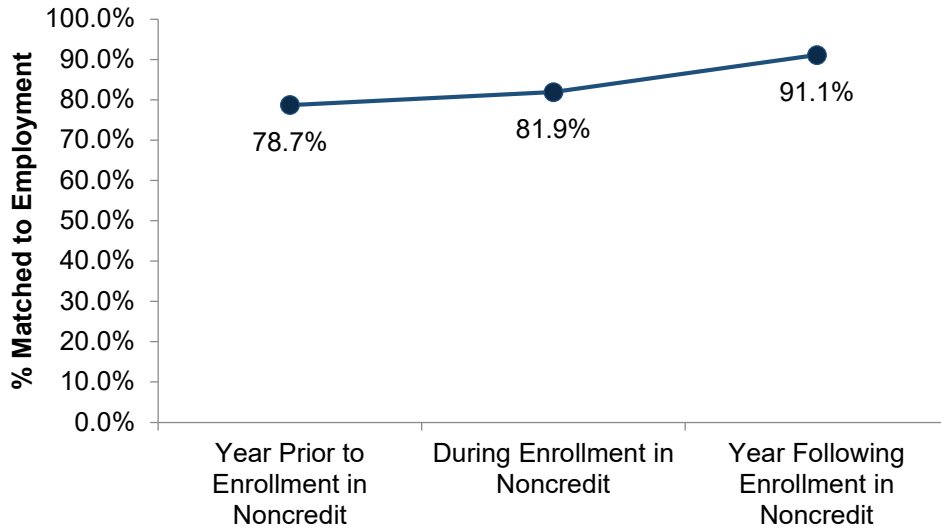
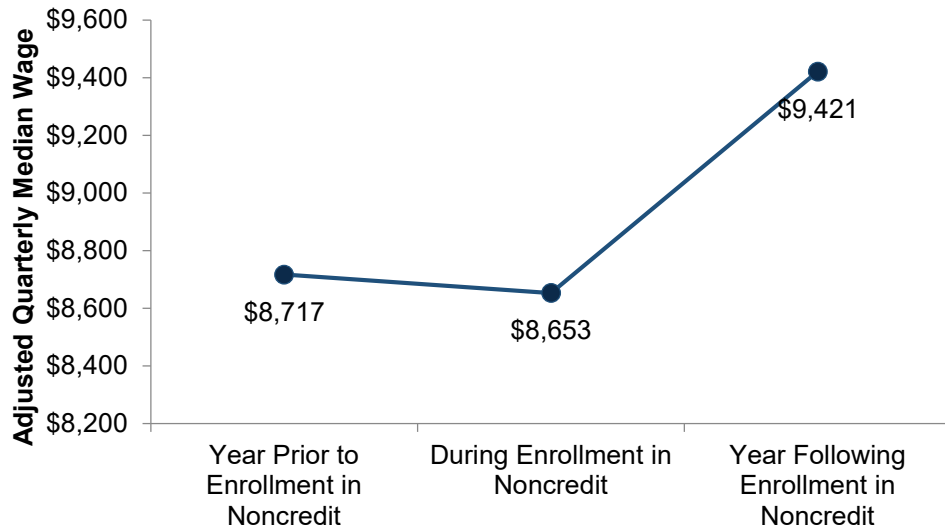


FIGURE 9. OVERALL ADJUSTED QUARTERLY MEDIAN WAGES: AY 2019-2020 COHORT



Employment and Wages by State

The SWIS was used to identify individuals who were employed out-of-state the year following exit from their noncredit program based on primary employment. Though the records do not identify hours worked (i.e., full- or part-time), overtime or occupation, they do identify the number of graduates working in other states.

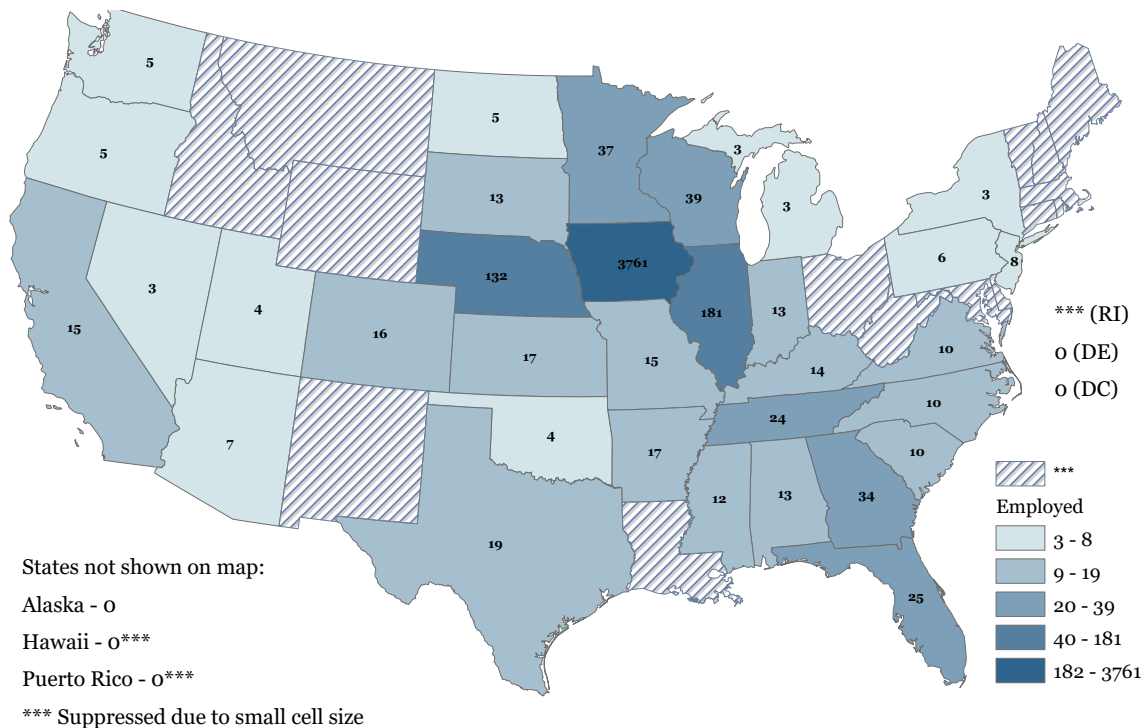
RESEARCH HIGHLIGHTS

Employment in Iowa

83.8 percent of individuals matched to employment records in the first year following exit from a noncredit program were employed in Iowa.

Figure 10 illustrates that the majority of those who exited a noncredit CTE program in AY 2019-2020 and matched to employment data in the first year following exit, remained in Iowa (83.8 percent). Similar to those who continued their education, most graduates who were employed outside of Iowa were employed in bordering states, such as Illinois, Nebraska and Minnesota. There were, however, notable numbers of students who were employed in Florida (N=28), Georgia (N=11) and Texas (N=11) the first year following exit.

