

Minnesota

DEPARTMENT OF EMPLOYMENT AND ECONOMIC DEVELOPMENT

How to use the College Major to Industry tool to help customers navigate postsecondary training options

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Plan for today

- Introduction:
 - How are postsecondary programs and credentials measured?
 - What defines a successful outcome?
 - How to interpret the connections between fields of study, occupations, and industries?
- Demonstrate the uses of the ***College Major to Industry of Employment*** tool to answer key questions
- Q & A

How are credentials defined?

credit versus non-credit

For-credit postsecondary programs

lead to the following academic awards:

Sub-bachelor programs less than 1 academic year (1-29 credits)

Sub-bachelor programs at least 1, but less than 2 academic years (30-59 credits)

Sub-bachelor programs at least 2, but less than 4 academic years (60 credits or more)

Associate's Degree

Bachelor's Degree

Post-baccalaureate Certificate

Master's Degree

Post-Master's Certificate

Doctor's Degree



Currently included in DEED tools

Non-credit programs

- Lead to a certificate of completion without earning academic credit
- Short-term (24 weeks or less) aimed at gaining specialized skills.
Example: American Red Cross Nurse Assistant training
Data collection is under way, in partnership with OHE, for ETPL reporting purposes
- High school Career and Technical Education (CTE) program outcomes also to be added soon



To be added to DEED tools

The credentialing puzzle



Minnesota

How are fields of study defined?

CIP (Classification of Instructional Programs)

Level of detail	Fields of study (example)
two-digit series	46 CONSTRUCTION
four-digit series	46.03 Electrical and Power Transmission Installers 46.04 Construction Finishing, Management, and Inspection 46.05 Plumbing and Related Water Supply Services
six-digit series (sometimes referred to as majors)	46.0302) Electrician 46.0303) Lineworker 46.0408) Painting/Painter 46.0410) Roofer 46.0412) Building/Construction Site Management 46.0413) Carpet, Floor, and Tile Worker 46.0502) Pipefitting/Pipefitter and Sprinkler Fitter 46.0503) Plumbing Technology/Plumber

Source: National Center for Education Statistics (NCES)

<https://nces.ed.gov/ipeds/cipcode/cipdetail.aspx?y=55&cip=46>

What defines a successful outcome for program participants and for the economy as a whole?

- Earnings post-graduation are above, or at, the family sustaining wage;
- Earnings growth over time demonstrates career advancement;
- Employment in related industries (the pipeline is not leaking);
- Employment increasingly fulltime (job stability);
- Employment in the same region of schooling (local retention)

Data Sources:

Postsecondary completion records merged with Unemployment Insurance Wage records at the individual level. Results are updated annually.



Multiple definitions of success = three DEED tools

Graduate Employment Outcomes (GEO):

Earnings over time by school and program at the 4-digit CIP level (250 fields of study); employment by industry and geography

***What are the typical hourly earnings 7 years after completion? Annual earnings?
What are the probabilities of finding a job in the region of schooling?***

College Major To Industry of Employment:

Hourly wages by program at the 6-digit CIP level (405 fields of study); industry detail

