IOWA
Department of Education

Iowa Community College Noncredit Program Outcomes

Noncredit Career and Technical Education (CTE)

Academic Year 2021-2022 Student Cohort
2023 Employment and Wage

October 2024

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

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

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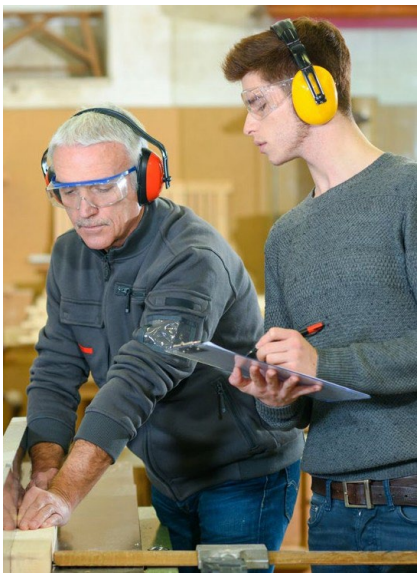


Introduction

Iowa's Community Colleges: Noncredit Career and Technical Education (CTE) Employment Outcomes Report, is a statewide analysis of outcomes for students enrolled in community college noncredit programs. The Department provides additional data tables at the institutional level 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).*

Iowa is unique among states when it comes to noncredit data collection and analysis. Like most states, it distributes state supported funding to its colleges based in large part on enrollment. Unlike most other states, however, Iowa also backs noncredit education with state dollars, so Iowa's public colleges have been counting their noncredit students since 1999. In the early years, such data collection was literally a head count, just a raw number. Over the past two decades, however, the state has built a data infrastructure and funding mechanisms for noncredit programs similar to the system in place for college credit programs.

In this report, employment and wages are analyzed to illustrate the important impact 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 by two different state agencies, the Iowa Department of Education (Department) and Iowa Workforce Development (IWD).

The Department and IWD have historically 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 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. This timing is the equivalent of the shortest credit certificate program in Iowa that has proven labor market value.

Agency Partnership

The Department, North Iowa Area Community College and IWD 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)[2] indicates the following factors 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.

HIGHLIGHT

Noncredit CTE Enrollment

Of the 151,294 noncredit program enrollments at Iowa's community colleges during academic year 2021-2022, over half (60.0 percent), or 84,654, were in noncredit CTE programs.

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 industry 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 as it relates to total credit and noncredit CTE enrollment by college.

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

FIGURE 1. Percent of Noncredit CTE Enrollment to Total CTE Enrollment (Total of All Credit and Noncredit AY 2021-22)

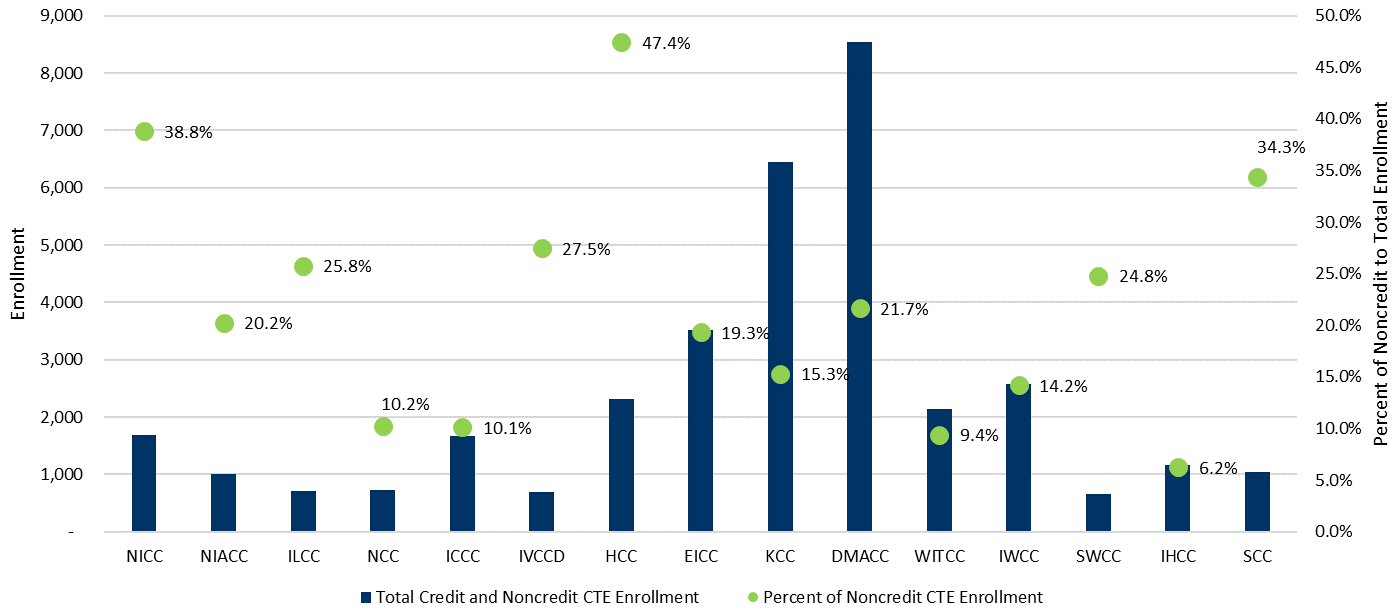


Figure 1 Abbreviation Key:

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 140,992 enrollments in academic year (AY) 2021-2022. Of those, there were 84,654 noncredit CTE enrollments (46.2 percent). For data consistency, it was necessary to establish criteria to define noncredit programs. Thirty-two 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 students, noncredit students are more likely to be enrolled in multiple programs, and are less likely to provide personal identification such as Social Security number (SSN), race/ethnicity or date of birth. Therefore, prior to following students into the workforce and further education, those without SSNs and/or birthdates were excluded from 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 8,256 students who completed noncredit CTE programs with at least 32 contact hours in AY 2021-2022.

Once extracted, data were sent to NSC to identify students who enrolled in credit-bearing programs after their noncredit CTE program completion 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

Five different cohorts (AY 2016-2018, AY 2018-2019, AY 2019-2020, AY 2020-2021 and AY 2021-2022) were analyzed and each cohort examined three discrete periods before, during and after students completed their noncredit programs:

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

Demographics of Noncredit CTE Students

This annual report contains five cohorts of data with the intention to longitudinally study students from AY 2018 forward. Of the 38,444 noncredit CTE students in aggregate studied who indicated their gender, 54.6 percent were male (20,977) and 41.3 percent (15,882) were female (the remaining 4.2 percent did not indicate gender).

The students were divided into two age groups: under 25 years of age and 25 years or older. Nearly two-thirds (68.6 percent) of noncredit students studied were age 25 years or older (25,272) and 34.1 percent (12,569) were under the age of 25.

Race/ethnicity was also identified; however, a significant number of students (16,109) did not report race/ethnicity. Of the 22,235 students who did report, 71.9 percent were white/non-Hispanic (16,050), and 28.1 percent (6,285) were racial/ethnic minority students.

FIGURE 2. Age by Gender

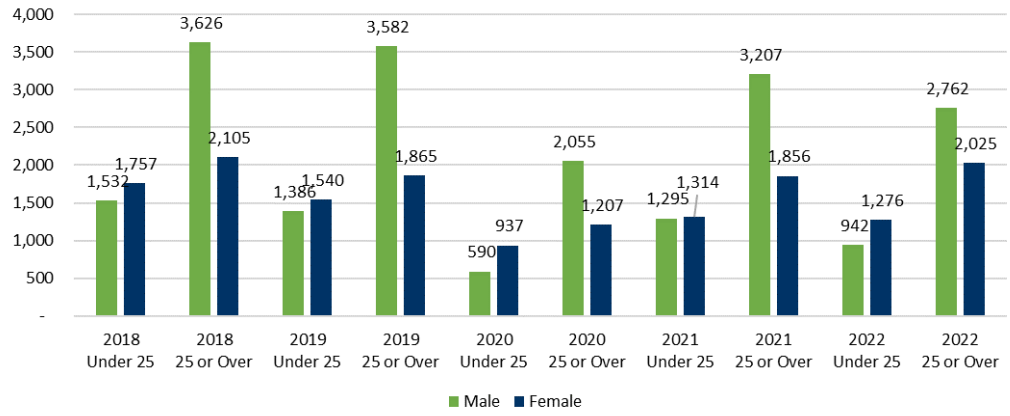
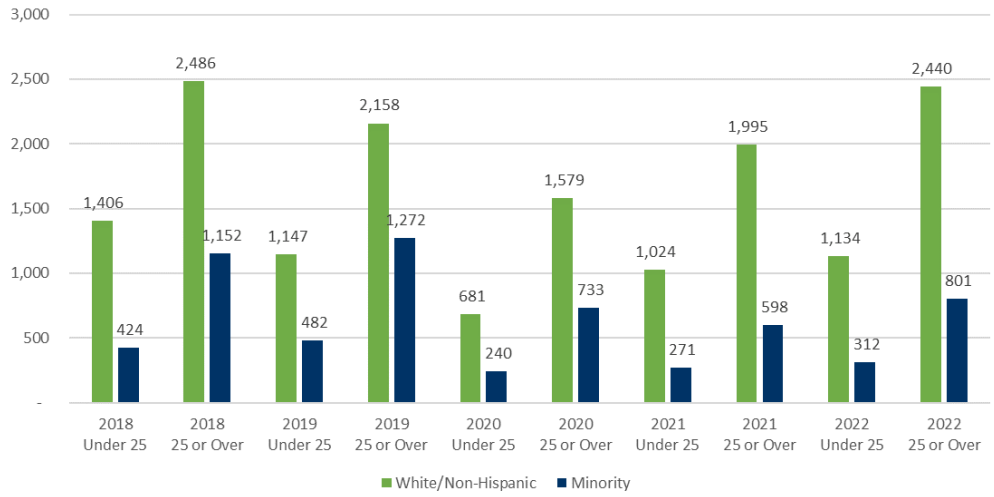


FIGURE 3. Groups by Race/Ethnicity



DEMOGRAPHICS

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

Age

- 67.9 percent of students were 25 years of age and older in AY 2022.
- 72.0 percent of all students who self-identified as being a minority were 25 years of age and older.