FIGURE 10. PRIMARY EMPLOYMENT BY STATE, FIRST YEAR FOLLOWING COMPLETION: AY 2019-2020 COHORT



Employment and Wages by Age and Gender

Previously reported, there were more males enrolled in noncredit programs in Iowa community colleges than females. Similarly, of the students eligible for employment analysis that reported their gender in the AY 2019-2020 cohort, 54.9 percent identified as male (Figure 11).

Table 4 provides the employment and wages of AY 2019-2020 program exiters by age group and gender. Female students under 25 years of age matched employment at a higher rate (94.8 percent) than male students in the same age group (93.7 percent), but their adjusted quarterly median wage was much lower than that of the male students, (\$4,806 to \$9,021, respectively). Also noted in Table 4, 8.4 percent of males under 25 years of age held a previously earned degree.

When analyzing the gender disparity for the 25 years and older group, a smaller proportion of males held previous degrees (1.9 percent) than females (2.6 percent). However, the wage disparity between females and males still exists, with women earning \$5,895 per quarter less than males.

To do a more in-depth analysis of the gender wage gap among recent Iowa community college noncredit program exiters, other factors would need to be controlled, such as program and industry type. Industry of employment by gender data is available in Appendix A (data tables) and can be accessed through the Department’s website at: <https://www.educateiowa.gov/iowa-community-college-program-outcomes>.

FIGURE 11. PERCENT OF STUDENTS BY GENDER: AY 2019-2020 COHORT

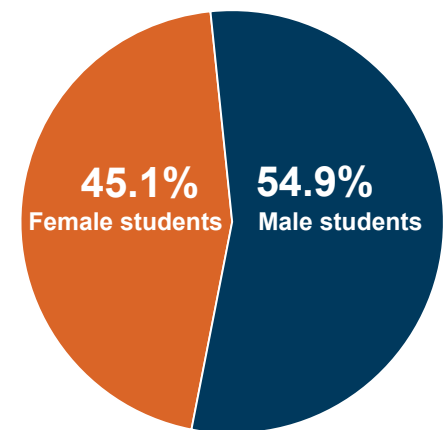


TABLE 4. EMPLOYMENT AND WAGES BY AGE & GENDER, FIRST YEAR FOLLOWING EXIT: AY 2019-2020 COHORT

Age	Gender	Number in Cohort	Previous Degree		Matched to Employment		Adjusted Quarterly Median Wage \$
			#	%	#	%	
Under 25	Female	937	52	5.5	888	94.8	\$4,806
Under 25	Male	584	49	8.4	547	93.7	\$9,021
Under 25	Unknown/Not Reported	78	6	7.7	69	88.5	\$6,067
25 and Over	Female	1,207	31	2.6	1,068	88.5	\$8,855
25 and Over	Male	2,029	38	1.9	1,837	90.5	\$14,750
25 and Over	Unknown/Not Reported	92	3	3.3	81	88.0	\$10,131

Note: 2020 wages defined as October 1, 2019, through September 30, 2020.

Employment and Wages by Age and Race/Ethnicity

Figure 12 shows the breakdown of those who identified their race/ethnicity for the AY 2019-2020 cohorts. Over two-thirds (69.9 percent) of the noncredit students identified themselves as white/non-Hispanic, while 30.1 percent identified themselves in a racial/ethnic minority category (an increase of 1.5 percentage points from AY 2018-2019). There were 1,716 students who did not report this data element and were excluded from Figure 12.

Table 5 probes into the data further by breaking out the employment and wages associated with these groups by age. As illustrated below, wages vary substantially for those students over the age of 25 when the race/ethnicity cross-tabulation is applied. The white/non-Hispanic group earned an adjusted quarterly median wage of \$14,645, whereas the racial/ethnic minority group had an adjusted quarterly median wage of \$8,922 per quarter (39.1 percent less). The disparity is smaller for the under 25 age group, but the white/non-Hispanic group (\$6,969) still has a higher quarterly median wage than those in the racial/ethnic minority group (\$5,501). Previous degrees held, for both age groups, were higher for white/non-Hispanic students than the racial/ethnic minority students, which could account for a portion of the wage disparity.

FIGURE 12. PERCENT OF ENROLLMENTS BY RACE/ETHNICITY: AY 2019-2020 COHORT

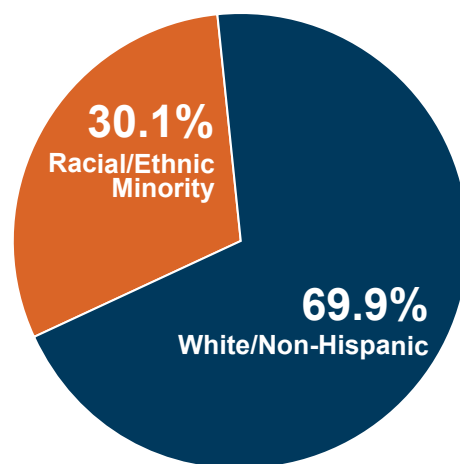


TABLE 5. EMPLOYMENT AND WAGES BY AGE AND RACE/ETHNICITY, FIRST YEAR FOLLOWING EXIT: AY 2019-2020 COHORT

Age	Race/Ethnicity	Number in Cohort	Previous Degree		Matched to Employment		Adjusted Quarterly Median Wage \$
			#	%	#	%	
Under 25	Racial/Ethnic Minority	238	11	4.6	218	91.6	\$5,501
Under 25	White/Non-Hispanic	678	60	8.8	649	95.7	\$6,969
Under 25	Unknown/Not Reported	683	36	5.3	637	93.3	\$5,262
25 and Over	Racial/Ethnic Minority	727	14	1.9	630	86.7	\$8,922
25 and Over	White/Non-Hispanic	1,568	40	2.6	1,451	95.7	\$14,645
25 and Over	Unknown/Not Reported	1,033	18	1.7	905	93.3	\$11,050

Employment and Wages by Industry Sector

Table 6 shows the number of students, percentage of employment and quarterly median wages by industry sector for the AY 2019-2020 cohort in the first quarter prior to entry and the first quarter after completion of a noncredit CTE program. The industry sectors displayed are based on the North American Industry Classification System (NAICS) code included in the Iowa and SWIS wage data.

Industry sectors are defined by the type of business that an employer engages in, not the occupation of an employee (defined by the day-to-day tasks the employee performs). Occupational data is not included in the UI wage records, so there is no way to determine if the student actually acquired or transferred to a job which matched her or his training, but assumptions can be made by industry staffing patterns and wages.