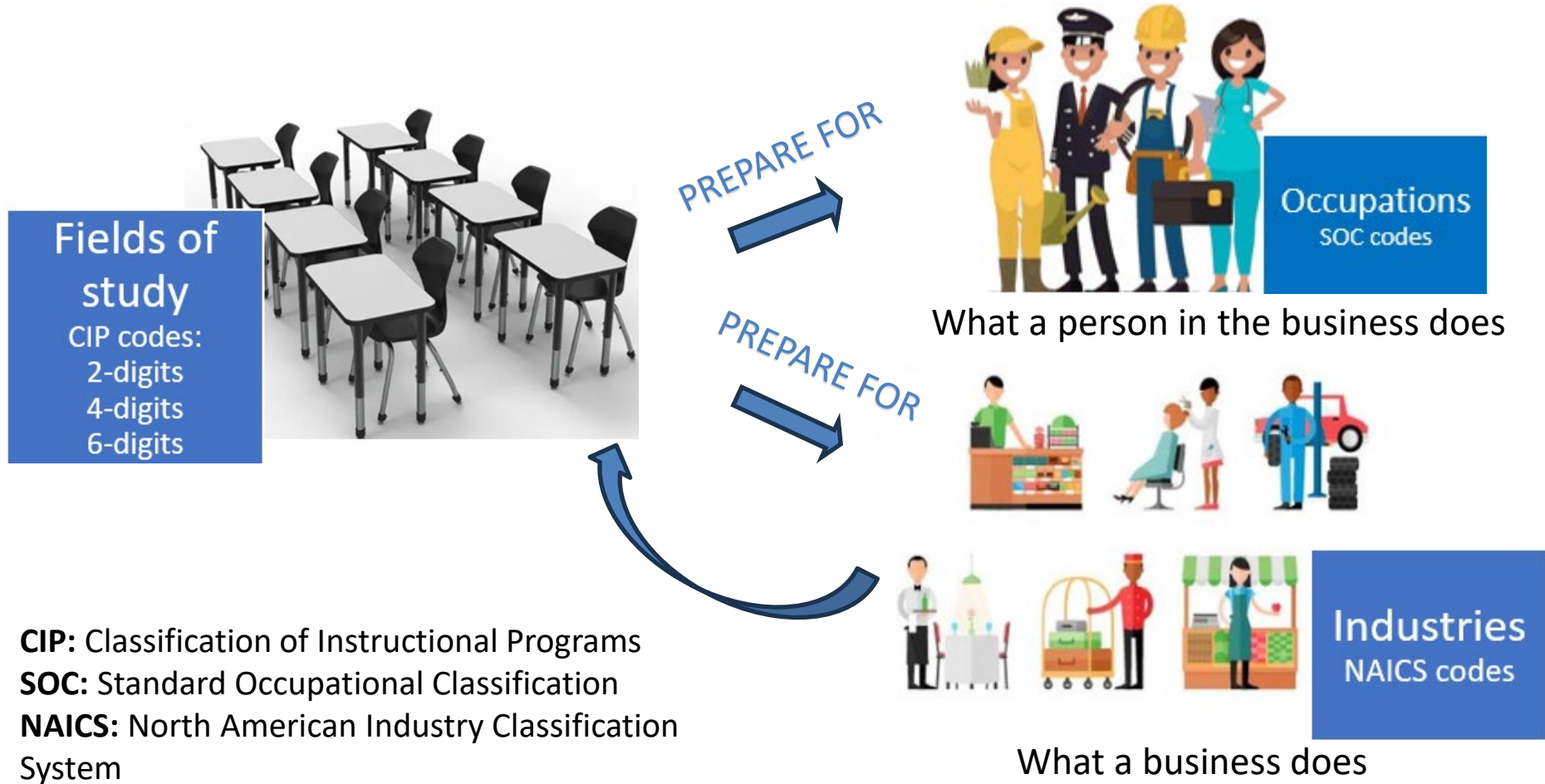
What types of businesses employ workers with certain credentials? How do wages vary by industry?

Occupations In Demand (OID):

No educational program outcomes; easy way of connecting occupations to 6-digit CIP codes; inventory of training programs currently offered in each region

Is there demand for my career of interest? What training is typically required and which training programs exist in my region?

Paths from educational programs to careers and industries



College Major to Industry of Employment tool

<https://mn.gov/deed/data/data-tools/college-major-tool/>

Example: Certificate programs in Child Care Provider

1. Field of Study (Select One)

- (All)
- Agriculture/agric. operations & sciences
- Architecture & related services
- Area, ethnic, cultural & gender studies
- Biological/biomedical sciences
- Business/management/marketing
- Communication, journalism & related
- Communications technologies/technicia...
- Computer & information sciences

2. Majors (Select One or More)

- (All)
- Child Care Provider/Assistant
- Early Childhood Education and Teaching

Filter by Degree

- Total, All Education Levels
- Certificates below Bachelor's
- Associate degree
- Bachelor's
- Graduate degrees/certificates

Search a Program/Major by Keyword

Wage across industries

Program/ Major	Industry	Median Wage	Percent Employed in Industry (hover over the bar to see additional details)
Child Care Provider/Assistant	Total, All Industries	\$17.02	100%
	Social Assistance (childcare & community centers, elderly car..	\$16.96	35%
	Elementary & Secondary Schools	\$16.35	21%

Tooltip appears when hovering over the bars, displaying the occupation the program prepares for

Percent graduates working in the industry: 35%
 Number working in the industry: 50
 Occupations the program might prepare for: Childcare Workers



Program's strengths and weaknesses

- Overall earnings post-graduation (entry-level) are below the family sustaining wage; ❌
- The size of the program/pipeline is tiny (141 in total); ❌
- Employment predominantly in related industries (social assistance and elementary schools), indicating good alignment; ✅
- Wages in related industries are low, indicating low rewards for postsecondary credentials ❌