Gender

- 52.9 percent of students who indicated their gender were male in AY 2022.

Race/Ethnicity

- 23.7 percent of students who indicated their race/ethnicity identified themselves as being minorities in AY 2022.

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 noncredit CTE programs by two-digit CIP, with the number of students in each, reported by gender and age grouping for AY 2021-2022. The largest program by enrollment encompasses training in Health Professions and Related (3,187), followed by Transportation and Materials Moving (896). Females dominate enrollment in health profession programs (80.1 percent), whereas males represent 87.9 percent in the transportation-related CIPs.

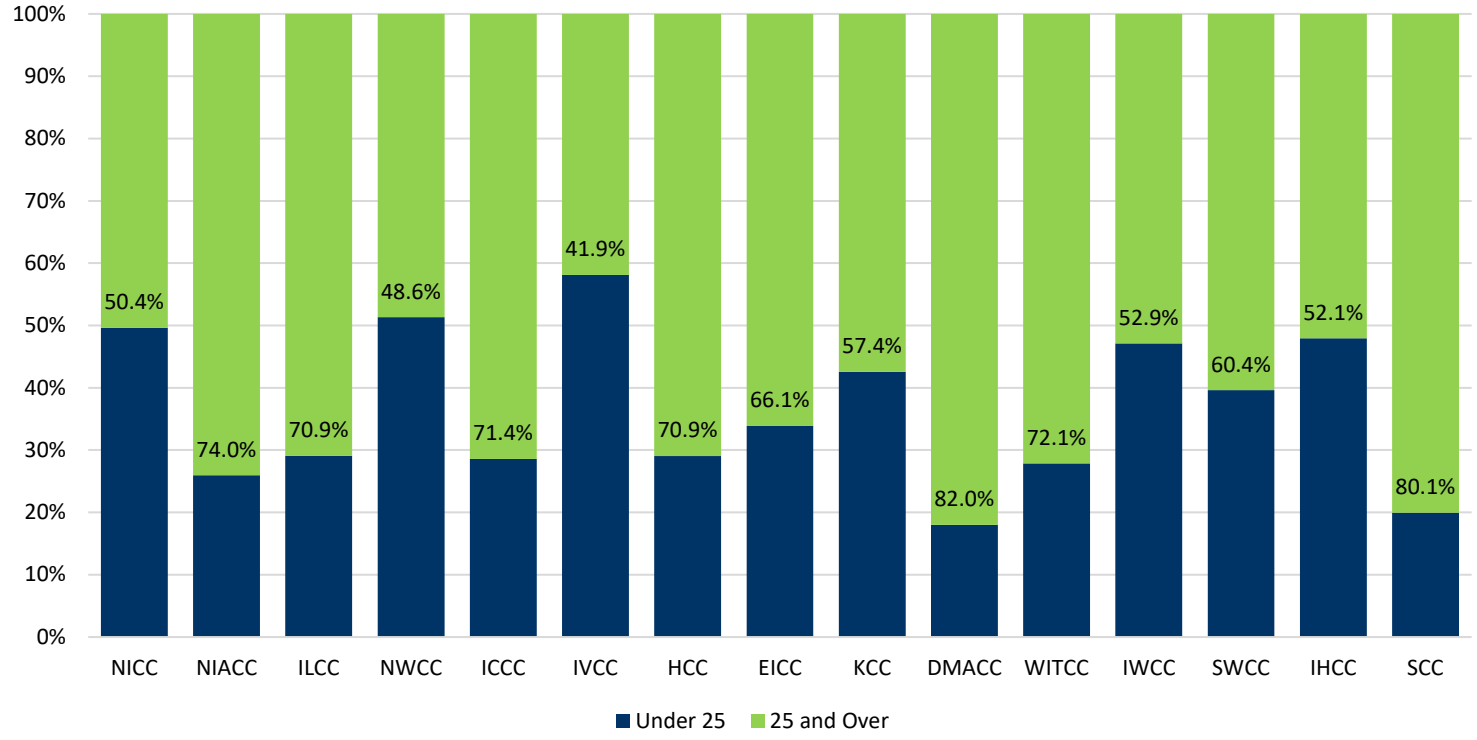
TABLE 1. Noncredit CTE Programs by Two-Digit CIP Gender and Age, AY 2021-2022

CIP Description	Male Under 25	Female Under 25	Unknown Under 25	Male 25 & Older	Female 25 & Older	Unknown 25 & Older	Total
Health Professions and Related	210	1,137	98	389	1,269	84	**3,187**
Transportation and Materials Moving	147	13	1	626	93	16	**896**
Engineering Technologies and Engineering Related	78	10	2	600	54	9	**753**
Business Management, Marketing and Related	19	22	1	179	289	14	**524**
Construction Trades	191	11	1	253	21	3	**480**
Mechanics and Repairers, General	117	6	3	342	11	0	**479**
Precision Production Trades	99	14	3	215	51	1	**383**
Family and Consumer Sciences/Human Sciences	4	25	1	29	131	2	**192**
Homeland Security, Law Enforcement, Firefighting and Related Protective Services	60	4	2	69	9	2	**146**
Agriculture	2	21	0	15	15	0	**53**
Computer and Information Sciences and Support Services	2	2	0	22	24	1	**51**
Education	1	1	0	3	17	0	**22**
Visual and Performing Arts	8	2	0	7	2	0	**19**
Parks, Recreation, Leisure and Fitness Studies	1	3	0	4	9	0	**17**
Social Sciences	0	0	0	2	13	0	**15**
Foreign Languages, Literatures and Linguistics	0	2	0	1	8	1	**12**
Communications Technologies/Technicians and Support Services	0	3	0	2	6	0	**11**
Personal and Culinary Services	2	0	0	1	1	0	**4**
History	1	0	0	1	0	0	**2**
English Language and Literature Arts	0	0	0	2	0	0	**2**
Legal Professions and Studies	0	0	0	0	1	0	**1**
Communication, Journalism and Related	0	0	0	0	1	0	**1**
Total	**942**	**1,276**	**112**	**2,762**	**2,025**	**133**	**7,250**

Figure 4 illustrates the proportion of noncredit students by age group for each community college. In seven colleges (Des Moines Area, Southeastern, North Iowa Area, Western Iowa Tech, Iowa Central, Iowa Lakes, and Hawkeye), at least 70 percent of students enrolled in noncredit programs were 25 years of age and older. The distribution of age does not appear 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. However, program offerings could play a role in these differences.

FIGURE 4. Proportion of Noncredit Students by Age Group and by College, AY 2021-2022

Note: College abbreviations are defined under Figure 1, Page 6.



Additional analysis was conducted to determine whether age played a role in relation to the length of the program in which noncredit students enrolled. There was little difference in the percentage of enrollees when cross-tabulated by age (Table 2). Over two-thirds (54.9 percent) of those under the age of 25 were enrolled in programs with 32 to 99 contact hours, 26.0 percent in 100 to 200 contact hours and 19.1 percent in programs that were over 200 contact hours. Similarly, 57.0 percent of those 25 years of age or older enrolled in programs that were 32 to 99 contact hours, 22.3 percent enrolled in 100 to 200 contact hours and 20.8 percent in programs that were over 200 contact hours in length.

TABLE 2. Contact Hours by Age Group, AY 2021-2022

Student Age Group	# 32-99 Contact Hours	% 32-99 Contact Hours	# 100-200 Contact Hours	% 100-200 Contact Hours	# Over 200 Contact Hours	% Over 200 Contact Hours
Under 25 Years of Age	1,280	54.9	605	26.0	445	19.1
25 Years of Age and Older	2,803	57.0	1,095	22.3	1,022	20.8
Total	**4,083**	**56.3**	**1,700**	**23.4**	**1,467**	**20.2**

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 institutions or a private or public college. Table 3 illustrates the distribution of students from the AY 2021-2022 cohort who enrolled in credit programs the first year following exit from their noncredit program (1,388). This distribution includes students who were enrolled in credit programs previously, during and following their noncredit program enrollment.

RESEARCH HIGHLIGHT

Continued Education in Iowa

Of the 1,388 noncredit students who continued into a credit-bearing program, 84.1 percent enrolled at an Iowa college or university.

Of the students in AY 2021-2022, less than one-fifth (19.1 percent) continued their education in credit-bearing programs. The majority of those who continued their education were under age 25 (61.7 percent, or 856), and most of this group went on to credit-bearing programs at an in-state institution (86.1 percent, or 737). Additionally, of those under age 25 who continued their education in-state, 58.1 percent (497) enrolled at a two-year community (public) college and 19.4 percent (166) transferred to public four-year institutions.

However, when analyzing the in-state data for students 25 years of age and older, 70.3 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, 84.1 percent (1,168) of students who chose to continue their education, did so in Iowa.

TABLE 3. Further Credit Education, First Year Following Noncredit Exit: 2022 (AY 2021-2022 Cohort)

Characteristics of Institution	# Continued Education In-State	% Continued Education In-State	# Continued Education Out-of-State	% Continued Education Out-of-State
Under 25 Years of Age				
2 Year Private	0	0.0	1	0.1
2 Year Public	497	58.1	40	4.7
4 Year Private	74	8.6	30	3.5
4 Year Public	166	19.4	48	5.6
Under 25 Total	**737**	**86.1**	**119**	**13.9**
25 Years of Age and Older				
2 Year Private	0	0.0	1	0.2
2 Year Public	374	70.3	32	6.0
4 Year Private	30	5.6	39	7.3
4 Year Public	27	5.1	29	5.5
25 and Older Total	**431**	**81.0**	**101**	**19.0**
Total for All	**1,168**	**84.1**	**220**	**15.9**

Before, During and After Credit Enrollment

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 2021-2022, 1,524 students enrolled in a credit program prior to enrolling in a noncredit program. The previous year, AY 2020-2021, saw 1,830 students enrolled in a credit program the year prior to enrolling in their noncredit program. However, there were fewer students enrolled during their noncredit program in AY 2021-2022 (1,473 compared to 1,740), and even fewer who enrolled the year following the completion of their noncredit program (1,389 compared to 1,602)—which is not the case in subsequent years. Of the AY 2021-2022 students, 817 students enrolled in credit programs both preceding and following their noncredit enrollment and 314 were not enrolled in credit programs prior to their noncredit program, but yet enrolled in a credit program following completion, representing a steady increase from AY 2019-2020.