**TABLE 6. MEDIAN WAGES BY INDUSTRY, YEAR PRIOR TO ENROLLMENT AND FOLLOWING EXIT:
AY 2019-2020 COHORT (TOP TEN INDUSTRIES BY EMPLOYMENT)**

Industry Sector of Employment	Year Prior to Noncredit Enrollment			Year Following Noncredit Enrollment		
	Matched to Employment		Adjusted Quarterly Median Wage	Matched to Employment		Adjusted Quarterly Median Wage
	#	%		#	%	
Health Care & Social Assistance	874	22.5	\$6,561	1,257	28.0	\$7,026
Manufacturing	576	14.9	\$13,035	584	13.0	\$15,101
Public Administration	424	10.9	\$20,486	444	9.9	\$21,694
Transportation & Warehousing	78	2.0	\$8,246	403	9.0	\$7,849
Retail Trade	434	11.2	\$4,572	338	7.5	\$5,766
Construction	294	7.6	\$10,050	337	7.5	\$11,730
Administrative & Support Services	282	7.3	\$5,474	283	6.3	\$6,334
Educational Services	127	3.3	\$7,212	181	4.0	\$6,617
Wholesale Trade	128	3.3	\$10,940	144	3.2	\$11,832
Accommodation & Food Services	248	6.4	\$2,277	122	2.7	\$2,733
Finance & Insurance	103	2.7	\$18,747	96	2.1	\$20,486
Professional, Scientific & Technical Services	88	2.3	\$13,475	79	1.8	\$14,105
Other Services	55	1.4	\$6,199	61	1.4	\$7,333
Information	40	1.0	\$12,598	30	0.7	\$11,835
Agriculture, Forestry, Fishing & Hunting	32	0.8	\$9,040	28	0.6	\$12,314
Utilities	23	0.6	\$21,031	28	0.6	\$19,721
Real Estate, Rental & Leasing	24	0.6	\$9,729	25	0.6	\$11,285
Arts, Entertainment & Recreation	27	0.7	\$2,880	17	0.4	\$2,439
Management of Companies & Enterprises	12	0.3	\$6,829	14	0.3	\$9,724
Mining and Unknown	*****	*****	*****	*****	*****	*****

The industry sector that employed the largest number of the noncredit students in the AY 2019-2020 cohort was the Health Care and Social Assistance industry. Health Care and Social Assistance had a gain in the number of employees (874 to 1,257), followed by Transportation and Warehousing (78 to 403). Conversely, the Accommodation and Food Services and Retail Trade industries show the largest loss of employees (248 employed to 122 in food service and 434 employed to 338 in retail).

The industries with the highest quarterly median wages in the year following completion with more than 100 employed were Public Administration (\$21,694), Finance and Insurance (\$20,486), Utilities (\$19,721) and Manufacturing (\$15,101).

Some of the quarterly median wages show a slight decrease following the completion of the program. However, this is most likely explained by new employment and starting wages, which are less than wages of experienced workers. This is especially true when the number of those with new employment is dramatically larger (i.e., Utilities, and Information Technology).

A link to complete industry employment and wage data can be found in Appendix A.

Employment and Wages by Contact Hours and CIP

Table 7 reflects the employment and wages, by number of contact hours for those in the AY 2019-2020 cohort who were employed in the year following graduation. For example, of the 3,059 students who enrolled in 32 to 99 contact hours of noncredit courses and exited in AY 2019-2020, 92.5 percent matched employment records within the year following exit and earned a quarterly median wage of \$10,231. Additionally, 4.1 percent had previously earned a degree prior to enrolling in the noncredit program. Those with over 200 contact hours matched employment at a rate of 89.6 percent and the wages were slightly lower than those in shorter term programs, with an adjusted quarterly median wage of \$9,681.

TABLE 7. EMPLOYMENT, WAGES AND PREVIOUS DEGREE EARNED BY CONTACT HOUR, FIRST YEAR FOLLOWING COMPLETION: AY 2019-2020 COHORT

Size of Award	Number in Cohort	Previous Degree		Matched to Employment		Adjusted Quarterly Median Wage \$
		#	%	#	%	
32 to 99 Contact Hours	3,059	125	4.1	2,830	92.5	\$10,231
100 to 200 Contact Hours	1,088	37	3.4	961	88.3	\$7,739
Over 200 Contact Hours	780	17	2.2	699	89.6	\$9,681

Figure 13 illustrates the employment and wages by CIP for the 10 largest programs (by enrollment) consisting of 32 to 99 contact hours. The bar in the figure represents the percentage of those who matched employment within the first year following program exit and the dot illustrates the quarterly median wage.

The highest percentage of employment (97.9) was for those who exited from the medication aid noncredit program (CIP 512603). This group earned a quarterly median wage of \$8,685. The highest quarterly median wage (\$23,921) was for the students who exited from the emergency medical technology/technician program (CIP 510904) and the employment match rate the first year following exit for this group 98.2 percent.

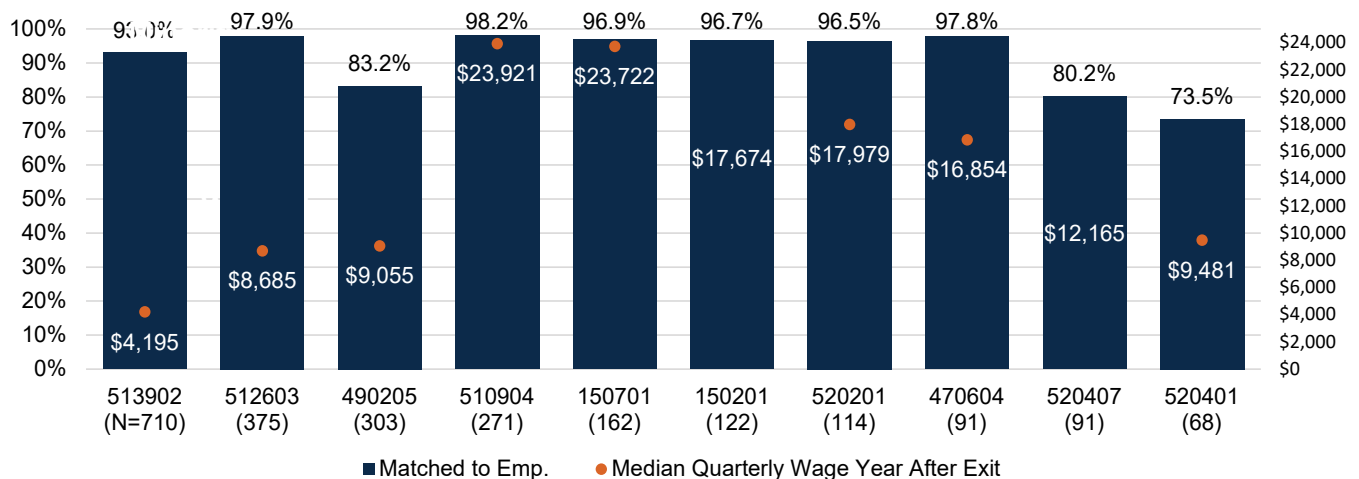
RESEARCH HIGHLIGHTS

Employment First Year Following Exit

More than 90 percent of individuals in the following noncredit programs, requiring between 32 and 99 contact hours, were employed the year following program completion:

- » Nursing Assistant/Aide and Patient Care Assistant/Aide
- » Medication Aide
- » Emergency Medical Technology/Technician (EMT Paramedic)
- » Occupational Safety and Health Technology
- » Engineering Technology/Technician
- » Business Administration and Management, General
- » Automobile/Automotive Mechanics Technology/Technician

FIGURE 13. EMPLOYMENT AND WAGES BY PROGRAM BETWEEN 32 AND 99 CONTACT HOURS, FIRST YEAR FOLLOWING EXIT: AY 2019-2020 COHORT



Program Legend:

513902: Nursing Assistant/Aide and Patient Care Assistant/Aide

512603: Medication Aide

490205: Truck and Bus Driver/Commercial Vehicle Operator

510904: Emergency Medical Technology/Technician (EMT Paramedic)

150701: Occupational Safety and Health Technology/Technician

150201: Civil Engineering Technology/Technician

520407: Business/Office Automation/Technology/Data Entry

470604: Automobile/Automotive Mechanics Technology/Technician

520407: Business/Office Automation/Technology/Data Entry

520401: Marketing/Marketing Management, General

Note: Some of the noncredit programs have enrollment primarily from established professionals in need of continuing education credits which may attribute to higher median wages.

Figure 14 shows the outcomes by CIP for the 10 largest programs (by enrollment) consisting of 100 to 200 contact hours. The employment percentages, the first year following completion, ranged from 69.0 percent (allied health diagnostics - CIP 510999), to 100 percent (industrial mechanics and maintenance technology and electrician programs - CIP 470303, 460302).

A complete listing of programs containing wage and employment data can be found in Appendix A.

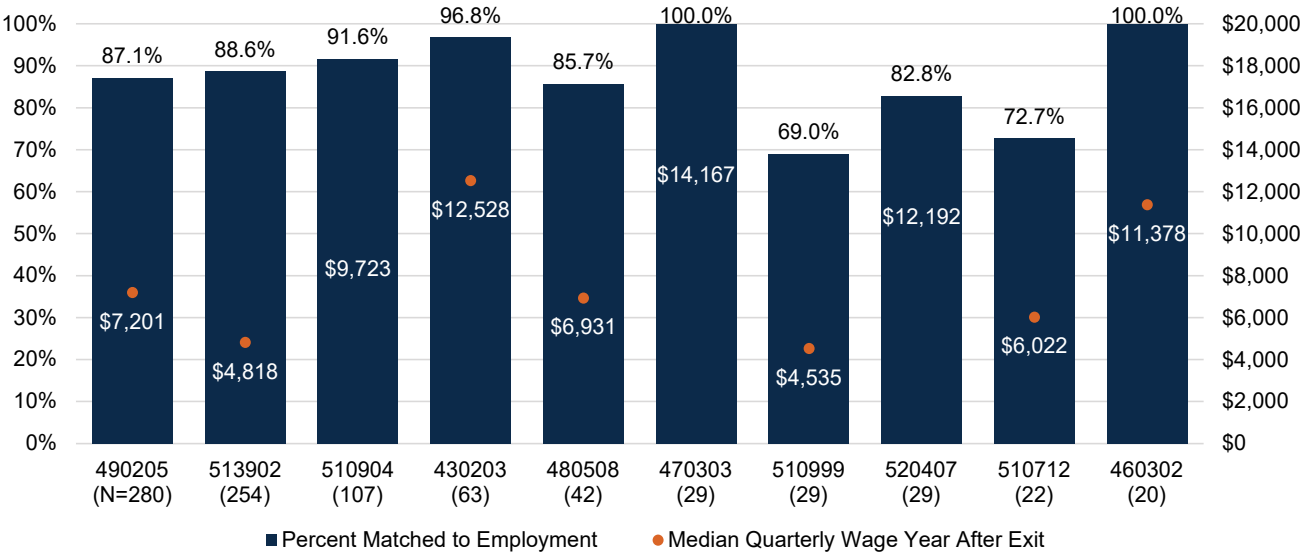
RESEARCH HIGHLIGHTS

Employment First Year Following Exit

More than 90 percent of individuals in the following noncredit programs, requiring between 100 and 200 contact hours, were employed the year following program completion:

- » Emergency Medical Technology/ Technician (EMT Paramedic)
- » Fire Science/Firefighting
- » Industrial mechanics and Maintenance Technology
- » Electrician

FIGURE 14. EMPLOYMENT AND WAGES BY PROGRAM BETWEEN 100 AND 200 CONTACT HOURS, FIRST YEAR FOLLOWING EXIT: AY 2019-2020 COHORT



Program Legend:

490205: Truck and Bus Driver/Comm. Vehicle Operator/Instructor
 513902: Nursing Assistant/Aide and Patient Care Assistant/Aide
 510904: Emergency Medical Technology/Technician (EMT Paramedic)
 430203: Fire Science/Firefighting
 480508: Welding Technology/Welder

470303: Industrial Mechanics and Maintenance Technology
 510999: Allied Health Diagnostic, Intervention and Treatment Professions, Other
 520407: Business/Office Automation/Technology/Data Entry
 510712: Medical Reception/Receptionist
 460302: Electrician

A sample of the programs consisting of 200 or more contact hours are illustrated in Figure 15. The employment percentage for those who exited from the electrical/electronic equipment installation/repair program (CIP 470101), plumbing technology (CIP 460503) and electrician (460302) were the highest at 100 percent. The highest quarterly median wage of \$18,161 was earned by those who exited from the industrial mechanics and maintenance technology program.

