

# K-12 Industry Credential Analysis: Ohio

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# Industry credentials in K-12

What trends are we seeing? What do we know?

States are increasingly focused on industry credentials as a means of signaling that students possess important career readiness skills.

A 2020 survey of states revealed that:

- 35 maintain an approved credential list;
- 31 include credentials in accountability systems (ESSA, Perkins V, and/or state accountability);
- 14 include credentials as part of a graduation requirement or special designation;
- 18 allocate state funds to support credentials in K-12;
- 16 award incentive funding based on credential attainment.

Not all industry credentials are created equal. They vary widely with regards to how states define them, which level of skills they represent, and whether employers really value them.



**Only 18%**

of the credentials earned by K-12 students are demanded by employers.



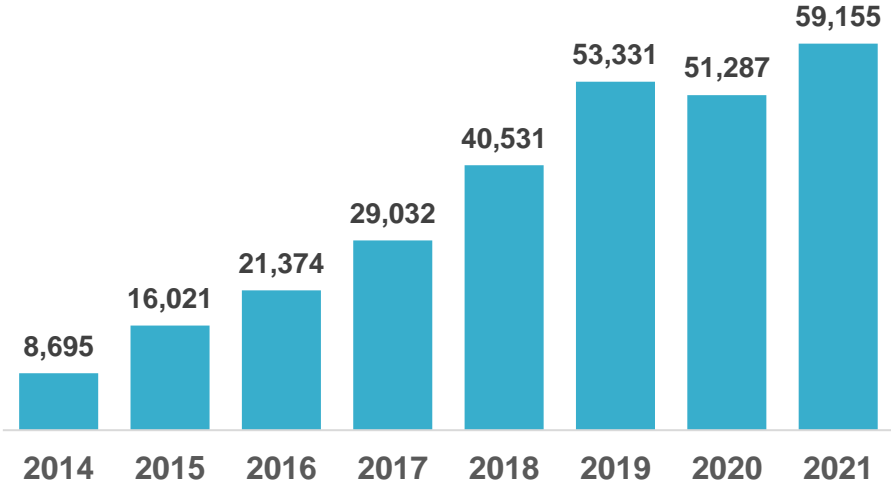
# Ohio context for industry credentials

Ohio has prioritized industry credentials as an important signal of career preparedness in K-12.

## Policies, Programs and Investments

- Graduation Requirements
- CTE Programs
- Credential Exam Fee Reimbursements
- Senior-Only Credential Programs
- IWIP Financial Incentives
- Accountability Indicators

## Credentials Earned by Graduation Cohort



Source: [OH Industry Recognized Credentials Dashboard](#)

# Ohio K-12 industry credential analysis

This analysis addresses key questions about Ohio’s promoted industry credentials in K-12.

- 1. **Are promoted industry credentials aligned with employer demand?**
- 2. **Are credentials earned by students aligned with employer demand?**

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## Methodology: Key Terms

### Advertised Wages

The wages advertised for OH job postings that requested each credential.

Five-year average wages, sub-bachelor’s degree

### Earned Credentials

Credentials\* that were earned by the 2020 Graduation Cohort.

### Demand

The number of OH job postings that requested each credential.  
Two-year average annual postings

### Promoted List

Credentials\* included in Ohio’s 2022 Master Credential List.

<sup>4</sup> \*The total counts of earned and promoted credentials may not match ODE lists. To best capture and align employer demand, we combined a few similar credentials.

# There is significant misalignment between the credentials promoted and earned – and what employers demand.

Our analysis examined both the credentials on the current promoted list and those earned in 2020.

## Promoted List (2022)

How aligned is the promoted credential list?

**464** promoted credentials

**102** promoted credentials are in demand\*

**22%** of the list are in-demand\* credentials

## Earned Credentials (2020)

How aligned are the credentials students earn?

**51,287** total credentials earned

**191** unique credential names

**20%** credentials earned are in demand\*

# Credential alignment by classification

Most of the credentials promoted and earned are not demanded by employers.

Promoted Credentials	Earned Credentials	Classification	Definition
7 (2%)	549 (1%)	Aligned credentials	The number of credentials earned is roughly equal to the number requested in job postings.
14 (3%)	8,450 (16%)	Oversupplied credentials	More credentials earned than requested in employer job postings, but some registered employer demand
114 (25%)	10,164 (20%)	Undersupplied credentials	Far more annual job postings requesting the credential than earned
314 (68%)	13,342 (26%)	Not demanded	Credentials with fewer than 25 average annual job postings
15 (3%)	18,782 (37%)	General career readiness	Credentials that reflect general skills that are not occupation-specific (e.g., basic reading, math, financial and digital literacy, workplace safety and basic life support or first aid).