FIGURE 5. Number of Noncredit CTE Students Enrolled in Credit Programs, AY 2018-2022

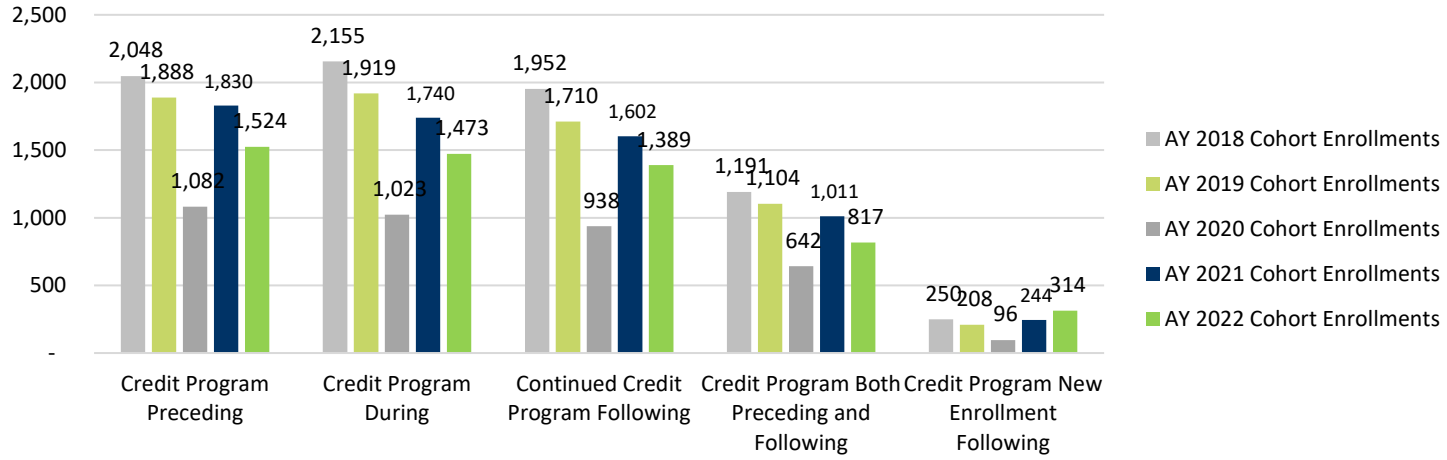
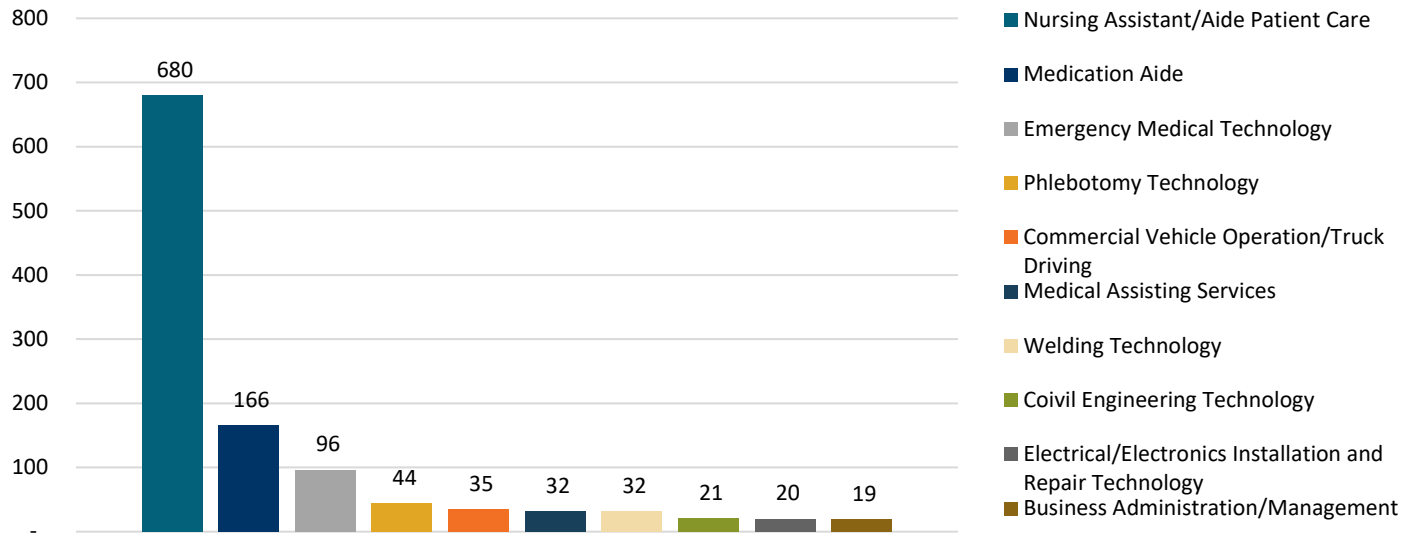


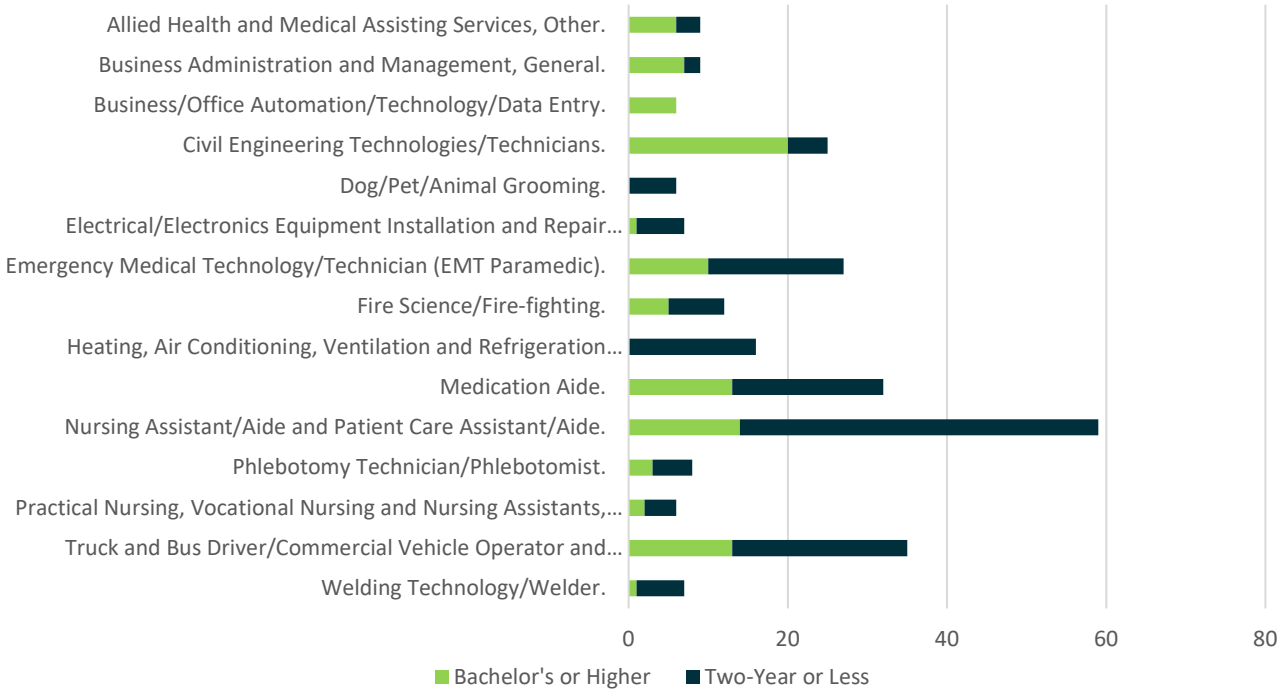
Figure 6 shows the top 10 noncredit programs that students completed before continuing on with their credit-bearing program. The majority (680) of these noncredit students were enrolled in the nursing assistant/aide and patient care program and 166 others in the medication aide program.

FIGURE 6. Top 10 Noncredit Programs Completed by Those Who Continued Credit-Bearing Programs, AY 2021-2022



Supplementary data were collected regarding previous credit-bearing education completed by noncredit students. Overall, there were 337 students in the AY 2021-2022 cohort who had previous awards/degrees. Of those students who had previous degrees, 128 (38.0 percent) had a bachelor's degree. The majority of these students completed the engineering technology noncredit program, and 209 (62.0 percent) had a two-year degree, certificate or diploma, most of which having completed the nursing assistant and patient care program (Figure 7).