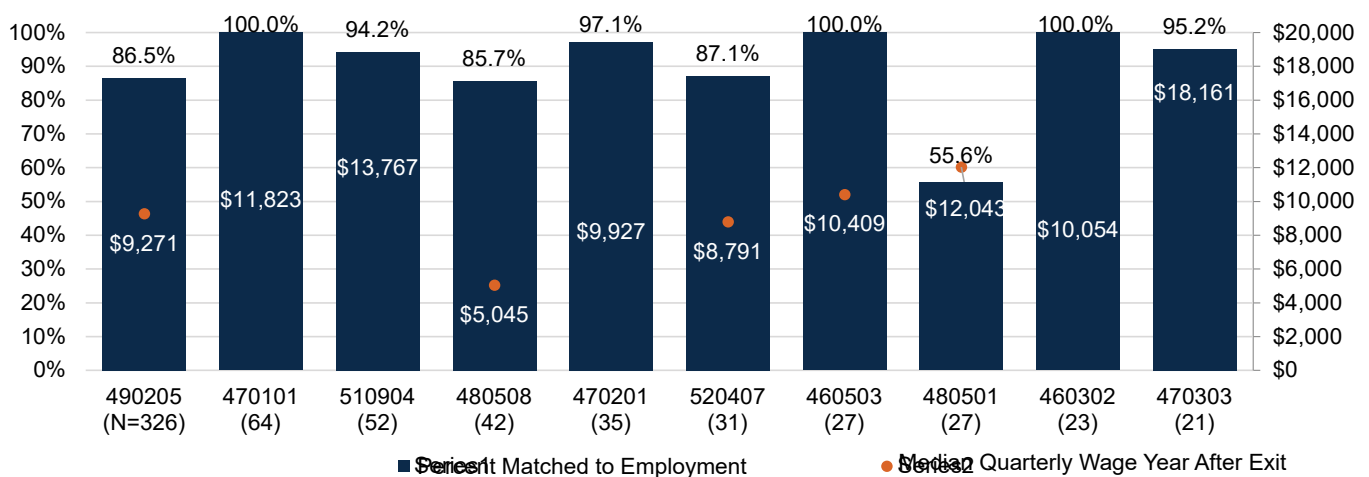
RESEARCH HIGHLIGHTS

Employment First Year Following Exit

More than 90 percent of individuals in the following noncredit programs, requiring 200 or more contact hours, were employed the year following program completion:

- » Electrical/Electronic Equipment Installation and Repair, General
- » Emergency Medical Technology/Technician (EMT Paramedic)
- » Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/Technician.
- » Plumbing Technology/Plumber..
- » Electrician
- » Industrial Mechanics and Maintenance Technology

FIGURE 15. EMPLOYMENT AND WAGES BY PROGRAM MORE THAN 200 CONTACT HOURS, FIRST YEAR FOLLOWING EXIT: AY 2019-2020 COHORT



Program Legend:

490205: Truck and Bus Driver/Comm. Vehicle Operator/Instructor	520407: Business/Office Automation/Technology/Data Entry
470101: Electrical/Electronics Equipment Installation/Repair, General	460503: Plumbing Technology/Plumber
510904: Emergency Medical Technology/Technician (EMT Paramedic)	480501: Machine Tool Technology/Machinist
480508: Welding Technology/Welder	460302: Electrician
470201: Heating, Air Conditioning, Ventilation and Refrigeration Maintenance	470303: Industrial Mechanics and Maintenance Technology

Career Clusters

Career and technical education (CTE) in Iowa consists of educational programs offering courses designed to prepare individuals for immediate employment in current or emerging occupations. These programs consist of competency-based, applied learning opportunities that contribute to a student's academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability and occupational-specific skills.

CTE programs at the community college level can be presented as a part of the national career cluster framework. Each career cluster represents a distinct grouping of occupations and industries based on the knowledge and skills required. The following 16 career clusters and related career pathways provide an important organizing tool for schools to develop more effective programs of study and curriculum.

Agriculture, Food and Natural Resources

Producing, processing, marketing, distribution, financing and development of agricultural commodities and resources.

Architecture and Construction

Designing, planning, managing, building and maintaining the built environment.

Arts, A/V Technology and Communications

Designing, producing, exhibiting, performing, writing and publishing multimedia content.

Business, Management and Administration

Planning, organizing, directing and evaluating business functions essential to efficient and productive business operations.

Education and Training

Planning, managing and providing education, training and related learning support services.

Finance

Planning and related services for financial and investment planning, banking, insurance and business financial management.

Government and Public Administration

Planning and executing government functions at the local, state and federal levels.

Health Science

Planning, managing and providing therapeutic and diagnostic services, health informatics and biotechnology research and development.

Hospitality and Tourism

Preparing individuals for employment related to restaurant and food/beverage services, lodging, travel and tourism, recreation, amusement and attractions.

Human Services

Preparing individuals for employment that relates to families and human needs such as counseling and mental health services, family and community services, personal care and consumer services.

Information Technology (IT)

Building linkages in IT occupations for entry level, technical and professional careers related to the design, development, support and management of hardware, software, multimedia and systems integration services.

Law, Public Safety, Corrections and Security

Planning, managing and providing legal, public safety, protective services and homeland security.

Marketing

Planning, managing and performing marketing activities to reach organizational objectives such as brand management, professional sales, merchandising, marketing, communications and market research.

Manufacturing

Planning, managing and performing the processing of materials into intermediate or final products and related professional and technical support activities.

Science, Technology, Engineering and Mathematics (STEM)

Planning, managing and providing scientific research and professional and technical services, including laboratory and testing and research and development services. Please note that most STEM occupations are embedded in other career clusters.

Transportation, Distribution and Logistics

Planning, managing and moving people, materials and goods by road, pipeline, air, rail and water, and related professional and technical support services such as transportation infrastructure planning, management, logistics services, mobile equipment and facility maintenance.

Enrollment by Career Cluster

Career clusters represent groupings of occupational programs designed to prepare students for success in the workforce by developing particular skill sets required of the trade or profession. However, when researching career clusters, it is important to note that each cluster represents multiple industries and a variety of occupations within those industries.

Another challenge of researching outcomes based on career clusters is that when a student continues his or her education into a credit-bearing program after completing a noncredit program, there is not always a clear or direct path. In addition, many of the noncredit programs are designed to enhance skills for reemployment opportunities, not necessarily for transfer to credit-bearing programs.

TABLE 8. NONCREDIT ENROLLMENT BY CAREER CLUSTER AND CREDIT PROGRAM CAREER CLUSTERS FOR THOSE WHO CONTINUED EDUCATION

Noncredit Cluster	Credit Cluster																Total
	AY 2019-2020	1	2	3	4	5	6	7	8	9	10	11	12	13	14	16	
1 - Agriculture, Food & Natural Resources	1	2	0	1	0	0	0	1	0	0	0	0	0	1	2	8	
2 - Architecture & Construction	0	2	0	0	0	0	1	3	0	0	0	0	0	0	0	6	
3 - Arts, Audio/Video Technology & Communications	0	0	1	1	0	0	0	1	0	0	0	0	0	2	0	5	
4 - Business Management & Administration	0	1	0	7	0	0	2	12	3	1	1	1	1	1	1	28	
5 - Education & Training	0	1	2	2	2	0	1	97	4	2	1	0	21	5	3	137	
6 - Finance	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	
7 - Government & Public Administration	0	0	1	0	1	0	4	2	0	0	1	0	0	2	0	11	
8 - Health Science	0	0	0	0	1	1	0	146	2	0	0	0	2	1	1	152	
9 - Hospitality & Tourism*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0*	0	
10 - Human Services	0	0	0	0	0	0	0	13	0	0	0	0	0	0	1	14	
11 - Information Technology	0	5	0	2	0	0	0	2	0	0	2	0	0	0	2	13	
12 - Law, Public Safety, Corrections & Security	0	0	0	1	0	0	0	7	0	0	0	2	0	0	0	10	
13 - Manufacturing	0	19	0	1	0	0	0	0	1	0	0	0	2	0	0	22	
14 - Marketing	0	0	1	1	0	0	0	1	0	0	0	0	0	2	0	5	
15 - Science, Technology, Engineering & Math*	0	3	0	0	1	0	0	33	0	0	0	0	9	1	0	47	
16 - Transportation, Distribution & Logistics	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3	6	
Total	1	33	6	16	5	3	8	318	10	3	5	5	35	15	13	466	