Certificate programs in Nursing Assistant/PCA

College Major To Industry of Employment (3 Years After Graduation)



1. Field of Study (Select One)

- Health professions & related
- History
- Homeland security, law enforcement, ...
- Legal professions & studies
- Liberal arts & general studies
- Library science
- Mathematics & statistics

2. Majors (Select One or More)

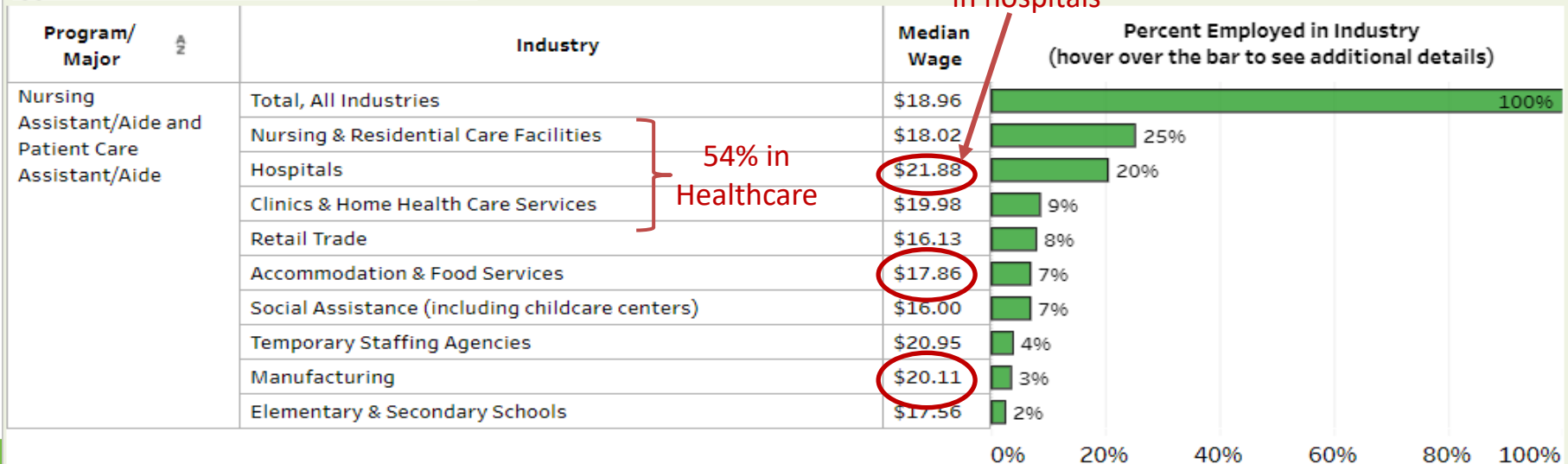
- Nursing Assistant/Aide and Patient Care Assistant/Aide
- Orthotist/Prosthetist
- Pharmacy Technician/Assistant
- Phlebotomy Technician/Phlebotomist
- Sterile Processing Technology/Technician
- Substance Abuse/Addiction Counseling
- Surgical Technology/Technologist

Filter by Degree





- Total, All Education Levels
- Certificates below Bachelor's
- Associate degree
- Bachelor's
- Graduate degrees/certificates