FIGURE 7. Top 15 Programs, Students with Previous Degree by Type and Program, AY 2021-2022



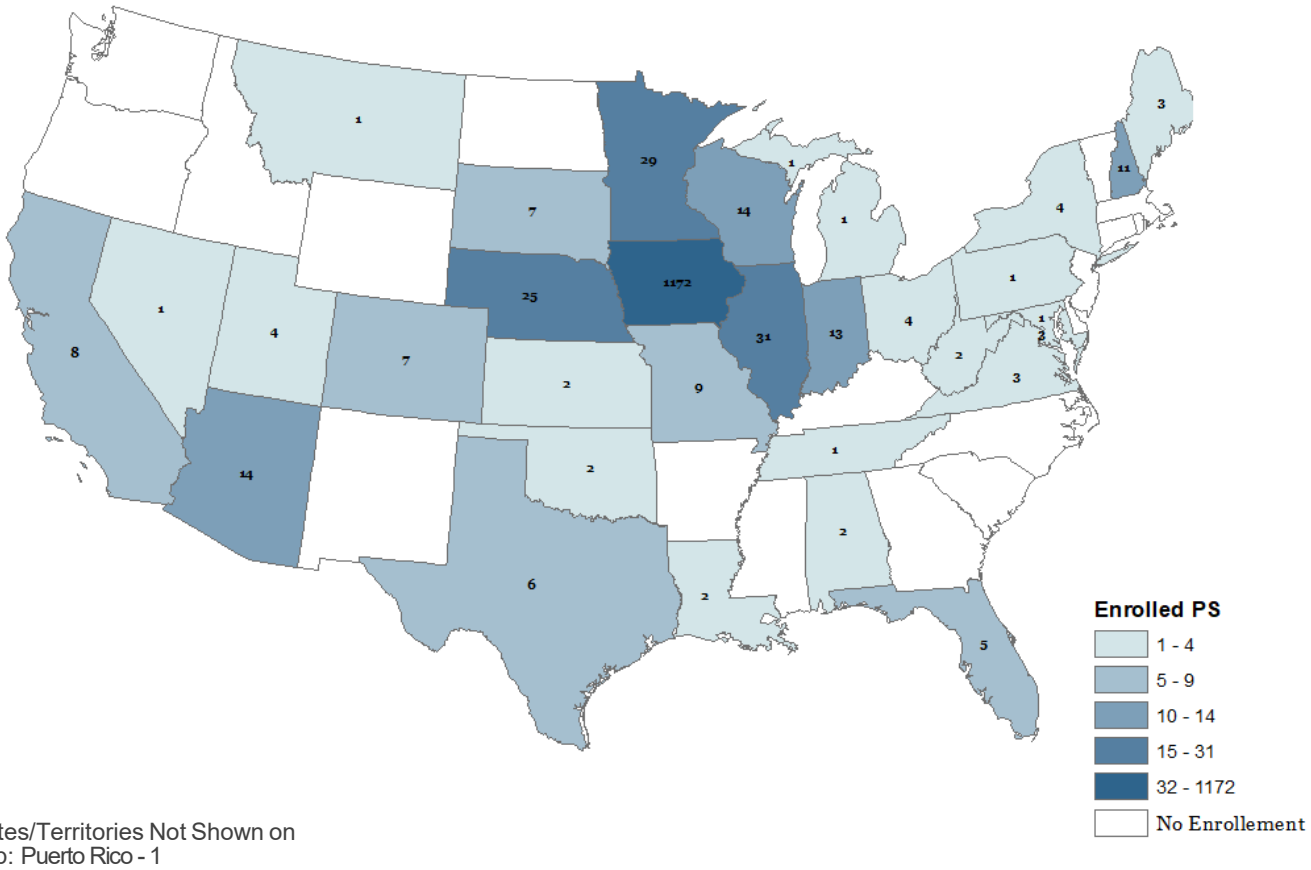
Education Retention and Migration

The vast majority of AY 2021-2022 noncredit students (84.4 percent), who enrolled in a credit-bearing program after exiting their noncredit program, remained in Iowa (1,172). 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 (31) or Minnesota (29). For those who ventured farther away, the highest concentrations of migrating students enrolled at institutions in Arizona (14), Indiana (13) or New Hampshire (11) within one year after exiting their noncredit program.

Figure 8 represents aggregate numbers for students who continued their education either in- or out-of-state one year after exit (AY 2021-2022 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. Students employed both in- and out-of-state 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 8. AY 2021-2022 Cohort Educational Migration, First Year Following Noncredit Program Exit



States/Territories Not Shown on Map: Puerto Rico - 1

Workforce Cohort

When analyzing wage and employment data, it is important to note the restrictions and limitations of the Iowa UI and 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 HIGHLIGHT

Employment and Wages

In the quarter following exit from a noncredit program, the percent of individuals who were employed increased by 5.6 percentage points, and median wages increased 15.8 percent from the quarter prior to entry.

Some noncredit students were employed prior to, during or after enrolling in their programs. Figures 8 and 9 illustrate the increasing employment percentage and upward trend in overall wages among the AY 2021-2022 cohort. These data visualizations were designed to provide a fuller picture of the impact of noncredit training. Since students enter and complete noncredit programs at different times throughout the academic year, each student's wages were independently captured based on their college start and exit dates, then aggregated relative to those dates.

Since a portion of community college noncredit students are incarcerated, it is important to control for that factor when considering wage and employment data. The AY 2021-2022 cohort included 62 students who were enrolled while incarcerated, significantly more than in previous years. For purposes of comparison, 186 students were incarcerated in AY 2020-2021, in AY 2019-2020 there were 69 such students, 141 in AY 2018-2019 and 55 incarcerated students in AY 2017-2018. All 513 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 separately for employment and recidivism outcomes. This report can be found at: https://educate.iowa.gov/media/7259/download?inline.

Using the adjusted total of 7,188 students in the AY 2021-2022 cohort, a total of 6,276 (87.3 percent) matched employment in the quarter prior to enrollment in noncredit programs, while 6,676 students (92.9 percent) matched employment in the quarter following exit. This represents a 5.6 percent percentage point increase in employment. Figure 9 illustrates the percentages of students who matched employment prior to, during and following enrollment in noncredit programs.

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 10 (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 the mean) is that it mitigates the effects of outliers to provide a more accurate representation of the typical employee's wages.

Figure 10 provides wage data, by quarter, from the first year following completion of the cohort. The adjusted median quarterly wage increased from $10,036 in the quarter prior to enrollment in noncredit CTE programs, to $11,876 in the quarter following exit for the AY 2021-2022 cohort. This change represents a 18.3 percent increase in median quarterly wages. The data are reflective of the cohort in its entirety, and will vary based on the program completed, which is studied further in the following pages.

FIGURE 9. Overall Percent Matched to Employment: AY 2021-2022 Cohort

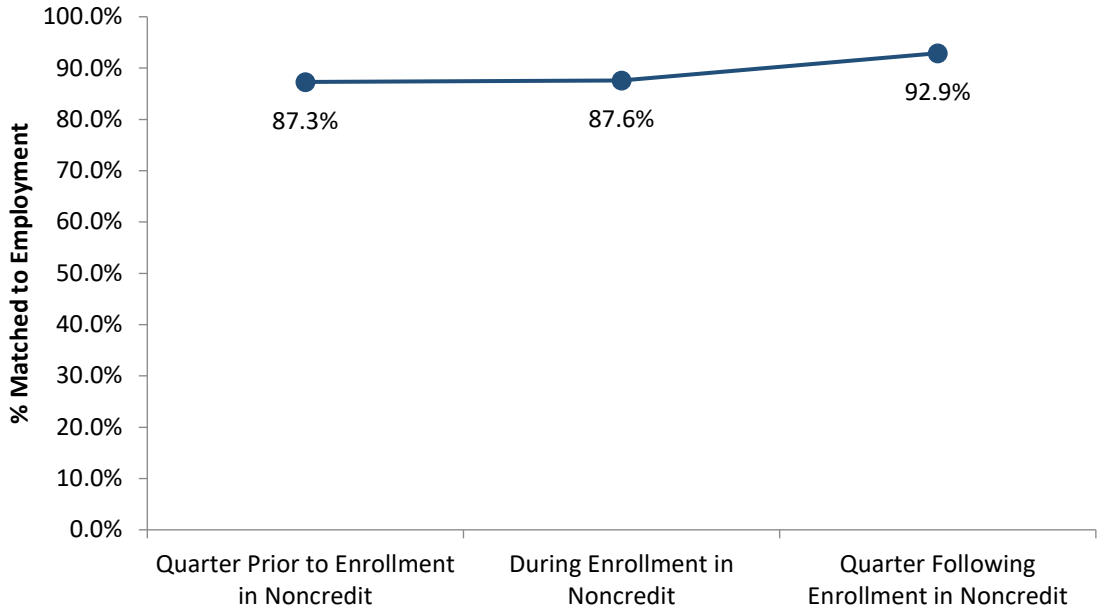
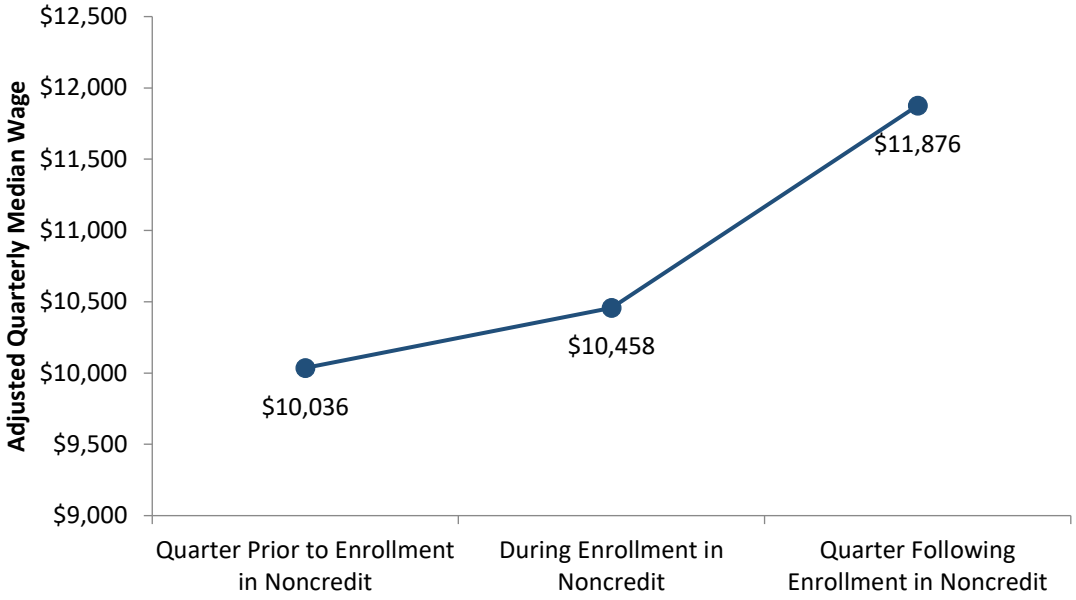


FIGURE 10. Overall Adjusted Quarterly Median Wages: AY 2021-2022 Cohort



Employment and Wages by State

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.

