

*Minnesota*

DEPARTMENT OF EMPLOYMENT AND ECONOMIC DEVELOPMENT

# How to use the College Major to Industry and other DEED tools to help customers navigate postsecondary training options

Oct 23, 2024

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# Plan for today

- Introduction:
  - What is a training credential?
  - What is a field of study?
- Overview of three online tools developed by DEED to answer key questions to help your clients
- 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'S 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

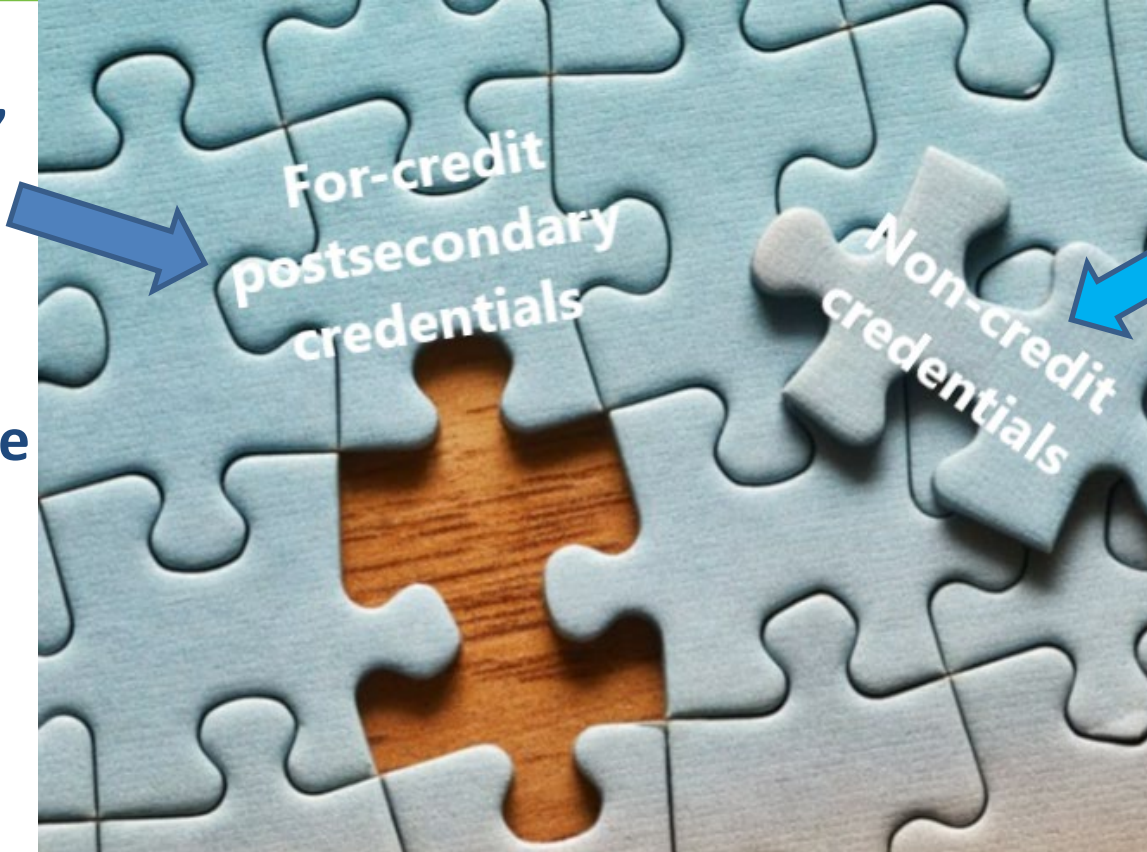
Data collection is under way, in partnership with OHE, for ETPL (Eligible Training Providers List) reporting under WIOA



To be added to DEED'S tools

# The credentialing puzzle

Participants' outcomes already accessible on DEED's site



Participants' outcomes soon to be added to DEED's site

Still missing: apprenticeships data; occupational licensing data

# Paths from educational programs to careers and industries

Fields of study  
CIP codes:



PREPARE FOR



What a *person in the business* does

PREPARE FOR



(MEASURABLE)



What a *business* does

**CIP:** Classification of Instructional Programs  
**SOC:** Standard Occupational Classification  
**NAICS:** North American Industry Classification System

# Multiple definitions of successful outcome for training programs = three DEED tools

## Graduate Employment Outcomes (GEO):

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

*What are the typical hourly earnings from 2 to 7 years after completion?*

*What are the probabilities of finding a job in a given industry or region?*

## College Major To Industry of Employment:

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

*What types of businesses employ workers with certain credentials?*

*How do wages vary by industry?*

## Occupations In Demand (OID):

No educational program outcomes; inventory of training programs currently offered in each region