*No match to credit cluster year following completion for Hospitality and Tourism

Table 8 above, illustrates the number of students in noncredit programs by career cluster (indicated by number) for the AY 2019-2020 cohort, and the subsequent enrollment in credit-bearing programs, the year following completion. For example, the majority of students who continued education in credit programs were in the noncredit health science cluster (N=152) and 146 (96.1 percent) of these remained in the health science cluster upon enrolling in a credit program. The remaining were sprinkled across other credit clusters such as manufacturing.

One notable limitation to identifying the path to a credit program is that there are a number of colleges that do not report the credit program CIP code in the NSC system. Though the institution name, type and state are contained in the data, the CIP code and/or program title variables are left empty, therefore unknown. Of the 938 students who were enrolled in credit-bearing programs following completion of the noncredit program, 472 did not have a record that contained CIP data for the credit program and are not included in this table.

Note: The national career cluster system identifies liberal arts programs as a part of the education and training career cluster.

Transition into the Workforce

In the previous sections, career clusters and primary industry sectors of employment were analyzed independently. However, of particular interest, is the cross-tabulation of these two variables, accomplished by tracking exiters within each career cluster to the industry sectors in which they secured employment.

Figure 16 provides a visualization used to relate these two variables. Circos, software that uses polar coordinate mapping to illustrate data relationships, maps the career clusters to primary industry employment information for each graduate in the study.

The colored bars on the left side of the circle represent the career clusters for the noncredit program in the study. Each colored bar corresponds to one of the 16 career clusters listed on the left. The gray bars on the right side represent the industry sectors in which the exiters secured employment. Each gray bar corresponds to one of the 20 industry sectors listed on the right.

Figure 17, on the next page, illustrates the relationship between career clusters and industry sectors for the AY 2019-2020 cohort via hundreds of ribbons connecting the career cluster exiters (left bars) to their industry sector of employment (right bars). The width of the bars on each side depicts the overall number of exiters in each cluster and those employed within each sector. When the number of students was too low for reporting, the ribbons associated with them were removed from Figure 17, resulting in less ribbons.

Another important limitation to consider is that this data show the industry sectors in which exiters were primarily employed, not their actual occupations. For instance, a health science exiter may be a pharmaceutical technician employed by a pharmacy within a large retail store. While they are doing work related to health care, they are reported as employed in the retail trade sector. This distinction between occupation and industry sector is important to note when analyzing the flow from education to industry as illustrated in Figures 17 and 18.

FIGURE 16. CIRCOS VISUALIZATIONS

Career Cluster

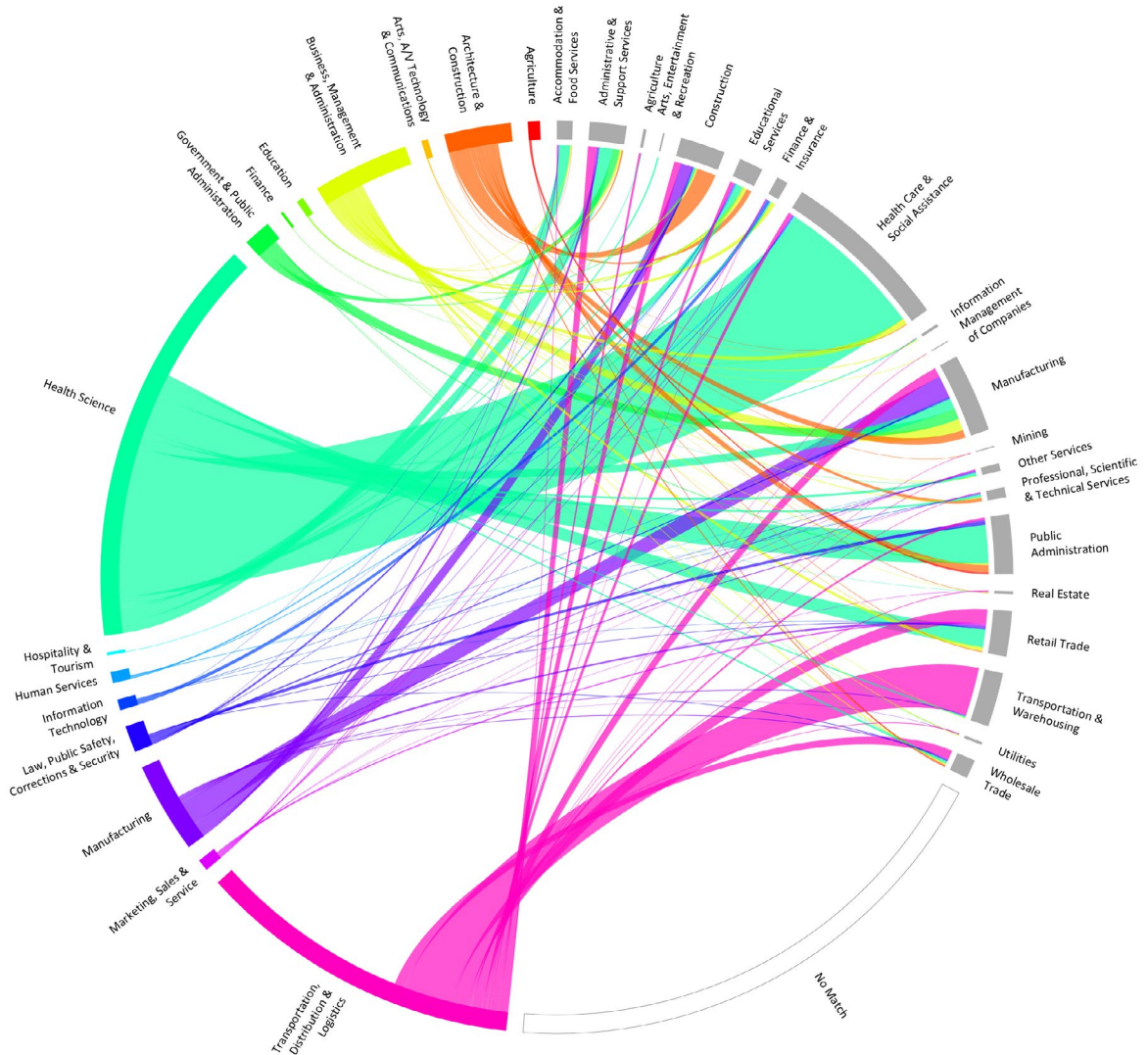
- Agriculture, Food, and Natural Resource
- Architecture and Construction
- Arts, Audio/Video Technology, and Communications
- Business, Management and Administration
- Education and Training
- Finance
- Government and Public Administration
- Health Science
- Hospitality and Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections and Security
- Manufacturing Career
- Marketing Sales and Service
- Science, Technology, Engineering and Mathematics
- Transportation, Distribution, and Logistics