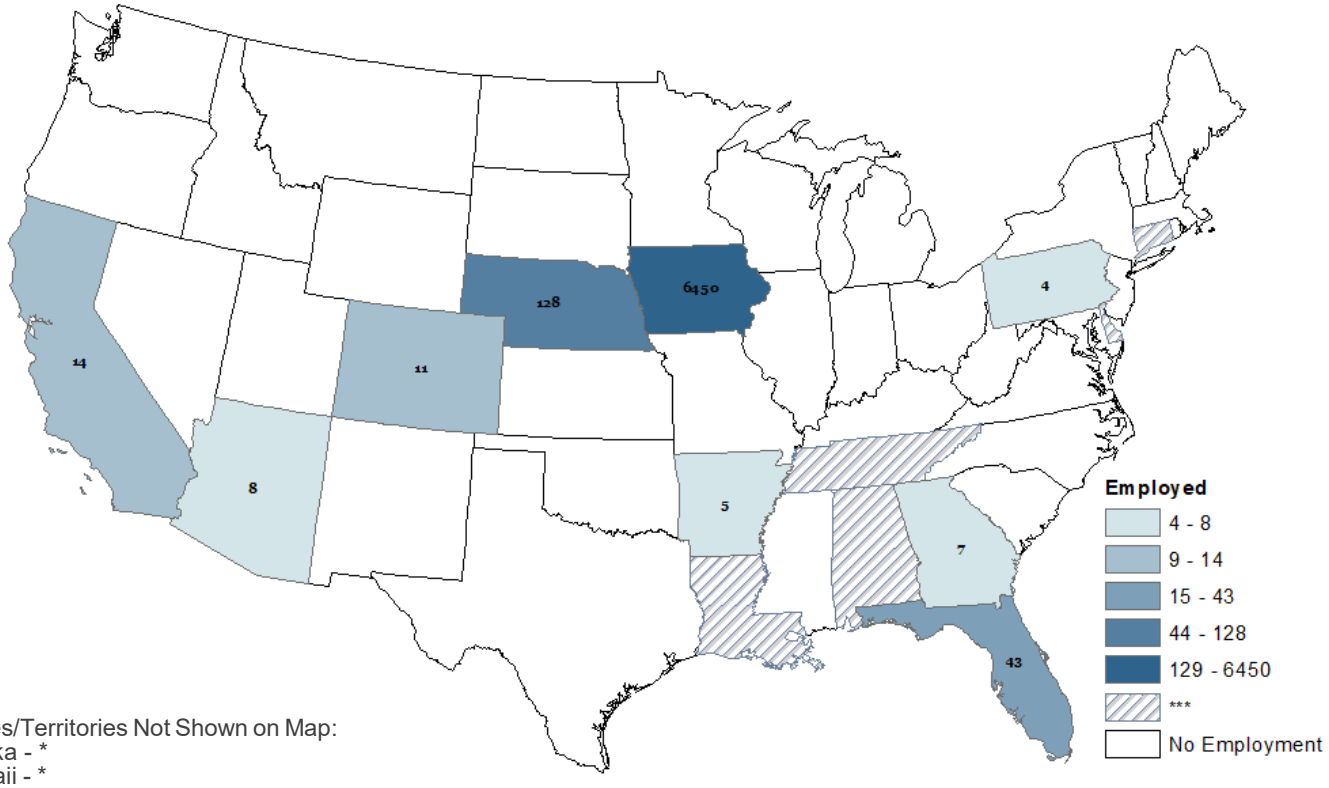
Figure 11 shows the majority of students who exited a noncredit CTE program in AY 2021-2022, and matched to employment data in the first quarter following exit, remained in Iowa (96.6 percent). Similar to those who continued their education, most graduates who were employed outside of Iowa were employed in bordering states, such as Nebraska. There were, however, notable numbers of students who were employed in Florida (43), California (14), and Colorado (11) the first quarter following exit.

RESEARCH HIGHLIGHT

Employment in Iowa

The vast majority of individuals who matched to employment records in the first quarter following exit from a noncredit program, were employed in Iowa (96.6 percent).

FIGURE 11. Primary Employment by State, First Quarter Following Completion: AY 2021-2022 Cohort



States/Territories Not Shown on Map:
Alaska - *
Hawaii - *
*Insufficient data

Employment and Wages by Age and Gender

As previously noted in this report, there were more males enrolled in noncredit programs in Iowa community colleges than females. Similarly, of the students eligible for employment analysis who reported their gender in the AY 2021-2022 cohort, 52.5 percent identified as male (Figure 12).

Table 4 provides the employment and wages of AY 2021-2022 program exiters by age group and gender. Female students under 25 years of age matched employment at a higher rate (95.7 percent) than male students in the same age group (93.5 percent), but their adjusted quarterly median wage was much lower than that of the male students, ($6,319 to $11,219 respectively). Also noted in Table 4, 9.7 percent of males under 25 years of age previously earned degrees.

The wage disparity between females and males still exists in the 25 years and older group, with women earning $6,390 per quarter less than males. Additionally, a much smaller proportion of older students previously earned degrees, with 2.6 percent of both males and females holding prior degrees.

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).

FIGURE 12. Percent of Students by Gender, AY 2021-2022 Cohort

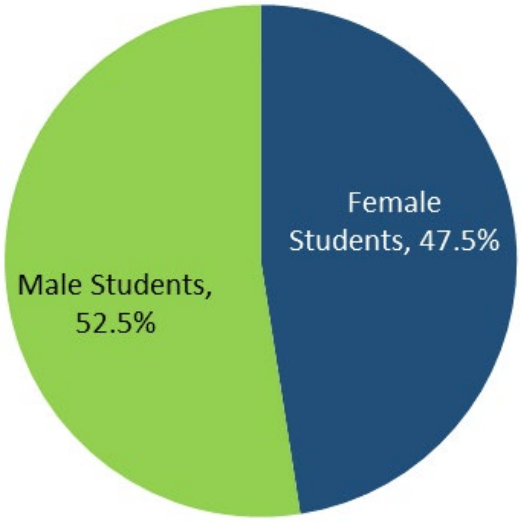


TABLE 4. Employment and Wages by Age and Gender, First Quarter Following Exit, AY 2021-2022 Cohort

Age	Gender	# in Cohort	# Previous Degree	% Previous Degree	# Matched to Employment	% Matched to Employment	Adjusted Quarterly Median Wage
Under 25	Female	1,276	104	8.2%	1,221	95.7%	$6,319
Under 25	Male	937	91	9.7%	877	93.5%	$11,219
Under 25	Unknown/Not Reported	112	16	14.3%	105	93.8%	$4,711
25 and Older	Female	2,025	53	2.6%	1,875	92.6%	$10,801
25 and Older	Male	2,707	71	2.6%	2,484	91.8%	$17,191
25 and Older	Unknown/Not Reported	131	2	1.5%	115	87.8%	$10,682

Employment and Wages by Age and Race/Ethnicity

Figure 13 shows the breakdown of students who identified their race/ethnicity in the AY 2021-2022 cohort. Over three-fourths (76.2 percent) of the noncredit students identified themselves as white/non-Hispanic, while 23.8 percent identified themselves in a racial/ethnic minority category (an increase of 1.1 percent from AY 2020-2021). A large number of students (2,526) did not report their race/ethnicity and were excluded from Figure 13.

Table 5 examines the data further by breaking out the employment and wages associated with race/ethnicity groups, by age. As illustrated below, wages vary substantially for 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 $15,001, whereas the racial/ethnic minority group had an adjusted quarterly median wage of $12,340 per quarter (17.7 percent less). The disparity is different for the under 25 age group where the racial/ethnic minority group received slightly higher quarterly median wage ($8,981) than those in the white/non-Hispanic group ($8,485). The percentage of previous held degrees did not appear to have any bearing on the wage differences. Those students who were 25 and over had fewer previous degrees but higher wages and those under 25 had a higher percentage of previous degrees but lower wages.

FIGURE 13. Percent of Enrollments by Race/Ethnicity, AY 2021-2022 Cohort

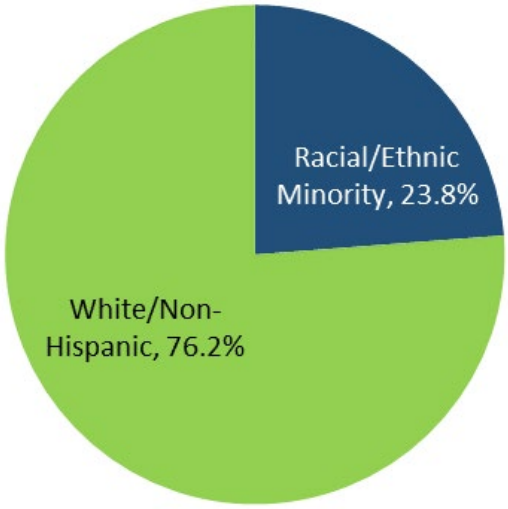


TABLE 5. Employment and Wages by Age and Race/Ethnicity, First Year Following Exit, AY 2021-2022 Cohort

Age	Race/Ethnicity	# in Cohort	# Previous Degree	% Previous Degree	# Matched to Employment	% Matched to Employment	Adjusted Quarterly Median Wage
Under 25	Racial/Ethnic Minority	312	18	5.8%	290	92.9%	$8,981
Under 25	White/Non-Hispanic	1,130	100	8.8%	1,083	95.8%	$8,485
Under 25	Unknown/Not Reported	883	93	10.5%	829	93.9%	$7,567
25 and Older	Racial/Ethnic Minority	798	26	3.3%	721	90.4%	$12,340
25 and Older	White/Non-Hispanic	2,422	66	2.7%	2,256	93.1%	$15,001
25 and Older	Unknown/Not Reported	1,643	34	2.1%	1,497	91.1%	$13,195

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 2021- 2022 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 an employer engages in, not the occupation of an employee (defined by the day-to-day tasks the employee performs). Occupational data are 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 2021-2022 Cohort (Industries by Employment)