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

# How are fields of study and majors defined?

## CIP (Classification of Instructional Programs)

Level of detail	Hierarchy of Program Topics (example within Construction)
two-digit roll-up	46 CONSTRUCTION
four-digit rollup	46.03 Electrical and Power Transmission Installers 46.04 Construction Finishing, Management, and Inspection 46.05 Plumbing and Related Water Supply Services
six-digit  (sometimes referred to as <b>majors</b> )	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>

# College Major to Industry of Employment tool: Connecting Majors to Industries and Occupations

### 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

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%
	<u>Social Assistance</u> (childcare & community centers, elderly car..	\$16.96	35%
	<u>Elementary &amp; Secondary Schools</u>	\$16.35	21%

Hovering over the bars, a tooltip appears with the **occupation** associated with this program:

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





# 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

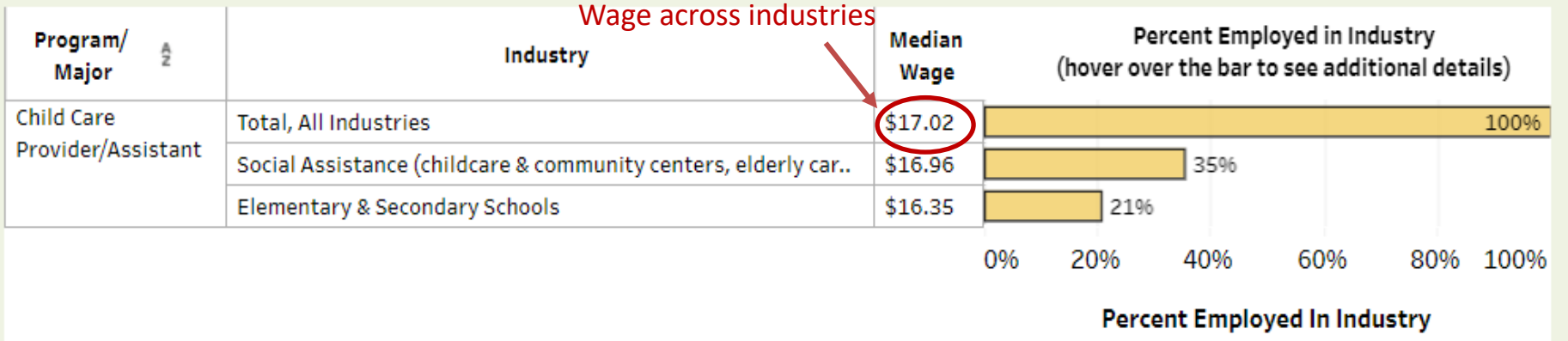
### Filter by Degree

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




Search a Program/Major by Keyword

Select a credential level

Wage across industries



# Program's strengths and weaknesses

- Overall earnings post-graduation (entry-level) are below the family sustaining wage; 
- 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

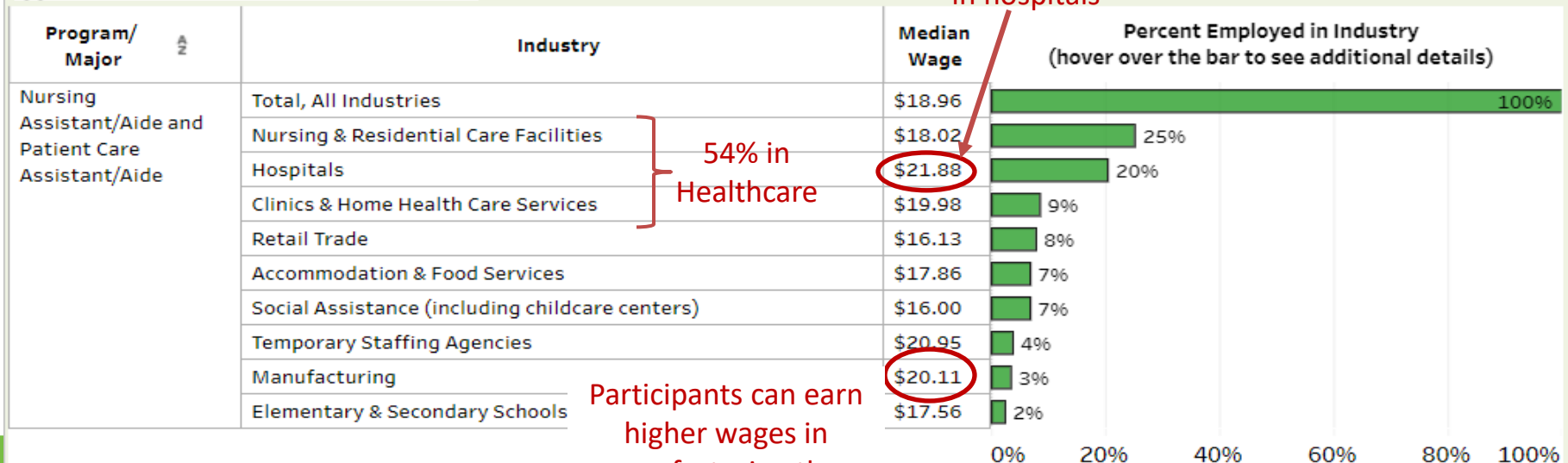
### 2. Majors (Select One or More)