Industry Cluster

- Accommodation and Food Services
- Admin. Support, Waste Mgmt. and Remediation
- Agriculture, Forestry, Fishing and Hunting
- Arts, Entertainment and Recreation
- Construction
- Educational Services
- Finance and Insurance
- Health Care and Social Assistance
- Information Technology
- Management of Companies and Enterprises
- Manufacturing
- Mining
- Other Services
- Professional, Scientific and Tech. Services
- Public Administration
- Real Estate, Rental and Leasing
- Retail Trade
- Transportation and Warehousing
- Utilities

FIGURE 17. CLUSTER TO INDUSTRY MAPPING FOR AY 2019/2020 NONCREDIT EXITERS



Note: Ribbons representing cells that are suppressed in the data are not shown in this visualization.

Cluster to Industry

As mentioned previously, students enrolled in the health science career cluster represent the largest portion of the AY 2016/2019 cohort, which explains why the aqua (mid left) sector of Figure 17 is so wide. All exiters are graphically represented in this figure, with the “No Match” (mid-bottom) section corresponding to those exiters who did not match UI wage records.

This diagram illustrates that the majority of health science exiters obtained employment within the health care and social assistance industry; however, this career cluster provided workers in nearly every industry. The transportation and logistics completers were largely disbursed as well, with their largest industry sectors of employment being transportation and warehousing, wholesale trade and manufacturing.

**FIGURE 18. INDUSTRY MAPPING BY CLUSTER, AY 2019/2020,
COMMUNITY COLLEGE GRADUATES**

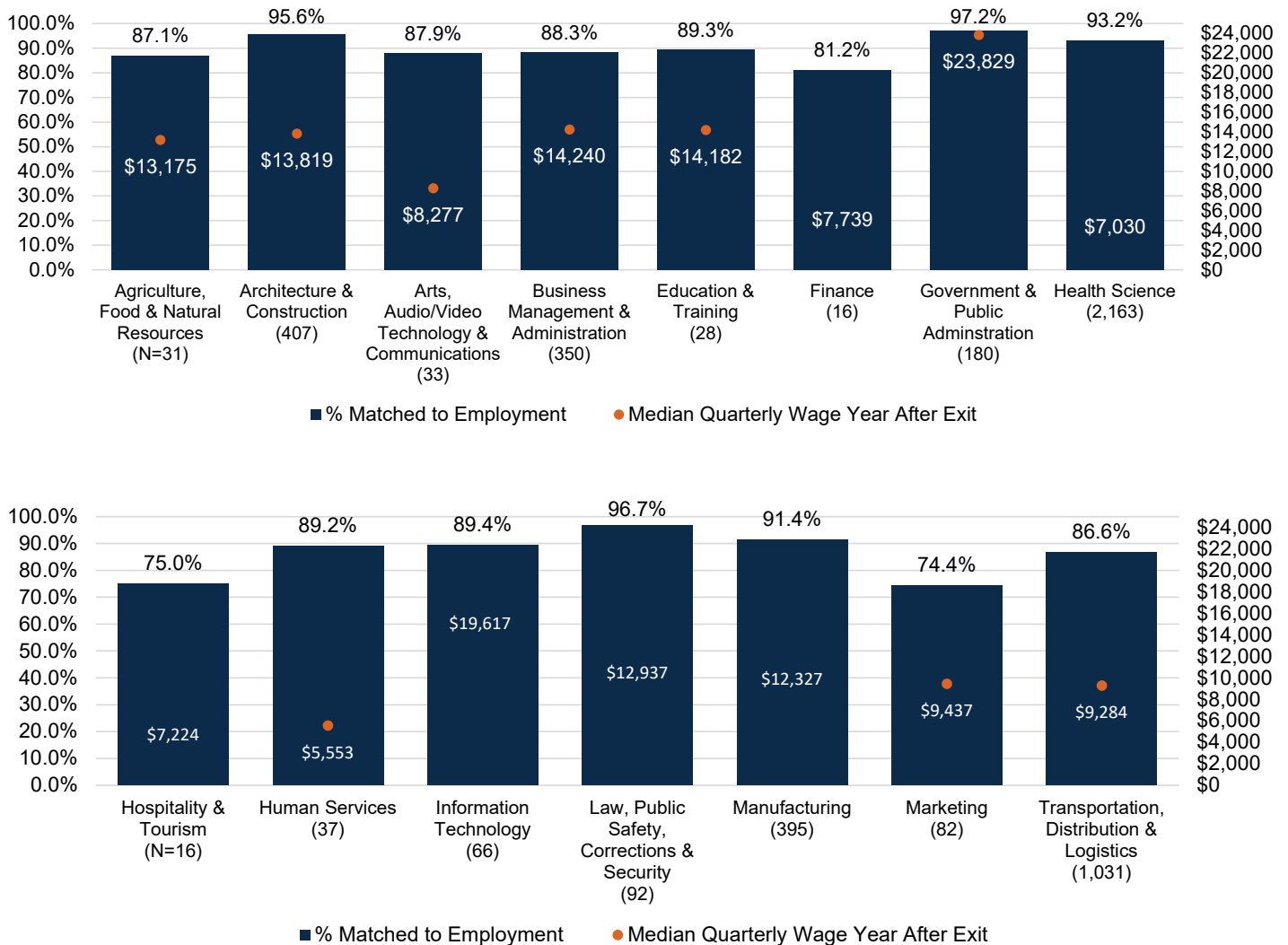


Employment by Career Cluster

Figure 19 illustrates the employment and wage outcomes of the AY 2019-2020 noncredit students by career cluster in the first year following exit. The 34 exiters in the government and public administration cluster had the highest employment match rate with 97.2 percent and earned a median quarterly wage of \$23,829. The next highest employment percentage was achieved by the 92 students in the architecture and construction career cluster (96.7 percent) who earned a median quarterly wage of \$12,937. In the most popular health science cluster, 93.2 percent of the 2,163 exiters matched employment and earned a quarterly median wage of \$7,030.