	Year Prior to Enrollment in Noncredit			Year Following Employment in Noncredit		
Industry Sector of Employment	# Matched to Employment	% Matched to Employment	Adjusted Quarterly Median Wage	# Matched to Employment	% Matched to Employment	Adjusted Quarterly Median Wage
Health Care & Social Assistance	1,697	27.0%	$8,775	2,139	32.0%	$9,527
Manufacturing	886	14.1%	$15,891	881	13.2%	$17,093
Construction	617	9.8%	$11,233	662	9.9%	$13,360
Public Administration	468	7.5%	$16,195	544	8.1%	$16,692
Retail Trade	676	10.8%	$5,247	437	6.5%	$8,508
Transportation & Warehousing	174	2.8%	$9,062	361	5.4%	$13,807
Educational Services	255	4.1%	$8,297	301	4.5%	$8,491
Administrative & Support Services	319	5.1%	$5,586	286	4.3%	$7,508
Wholesale Trade	173	2.8%	$14,241	219	3.3%	$15,856
Accommodation & Food Services	336	5.4%	$2,394	210	3.1%	$4,536
Professional, Scientific & Technical Services	155	2.5%	$14,278	170	2.5%	$16,137
Finance & Insurance	124	2.0%	$16,916	112	1.7%	$17,584
Other Services	87	1.4%	$8,180	85	1.3%	$8,041
Mining	55	0.9%	$16,801	56	0.8%	$19,014
Utilities	48	0.8%	$18,435	54	0.8%	$18,855
Agriculture, Forestry, Fishing & Hunting	49	0.8%	$8,215	33	0.5%	$12,868
Real Estate, Rental & Leasing	35	0.6%	$9,754	33	0.5%	$12,448
Arts, Entertainment & Recreation	48	0.8%	$1,972	32	0.5%	$3,314
Management of Companies & Enterprises	*****	*****	*****	31	0.5%	$13,206
Information	39	0.6%	$12,809	24	0.4%	$18,862

*****Suppressed due to confidentiality

The industry sector that employed the largest number of the noncredit students in 2023 was the health care and social assistance industry. Health care and social assistance had a gain in the number of employees (1,697 to 2,139), followed by transportation and warehousing (174 to 361). Conversely, the retail trade and accommodation and food services industries show the largest loss of employees (676 to 437 in retail and 336 to 210 in accommodation and food services) (Table 6).

The industries with the highest quarterly median wages, in the quarter following completion, with more than 100 employed, were in the finance and insurance ($17,584), manufacturing ($17,093) and public administration ($16,692) industries. Some of the quarterly median wages show a slight decrease following the completion of the program. However, this is 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).

A link to complete industry employment and wage data can be found at www.iowastudentoutcomes.com.

Employment and Wages by Contact Hours and CIP

Table 7 reflects employment and wages, by number of contact hours, for students in the AY 2021-2022 cohort who were employed in the year following graduation. For example, of the 4,031 students who enrolled in 32 to 99 contact hours of noncredit courses and exited in AY 2021-2022, 93.6 percent matched employment records, and earned a quarterly median wage of $12,100 the first year following completion. Additionally, 4.8 percent of these short-term students had earned a degree prior to enrolling in the noncredit program. Students with over 200 contact hours matched employment at a rate of 91.5 percent. Their wages, were slightly higher than students who completed shorter-term programs (32 to 99), with an adjusted quarterly median wage of $12,435.

TABLE 7. Employment, Wages and Previous Degree Earned by Contact Hour, First Quarter Following Completion, AY 2021-2022 Cohort

Size of Award	# in Cohort	# Previous Degree	% Previous Degree	# Matched to Employment	% Matched to Employment	Adjusted Quarterly Median Wage
32 to 99 Contact Hours	4,031	195	4.8%	3,775	93.6%	$12,100
100-200 Contact Hours	1,690	75	4.4%	1,559	92.2%	$10,746
Over 200 Contact Hours	1,467	67	4.6%	1,342	91.5%	$12,435

Figure 14 illustrates employment and wages by CIP for the 10 largest noncredit programs (by enrollment), consisting of 32 to 99 contact hours. The bars represent the percentage of students who matched employment within the first year following program exit, and the dots illustrate their quarterly median wage.

The highest percentage of employment (100 percent) was for those who exited from the civil engineering technology noncredit program (CIP 150201). This group earned a quarterly median wage of $18,404. The highest quarterly median wage, however, ($22,477) was for the students who exited from the occupational safety and health technology program (CIP 150701). The employment match rate the first year following exit for this group was 96.2 percent.

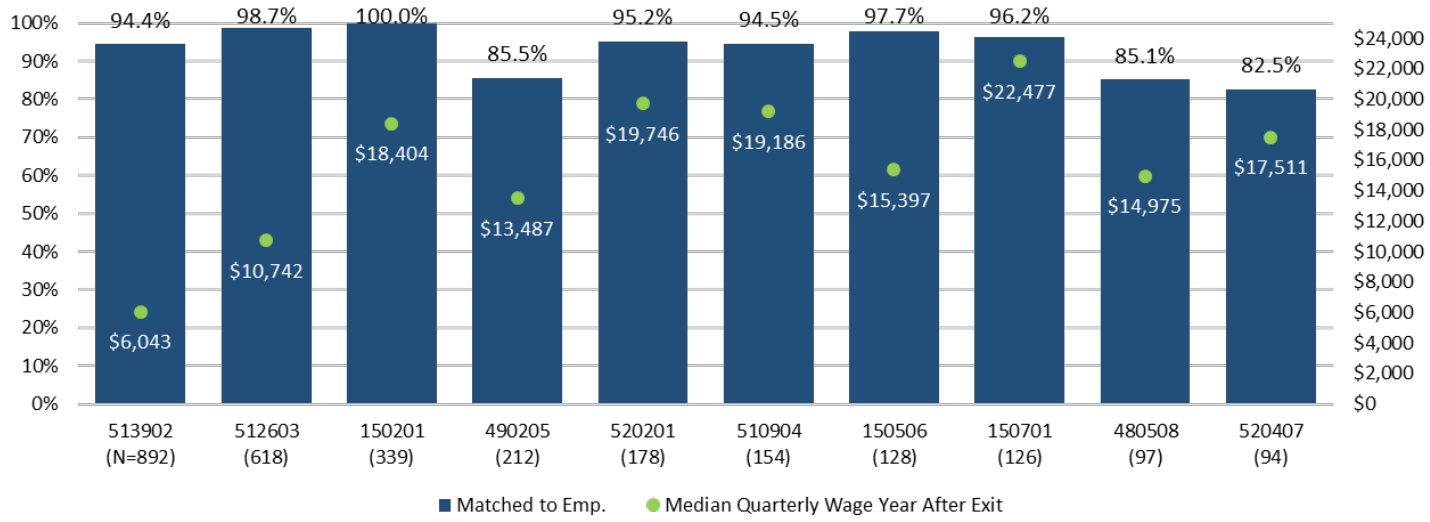
RESEARCH HIGHLIGHTS

Employment First Year Following Exit

Nearly 93 percent of individuals in noncredit programs requiring between 32 and 99 contact hours were employed the year following program completion (top 10 listed below):

- Nursing Assistant/Aide and Patient Care Assistant/Aide
- Medication Aide
- Civil Engineering Technology/Technician
- Commercial Driver's License (CDL)
- Business Administration and Management
- Emergency Medical Technology (EMT)
- Water Quality and Wastewater Treatment
- Occupational Safety and Health Technology
- Welding Technology
- Business/Office Automation Technology

FIGURE 14. Employment and Wages by Program Between 32 and 99 Contact Hours, First Year Following Exit, AY 2021-2022 Cohort



Program Legend:

513902: Nursing Assistant/Aide and Patient Care Assistant/Aide
512603: Medication Aide
150201: Civil Engineering Technology/Technician
490205: Truck and Bus Driver/Commercial Vehicle Operator
520201: Business Administration and Management
510904: Emergency Medical Technician (EMT)
150506: Water Quality and Wastewater Treatment
150701: Occupational Safety and Health Technology
480508: Welding Technology
520407: Business/Office/Technology/Data Entry

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 15 shows 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 85.7 percent for allied health and medical assisting services (CIP 510899) to 100 percent for civil engineering technology (CIP 150201), foods, nutrition and wellness studies (CIP 190501), and heating ventilation and air conditioning maintenance technology (CIP 470201). Median quarterly wages ranged from $5,372 for students who completed the nursing aid program, to $19,121 for those who completed the civil engineering technology program.

A complete listing of programs containing wage and employment data can be found at www.iowastudentoutcomes.com.

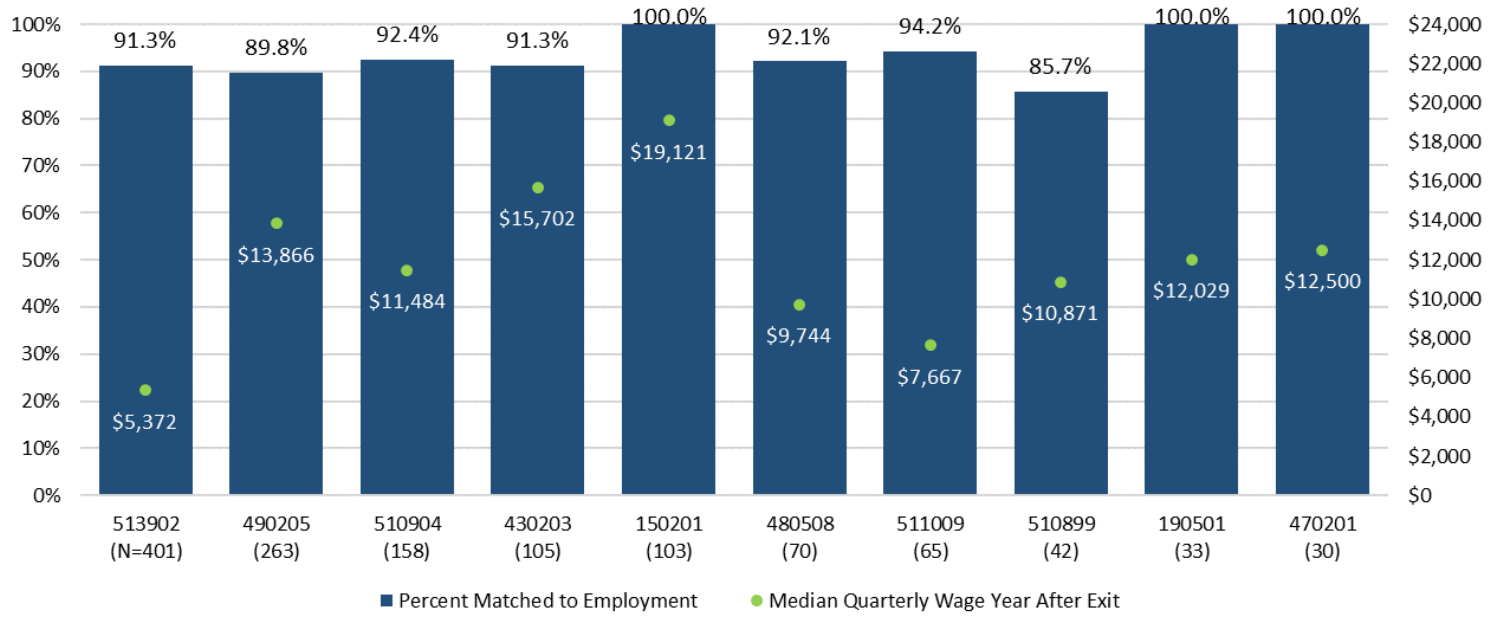
RESEARCH HIGHLIGHTS

Employment First Year Following Exit

Over 93 percent of individuals in noncredit programs requiring between 100 and 200 contact hours were employed the year following program completion. The top five programs are listed below:

- Nursing Assistant
- Emergency Medical Technology/ Technician (EMT Paramedic)
- Fire Science/Firefighting
- Civil Engineering Technologies
- Phlebotomy Technology
- Foods, Nutrition and Wellness Studies
- HVAC Maintenance Technology

FIGURE 15. Employment and Wages by Program Between 100 and 200 Contact Hours, First Year Following Exit, AY 2021-2022 Cohort



Program Legend:

513902: Nursing Assistant/Aide and Patient Care Assistant/Aide
490205: Truck and Bus Driver/Comm. Vehicle Operator/Instructor
510904: Emergency Medical Technology (EMT Paramedic)
430203: Fire Science/Firefighting
150201: Civil Engineering Technologies/Technician
480508: Welding Technology/Welder
511009: Phlebotomy Technician/Phlebotomist
510899: Allied Health and Medical assisting Services
190501: Foods, Nutrition and Wellness Studies
470201: HVAC Maintenance Technology/Technicians

A sample of programs consisting of 200 or more contact hours are illustrated in Figure 16. The employment percentage for students who exited the electrical/electronic equipment installation/repair program (CIP 470101) and the foods, nutrition, and wellness program (190501), were the highest, at 100 percent. The highest quarterly median wage of $17,210 was earned by students who exited from the precision metal working program (480599).

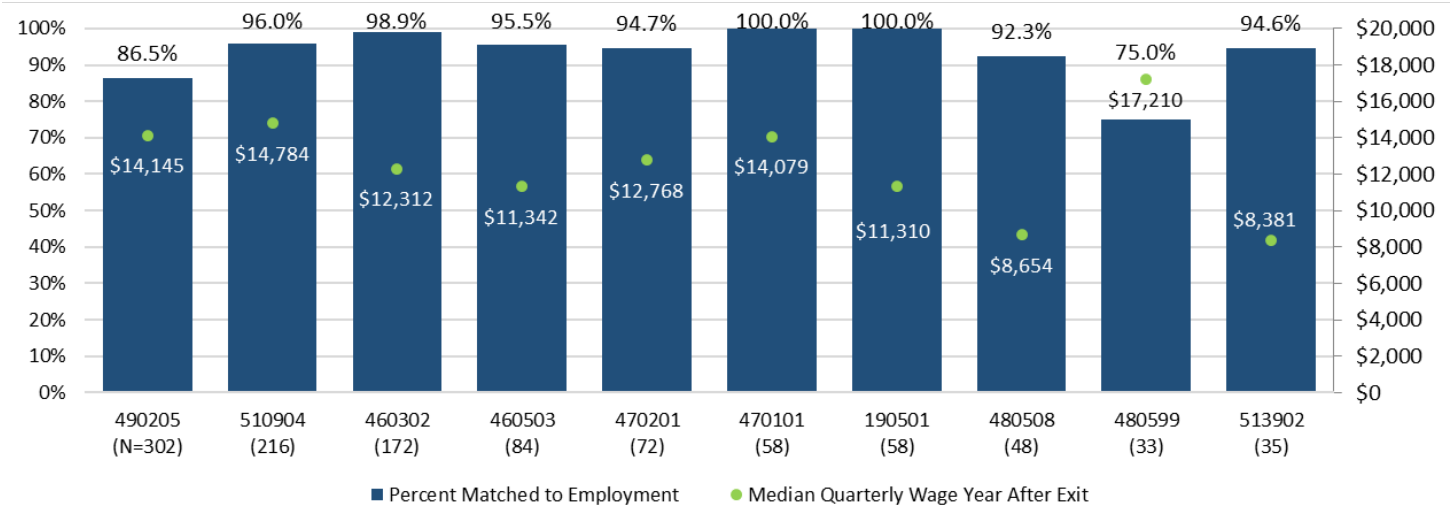
RESEARCH HIGHLIGHTS

Employment First Year Following Exit

More than 91 percent of individuals in noncredit programs requiring more than 200 contact hours were employed the year following program completion. The top five programs are listed below:

- Truck and Bus Driver (CDL)
- Emergency Medical Technology/Technician (EMT Paramedic)
- Electrician
- Plumbing Technology
- HVAC Maintenance Technology

FIGURE 16. Employment and Wages by Program Over 200 Contact Hours, First Year Following Exit, AY 2021-2022 Cohort



Program Legend:

490205: Truck and Bus Driver/Comm. Vehicle Operator/Instructor
510904: Emergency Medical Technology/Technician (EMT)
460302: Electrician
460503: Plumbing Technology/Plumber
470201: HVAC/Refrigeration Maintenance
470101: Electrical/Electronics Equipment Installation/Repair
190501: Foods, Nutrition and Wellness Studies
480508: Welding Technology/Welder
480599: Precision Metal Working
513902: Nursing Assistant/Aide and Patient Care Assistant

Career Clusters

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 occupation-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 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 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, AY 2021-2022

Noncredit Cluster	Credit Cluster																
AY 2021-2022	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total
1 - Agriculture, Food & Natural Resources	4	-	-	3	2	-	-	-	-	-	-	-	-	-	-	-	9
2 - Architecture & Construction	-	5	1	3	4	-	-	-	-	-	2	-	-	-	7	-	22
3 - Arts, Audio/Video Technology & Communications	-	-	3	-	2	-	-	-	-	1	-	-	-	-	1	-	7
4 - Business Management & Administration	1	2	3	8	5	3	-	2	-	4	2	1	-	-	-	-	31
5 - Education & Training	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	4
6 - Finance	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	2
7 - Government & Public Administration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 - Health Science	2	-	2	19	145	2	4	188	-	22	1	6	1	1	50	2	445
9 - Hospitality & Tourism	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	3
10 - Human Services	-	-	-	1	2	-	-	3	1	-	-	-	-	-	1	-	8
11 - Information Technology	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
12 - Law, Public Safety, Corrections & Security	-	-	-	-	-	-	-	2	-	-	-	-	-	-	1	-	3
13 - Manufacturing	1	3	2	4	6	-	1	1	-	2	-	-	6	-	18	-	44
14 - Marketing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 - Science, Technology, Engineering, & Math*	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	2
16 - Transportation, Distribution & Logistics	1	-	2	2	7	3	-	3	-	-	-	-	2	-	1	4	25
Total	9	10	13	41	182	9	5	199	1	29	5	8	9	1	79	6	606

*No match to credit cluster year following completion

Table 8 illustrates the number of students in noncredit programs by career cluster (indicated by number) for the AY 2021-2022 cohort, and their 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 (445) and 199 (44.7 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 education and training (145).

One notable limitation to identifying the path to a credit program is that a number of colleges 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, and are therefore unknown. Of the 1,399 students enrolled in credit-bearing programs the year following completion of the noncredit program, 783 did not have a record that contained CIP data for the credit program. These students are not included in Table 8.

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

Transition into the Workforce – Cluster to Industry

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 17 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 18, on the next page, illustrates the relationship between career clusters and industry sectors for the AY 2021-2022 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 18, resulting in less ribbons.

Another important limitation to consider is that these 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 18.