Search a Program/Major by Keyword

Wages are highest in hospitals

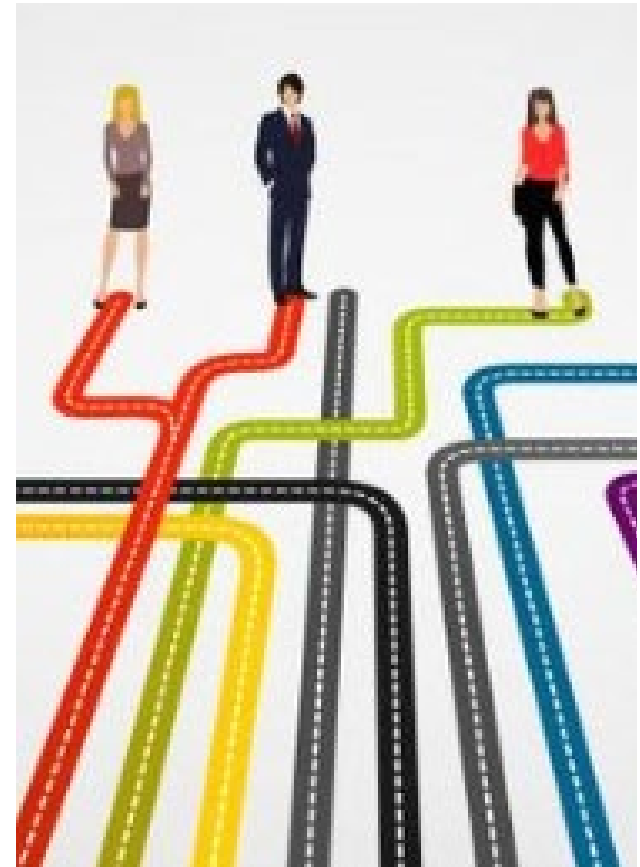


Program's strengths and weaknesses

- Overall earnings post-graduation are below the family sustaining wage; 
- Employment predominantly in related industries (healthcare); 
- Wages are highest in hospitals, suggesting career ladders and/or opportunities for further education leading to LPN license, 
- Pipeline is partially leaking due to low wages  (competition for labor from outside healthcare)

Related employment

- Does the program improve my chances of finding a job in the industries for which I prepared?
 - Are nurses finding jobs in Healthcare? Are teachers finding jobs in schools?
- Are there differences in wages earned by industry?
 - Wages in each industry are a good gauge for whether graduates enter related careers. They can also signal the presence of unique career pathways in some industries



Graduate Employment Outcomes (GEO) tool

<http://mn.gov/deed/geo>

Tab 1: Hourly wages over time and industry of employment

Tab 2: Annual wages and fulltime employment over time

Pop-up charts: industries and regions of employment

Hourly Wage Trend | **Annual Wage and Employment** | Employment Status

You Selected: July 2015-June 2016, Minnesota Statewide, All Institution Types, All Schools, All Awards Download These Results in Excel

View Detail	CIP	Instructional Program	First 3 months of:						
			Second year after graduation		Third year after graduation		Fifth year after graduation	Eighth year after graduation	
			Graduates	Median Hourly Wage	Median Hourly Wage	Top Industry Of Employment	Top Region Of Employment	Median Hourly Wage	Median Hourly Wage
+	01	Agriculture, agriculture operations, and related sciences	1,076	\$21.47	\$22.82	Professional and Technical Services	Twin Cities	\$26.26	\$30.03
+	04	Architecture and related services	254	\$25.09	\$27.58	Professional and Technical Services	Twin Cities	\$30.61	\$38.64
+	05	Area, ethnic, cultural, gender, and group studies	214	\$20.11	\$20.81	Public Administration	Twin Cities	\$24.95	\$30.20
+	26	Biological and biomedical sciences	2,776	\$19.70					
+	52	Business, management, marketing, and related support services	12,587	\$27.02					
		Communication, journalism, and related programs	1,564	\$20.55					
		Communications technologies/technicians and support services	232	\$16.52					
		Computer and information sciences and support services	2,637	\$31.25					
		Construction trades	1,047	\$23.26					
		Education	6,744	\$32.84					
		Engineering	2,151	\$34.72					
+	15	Engineering technologies and engineering-related fields	1,376	\$26.22					
+	23	English language and literature/letters	1,184	\$20.37					
+	19	Family and consumer sciences/human sciences	616	\$18.19					
+	16	Foreign languages, literatures, and linguistics	529	\$20.89					
+	51	Health professions and related programs	16,664	\$27.40					

Fields of study (CIP codes) at the 2-digit and 4-digit

Top 7 Industries of Employment 24 Months After Graduation
Instructional program: Agriculture, agriculture operations, and related sciences

Industry	Percentage	Median Wage
Professional and Technical Services	17.6%	\$35.57
Wholesale Trade	12.8%	\$24.28
Education except Elem. and Secondary Schools	9.7%	\$23.75
Agriculture, Forestry, Fishing & Hunting	9.5%	\$21.35
Manufacturing	8%	\$24.90
Retail Trade	7.1%	\$16.37
Management of Companies and Enterprises	4.5%	\$31.14

Percentages are based on 1,458 employed graduates from school years 2015, 2016, 2017. Missing data bars indicate suppressions.

What if I want to search for a training program by occupation?

Fields of
study

CIP codes:
2-digits
4-digits
6-digits



CROSSWALK



Occupations
SOC codes

Occupations in Demand (OID) tool

Occupations In Demand

[Start New Search](#)
[Export 3 thru 5 star results](#)
[Export 1 thru 5 star results](#)

This is a ranking of occupations in demand in the selected region. Long-term growth rate and projections are included for comparison but may differ from current demand because of projected changes in the labor market. Click Education Requirements for job training information.