Lower rates for matching employment can occur due to the limitations of the UI wage data. Records that are matched must stem from employers who pay UI tax. More specifics on the UI wage records can be found in methodology section of this report.

FIGURE 19. EMPLOYMENT AND WAGES BY CAREER CLUSTER, FIRST YEAR FOLLOWING EXIT: AY 2019-2020 COHORT



Methodology and Research Limitations

Noncredit Cohort Formation

1. Starting Cohort: Iowa Community College Management Information Systems (MIS) database of Noncredit Enrollments for AY 2015-2016 - We use the latest available data that allows for at least 12 months past enrollment for tracking students into further education and/or employment one year after finishing cohort formation year.
2. Exclude students without valid SSNs, first and last names, and dates of birth (DOB) - We have to limit our research to students with valid SSNs, first and last names and DOBs, since tracking students into the workforce involves SSNs and tracking students to further education involves names and DOBs as required data elements.
3. Identify Career and Technical Education (CTE) enrollees - We identify CTE enrollees utilizing data codes for Career/Vocational Training and Upgrading and Economic Development programs with National Center for Educational Statistics (NCES) Classification of Instructional Program codes (CIP) listed under the Advance CTE 16 National Career Clusters®.
4. Establish CTE enrollees with sizable CTE education, resulting in labor market value credential/experience - The minimum acceptable noncredit educational level is established at 32 CTE contact hours. This threshold is established to match the minimum existing CTE credit credential approved for Iowa community colleges. This threshold allows for justified comparability of the value of non-credit CTE education to corresponding credit CTE education, thus providing comparable material for measuring educational and employment outcomes. The same logic is being used in the MIS data reporting manual and, subsequently, for data reporting to third parties (e.g., Voluntary Framework of Accountability).

Data Fields Formation (for calculated fields)

Some data fields are reported at face value, as they were reported to us in the MIS (e.g., gender, race/ethnicity), and some data fields contain imputed values. Below is the description of calculation methods for such fields:

1. Program of Study (POS) - POS is established based on students' enrollment CIP codes. If a student has been reported under more than one CIP code during the cohort formation year, his or her POS determination is based on the POS with the majority of contact hours. In cases of multiple CIP codes of enrollments obtained from external sources (e.g., National Student Clearinghouse [NSC], for previous, concurrent or subsequent credit enrollments), a method of random CIP number selection has been applied.
2. Age - We use "under 25" and "25 and older" categories based on each student's age as of the middle of the AY 2015-2016 (January 1, 2016) year.
3. Correctional Facilities - We use MIS data codes to establish whether a noncredit student was enrolled while in a correctional facility.
4. Previously Received Credit Award - We utilize a five-year timeframe and NSC data to establish if a student has been enrolled in noncredit education with an existing postsecondary credit award.
5. POS Length - As the length of POS in noncredit enrollments varies from a couple of weeks to a full year, we explored preceding and consecutive credit and noncredit enrollments based on a full preceding or following academic year, regardless of the length of noncredit enrollments within cohort year.

Employment and Wage Records

- » All wages for this report originate either from the Iowa Unemployment Insurance (UI) wage database or the State Wage Interchange System (SWIS) network of state UI wage databases.
- » The use of the SWIS database for program evaluation purposes is limited, and allowable uses include obtaining data on out-of-state wages during the 2nd quarter after exiting a program and status of employment for the 2nd and 4th quarter after exit. For more information, see <https://www.dol.gov/agencies/eta/performance/performance-indicators#WIOA%20PIP>
- » Both the actual wage earned (“Unadjusted Median Wage”) and the wage adjusted for inflation (“Adjusted Median Wage”) are included in all tables. Wages were adjusted for inflation to 2020 Q3 (July 2020 - September 2020) levels (CPI-u = 259.7663333) in order to make longitudinal comparisons more legitimate using the Consumer Price Index (CPI-u) as calculated by the U.S. Bureau of Labor Statistics. The formula used for adjusting wages is as follows:

$$W_{adj} = \left(\frac{CPI_t}{CPI_{base}} \right) * W_t$$

where CPI_{base} is the CPI value of the base time period (2018Q3), CPI_t is the CPI value of the time period being adjusted from, and W_t is the wage of the time period being adjusted from. Wages are adjusted after they have been aggregated by academic year (using academic year average CPI values).

- » The aggregate wages reported throughout this report do not include those graduates who did not match the UI wage database (i.e., the median wages only include those who had wages covered by UI tax during that period of time). The UI wage records do not cover those employers exempt from paying UI tax such as federal employees, members of the armed forces, the self-employed, proprietors, unpaid family workers, church employees, railroad workers covered by the railroad unemployment insurance system and students employed at a college or university as part of a financial aid package.
- » All wage estimates in the report include ALL wages in the UI wage database for that person in that year. Each individual is associated with just one industry sector and state in each time period, and that assignment is based on the industry sector/state of the employer they earned the most wages with in that period. So, for example, if Lincoln earned \$5,000 in the manufacturing industry sector and \$2,000 in the retail trade industry sector per quarter following enrollment, Lincoln would be included in the overall employment and wages table with a gross wage of \$7,000 per quarter. In the employment and wages by industry sector table, he would be included under the manufacturing industry sector with a gross wage of \$7,000 per quarter (he would not be counted in retail trade, but the wages he earned in that sector would still be counted).
- » Median wages are used in this report rather than average wages to mitigate the effect of outliers. Wage distributions are typically right-skewed and so the median is a better measure of center than the mean which is pulled in the direction of the skew (and is more affected by outliers, particularly with small sample sizes).
- » To protect individual identities, some cells in this report are suppressed due to small cell size using the following rules:
 - » Suppress the cell if number of employed in cell is less than three.
 - » If the sum of employed individuals across all suppressed subgroups is less than three, suppress the next smallest subgroup (to ensure the number of suppressed individuals is three or greater).
- » Individuals who were identified as being in a correctional facility while taking noncredit courses are excluded from analysis due to a lack of information on when they exited the facility.

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Appendix A—Contents

Below is a list of the detailed data tables for this report which can be accessed at:

<https://www.educateiowa.gov/iowa-community-college-program-outcomes>.

Methodology

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Table 1 - Overall Employment and Wages

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Appendix B - Unemployment Insurance (UI) Records Description and Limitations



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 help to prepare 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 Iowa's 15 public community colleges on state accreditation, program approval, equity review, 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 and PACE programs, Senior Year Plus and the Statewide Intermediary Network program.