- 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

54% in Healthcare

Participants can earn higher wages in manufacturing than in some healthcare sectors

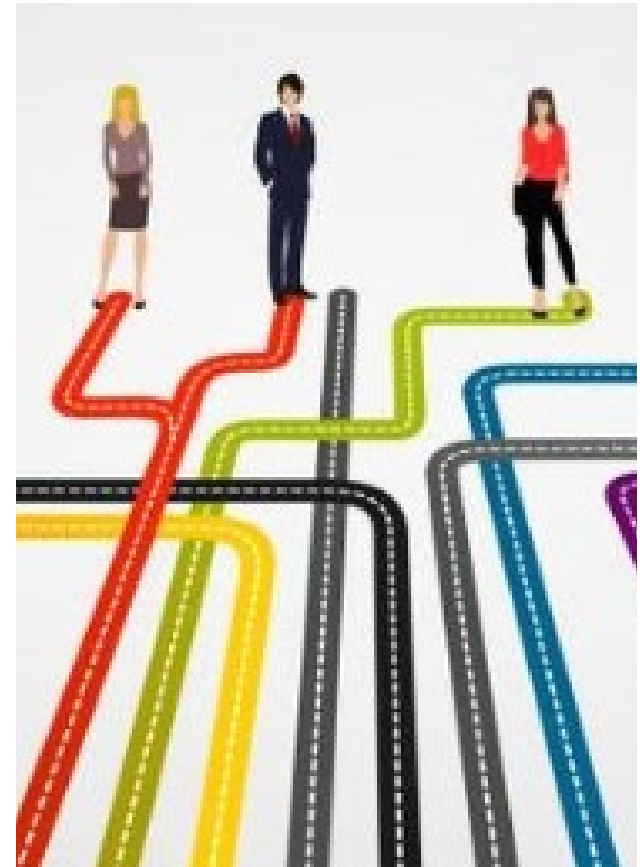


# Program's strengths and weaknesses

- 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 training potentially leading to an LPN license; 
- Pipeline is partially leaking due to low wages  (competition for labor from outside healthcare)

# Related employment: How can we tell?

- 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 by industry are a good gauge for whether graduates enter related careers. They can also signal the presence of promising 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	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:



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](#)

Education requirements

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

**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
	<a href="#">?</a>	<a href="#">?</a>	<a href="#">?</a>	<a href="#">?</a>	<a href="#">?</a>	<a href="#">?</a>	<a href="#">?</a>	<a href="#">?</a>	<a href="#">?</a>
412031	<a href="#">Retail Salespersons</a>	1	★★★★★	\$19,860/yr	\$22,610/yr	5.6%	35,300	<a href="#">Less than high school</a>	Short term on the job training
291141	<a href="#">Registered Nurses</a>	2	★★★★★	\$59,908/yr	\$75,401/yr	11.8%	20,110	<a href="#">Associate's degree</a>	None
311014	<a href="#">Nursing Assistants</a>	3	★★★★★	\$26,192/yr	\$30,712/yr	8.2%	9,180	<a href="#">Postsecondary non-degree award</a>	None
533032	<a href="#">Heavy and Tractor-Trailer Truck Drivers</a>	4	★★★★★	\$36,579/yr	\$44,250/yr	4%	7,920	<a href="#">High school diploma or equivalent</a>	Short term on the job training
399021	<a href="#">Personal Care Aides</a>	5	★★★★★	\$22,228/yr	\$24,313/yr	25.8%	21,700	<a href="#">Less than high school</a>	Short term on the job training











# Training program pages in the OID tool

[https://apps.deed.state.mn.us/lmi/oid/CIP\\_SchoolDetail.aspx?id=533032&geog=2701000000](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 &amp; 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 &amp; 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**  
(useful to look up outcomes in 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](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>

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Thank you!

Questions? Suggestions?

Contact me: [Alessia.Leibert@state.mn.us](mailto:Alessia.Leibert@state.mn.us)



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