FIGURE 17. Circos Visualizations

Career Cluster

Agriculture, Food, and Natural Resources

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

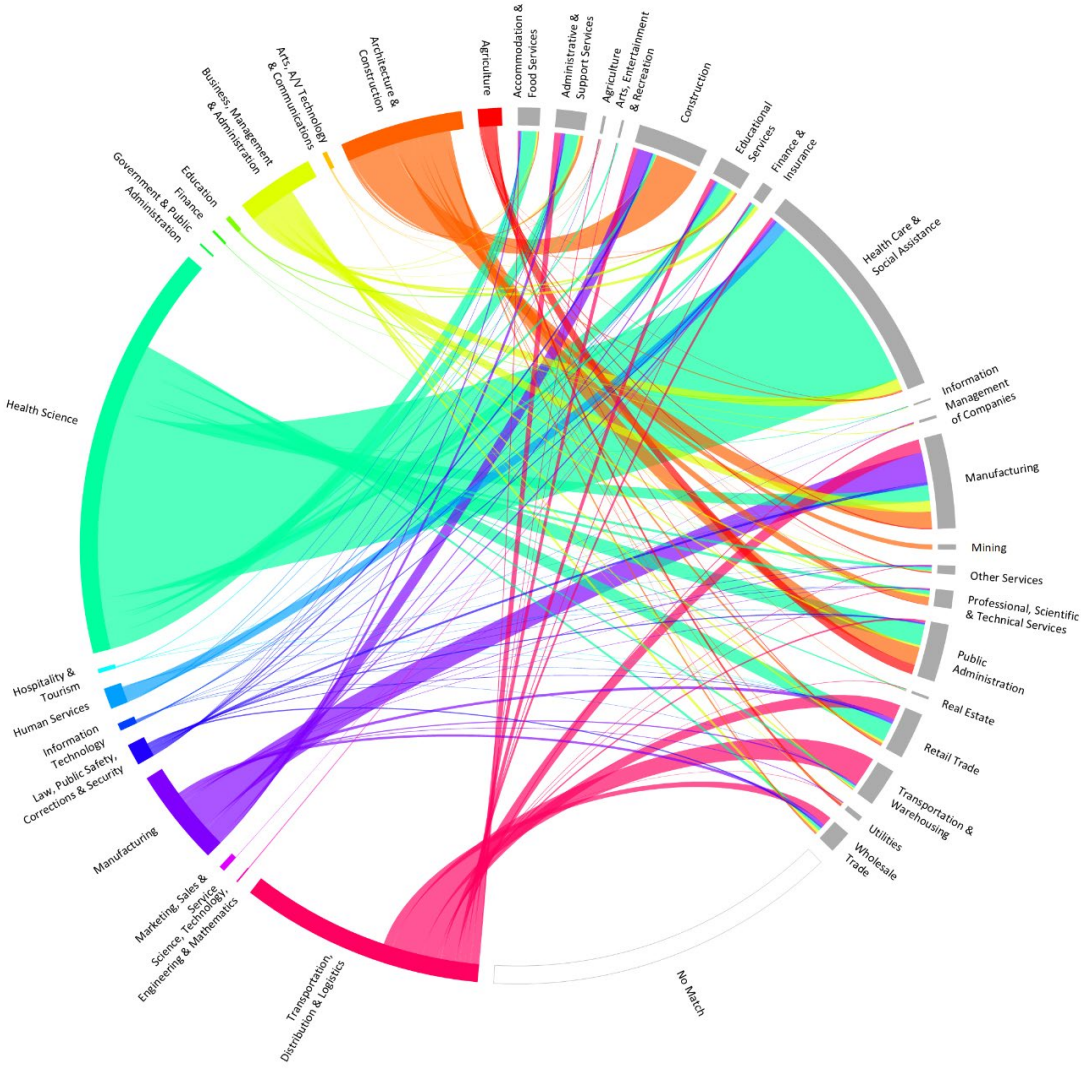
Public Administration

Real Estate, Rental and Leasing Retail Trade

Transportation and Warehousing

Utilities

FIGURE 18. Cluster to Industry Mapping for AY 2021-2022 Noncredit Exiters



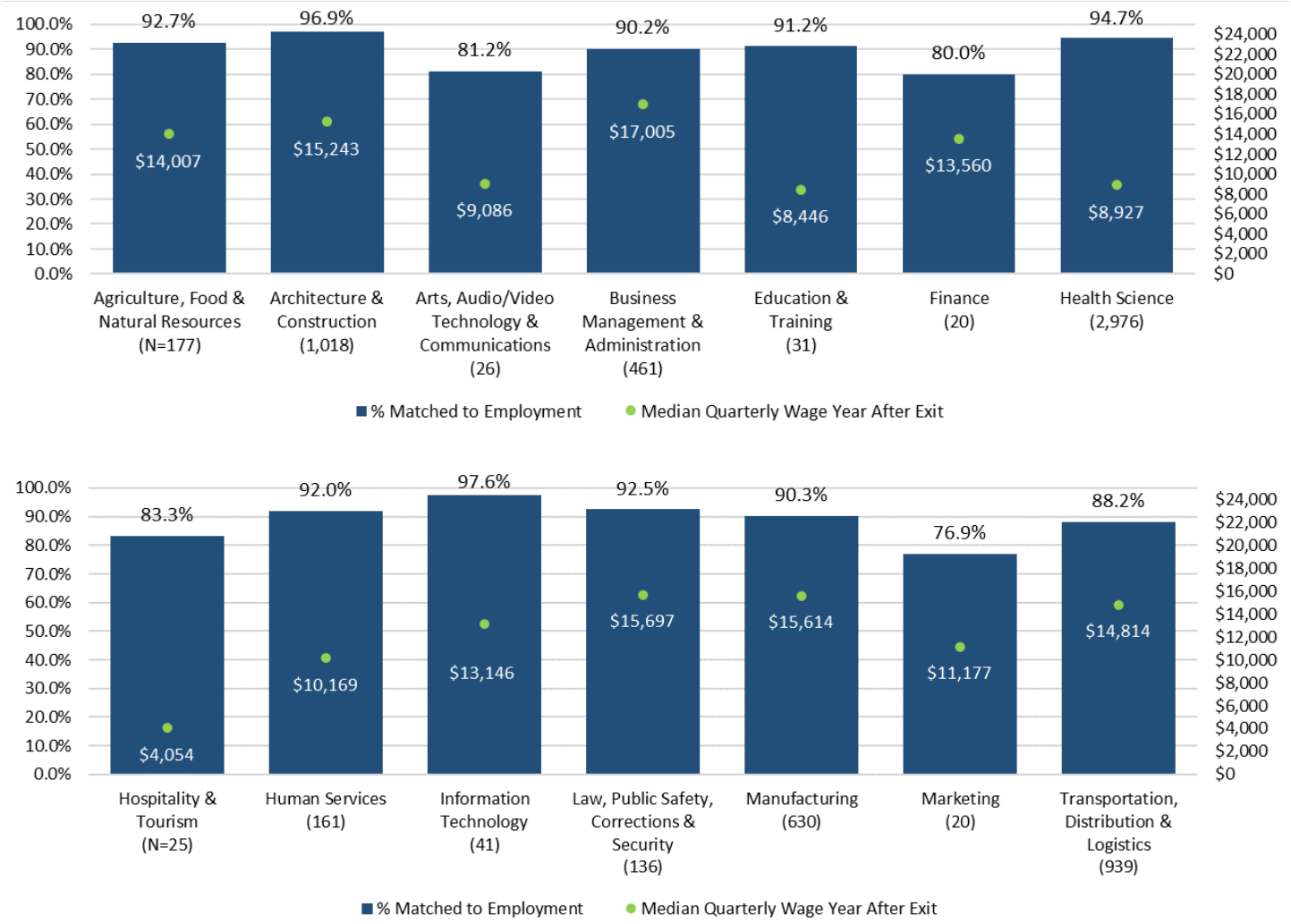
Note: Ribbons representing cells that are suppressed in the data are not shown in this visualization.

Employment by Career Cluster

Figure 19 illustrates employment and wage outcomes for AY 2021-2022 noncredit students, by career cluster, in the first year following exit (2022). The 12 exiters in the arts, audio/video technology and communications cluster had the highest employment match rate, at 100 percent, and earned a median quarterly wage of $11,737. The next highest employment percentage was achieved by the students in the architecture and construction career cluster (96.0 percent), who earned a median quarterly wage of $14,841. In the most popular cluster, health science, 94.2 percent of the 3,092 exiters matched employment, and earned a quarterly median wage of $8,058.

Since not all employers pay UI taxes due to their employer status, lower rates for matching employment can occur due to the limitations of UI wage data, whereas records matched stem from employers who pay UI tax. More specifics on UI wage records can be found in the methodology section of this report.

FIGURE 19. Employment and Wages by Career Cluster, First Year Following Exit, AY 2021-2022 Cohort



Methodology and Research Limitations

Noncredit Cohort Formation

1. Cohort: Iowa Community College Management Information Systems (MIS) database of Noncredit Enrollments for AY 2021-2022: The latest available data were used allowing for at least 12 months past enrollment to track 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): Research was limited to students with valid SSNs, first and last names and DOBs, since tracking students into the workforce requires SSNs, and tracking students into further education requires names and DOBs as data elements.

3. Identify CTE enrollees: CTE enrollees were identified utilizing data codes for Career/Vocational Training and Upgrading and Economic Development programs with National Center for Educational Statistics CIP codes 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. It allows for justified comparability of the value of noncredit CTE education to corresponding credit CTE education, thus providing comparable material for measuring educational and employment outcomes. The same logic is used in the MIS data reporting manual and, subsequently, for data reporting to third parties (i.e., 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 (i.e., 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 enrollment CIP codes obtained from external sources (i.e., NSC, for previous, concurrent or subsequent credit enrollments), a method of random CIP number selection has been applied.

2. Age: The report uses "under 25" and "25 and older" categories based on each student's age as of the middle of the AY 2021-2022 (January 1, 2022) year.

3. Correctional Facilities: MIS data codes to establish whether a noncredit student was enrolled while in a correctional facility.

4. Previously Received Credit Award: Utilizing 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, preceding and consecutive credit and noncredit enrollments were explored based on a full preceding or following academic year, regardless of the length of noncredit enrollments within the cohort year.

Employment and Wage Records

1. All wages for this report originate either from the Iowa UI wage database or the SWIS network of state UI wage databases.

2. Use of the SWIS database for program evaluation purposes is limited. Allowable uses include obtaining data on out-of-state wages during the second quarter after exiting a program, and status of employment for the second and fourth quarter after exit. For more information, see https://www.dol.gov/agencies/eta/performance/performance-indicators#WIOA%20PIP

3. 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 the third quarter of 2022 (Q3) (July 2022 through September 2022) levels (in order to make longitudinal comparisons more legitimate using the Consumer Price Index (CPI), 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 (2022Q3), 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).

4. 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). UI wage records do not cover 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.

5. All wage estimates in the report include ALL wages in the UI wage database for that person in the AY2021-22 cohort. Each individual is associated with just one industry sector and state in each time period. That assignment is based on the industry sector and state of the employer with whom they earned the most wages during the defined time period. 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 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.

6. Median wages are used in this report, rather than average wages, to mitigate the effect of outliers. Wage distributions are typically right-skewed, 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).

7. To protect individual identities, some cells in this report are suppressed due to small cell size using the following rules:
    a. Suppress the cell if the number of employed individuals in the cell is less than three.
    b. 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).
    c. 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 detailed data tables used for this and previous reports, which can be accessed at: https://www.iowastudentoutcomes.com/college_program_outcomes_new