To further refine these results use the filters below:

Wage Range (median)

 Education Category

 Job Title Keyword Search

[Get Filtered Results](#)
[Reset Search Filters](#)

Minnesota
[Show only 3 thru 5 Star Occupations in Results](#)

Results: 527

SOC Code	Job Title	Current Demand Rank	Current Demand Indicator	25th Percentile Wage	Median Wage	Projected 10-year Growth Rate	Projected 10-year Openings	Education Requirements	On-the-job Training Requirements
	?	?	?	?	?	?	?	?	?
412031	Retail Salespersons	1	★★★★★	\$19,860/yr	\$22,610/yr	5.6%	35,300	Less than high school	Short term on the job training
291141	Registered Nurses	2	★★★★★	\$59,908/yr	\$75,401/yr	11.8%	20,110	Associate's degree	None
311014	Nursing Assistants	3	★★★★★	\$26,192/yr	\$30,712/yr	8.2%	9,180	Postsecondary non-degree award	None
533032	Heavy and Tractor-Trailer Truck Drivers	4	★★★★★	\$36,579/yr	\$44,250/yr	4%	7,920	High school diploma or equivalent	Short term on the job training
399021	Personal Care Aides	5	★★★★★	\$22,228/yr	\$24,313/yr	25.8%	21,700	Less than high school	Short term on the job training

Education requirements









Hyperlinks leading to an inventory of programs that prepare for this occupation

Training program pages in the OID tool

https://apps.deed.state.mn.us/lmi/oid/CIP_SchoolDetail.aspx?id=533032&geog=2701000000

Below are schools offering programs related to Heavy and Tractor-Trailer Truck Drivers

Click a column title to sort information by that title.
Click the underlined school name to enter the school's official web site.

<u>CIP Code and Title</u>	<u>School Name</u>	<u>Location</u>	<u>Program Title</u>	<u>Award Levels Offered</u>	<u>Program Length</u>
490205 Truck and Bus Driver/Commercial Vehicle Operator and Instructor.	<u>160 Driving Academy.</u>	Eagan - MN	Class A CDL Training 	Non-Credit	1 term (15 weeks) or less
490205 Truck and Bus Driver/Commercial Vehicle Operator and Instructor.	<u>160 Driving Academy.</u>	St. Cloud - MN	Class A CDL Training 	Non-Credit	1 term (15 weeks) or less
490205 Truck and Bus Driver/Commercial Vehicle Operator and Instructor.	<u>160 Driving Academy.</u>	Rochester - MN	Class A CDL Training 	Non-Credit	1 term (15 weeks) or less
490205 Truck and Bus Driver/Commercial Vehicle Operator and Instructor.	<u>160 Driving Academy.</u>	Eagan - MN	Class A CDL Training 	Non-Credit	1 term (15 weeks) or less
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490205 Truck and Bus Driver/Commercial Vehicle Operator and Instructor.	<u>160 Driving Academy.</u>	Rochester - MN	Class A CDL Training 	Non-Credit	1 term (15 weeks) or less
490205 Truck and Bus Driver/Commercial Vehicle Operator and Instructor.	<u>Alexandria Technical & Community College.</u>	Alexandria - MN	Professional Truck Driver 	Sub-bachelor's award 1-29 credits	More than 1 term but less than 1 year
490205 Truck and Bus Driver/Commercial Vehicle Operator and Instructor.	<u>Alexandria Technical & Community College.</u>	Alexandria - MN	Professional Truck Driver - B-CDL 	Sub-bachelor's award 1-29 credits	More than 1 term but less than 1 year

CIP code (6-digit) useful to refer back to the GEO and College Major to Industry tools

Detailed title of the program as advertised in schools' catalogues

Both credit and non-credit

Summary of tools and related research

College Major to Industry of Employment (CMI)

<https://mn.gov/deed/data/data-tools/college-major-tool/>

Graduate Employment Outcomes (GEO)

<https://apps.deed.state.mn.us/lmi/etd/Results.aspx>

Occupations In Demand (OID)

https://apps.deed.state.mn.us/lmi/oid/Results_9Columns.aspx

For guidance on using and interpreting the CMI tool:

Leibert, A., *From College Major to Industry of Employment*

<https://mn.gov/deed/newscenter/publications/trends/march-2024/college-major.jsp>

Useful study on industry pathways:

Leibert, A., *Geographic and Industry Mobility of New Nursing Grads*

<https://mn.gov/deed/newscenter/publications/review/january-2014/nursing-grads.jsp>

Thank you!

Questions? Suggestions?

Contact me: Alessia.Luibert@state.mn.us



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