# Top 15 credentials earned

12 of the top 15 credentials earned are not demanded by employers, oversupplied, or are general career readiness certifications

Credential Name	Earned Credentials	Annual Demand	Advertised Wages	Classification
CPR First Aid	9,111	184	***	General Career Readiness
Occupational Safety and Health Administration (OSHA 10/30)	9,038	2,591	***	General Career Readiness
National Incident Management System 100	2,227	279	\$51,819	Oversupplied
Ohio Department of Health - State Tested Nurse Assistant (STNA)	1,671	25,104	\$35,238	Undersupplied
National Incident Management System 700	1,558	153	\$51,128	Oversupplied
National Restaurant Association - ServSafe Unspecified	1,445	7,136	\$35,679	Undersupplied
National Center For Construction Education & Research (NCCER) - Core Certification	1,329	14	***	Not Demanded
Career Connection Certificates	1,179	0	***	Not Demanded
National Incident Management System 200	1,179	129	\$51,823	Oversupplied
National Incident Management System 800	1,119	88	\$56,214	Oversupplied
Microsoft Office Specialist - Word	990	11	***	Not Demanded
Occupational Safety and Health Administration (OSHA) - Forklift Operator	930	4,960	\$34,469	Undersupplied
American Welding Society - Certified/Qualified Welder	872	615	\$51,287	Oversupplied
RISE Up Retail Industry Fundamentals	863	3	***	Not Demanded
Ohio Department of Job and Family Services (ODJFS) - Communicable Disease Prevention for Childcare Personnel	704	4	***	Not Demanded

# Aligned credentials

Only 7 credentials have similar numbers of credentials earned vs. requested in job postings.

**2%** (7)

Supply roughly equals demand

**1%** of credentials earned

Credential Name	Earned Credentials	Annual Postings	Advertised Wages
ASE - Automobile Series: Manual Drive Train and Axles	138	252	\$51,593
ASE - Collision Repair and Refinish Series: Structural Analysis and Damage Repair	121	131	\$58,755
ASE - Automobile Series: Automotive Automatic Transmission/Transaxle	104	155	\$53,502
Google Analytics Certification	73	130	***
Google Adwords Certification	64	78	***
Federal Aviation Administration (FAA) - Airframe Mechanic	26	34	***
Entrepreneurship and Small Business Certification	23	26	***



# Ample demand but low wages

Three aligned credentials lead to with low-wage jobs.

## 3

Promoted credentials have more than 25 average annual postings but post wages less than \$14.90

Credential Name	Earned Credentials	Annual Postings	Advertised Wages
Council for Professional Recognition - Child Development Associate Credential (CDA)	154	3,449	\$26,379
National Restaurant Association - ServSafe Food Handler	21	2,575	\$29,635
ASE - Parts Specialist Series: Medium/Heavy Truck Parts Specialist	0	82	\$30,114

# Oversupplied credentials

Several oversupplied credentials account for a notable portion of credentials earned.

**3% (14)**

Promoted credentials with more credentials earned than average annual postings

**16%** of credentials earned

Credential Name	Earned Credentials	Annual Postings	Advertised Wages
National Incident Management System 100	2,227	279	\$51,819
National Incident Management System 700	1,558	153	\$51,128
National Incident Management System 200	1,179	129	\$51,823
National Incident Management System 800	1,119	88	\$56,214
American Welding Society - Certified/Qualified Welder	872	615	\$51,287
Microsoft Office Specialist - Excel	297	29	\$48,673
ASE - Automobile Series: Engine Performance	273	161	\$58,807
ASP Baton Certification	269	105	\$37,088
Ohio Agribusiness Association (OABA) - Agribusiness and Production Systems Certification	159	67	\$38,933
HAZWOPER Certification	147	72	\$41,041
ASE - Collision Repair and Refinish Series: Painting and Refinishing	143	38	\$46,136
ProStart Certificate of Achievement	123	27	***
Association of Public-Safety Communications Officials (APCO) Fire Service Communications	57	46	\$39,888
Association of Public-Safety Communications Officials (APCO) Law Enforcement Communications	27	27	\$37,001

# Undersupplied credentials

A sizeable number of promoted and earned industry credentials are undersupplied.

**25%** (114)

Promoted credentials have fewer than half as many earned as annual postings (min. 25 postings)

**20%** of credentials earned

Credential Name	Earned Credentials	Annual Postings	Advertised Wages
Ohio Department of Health - State Tested Nurse Assistant (STNA)	1,671	25,104	\$35,238
National Restaurant Association - ServSafe Unspecified	1,445	7,136	\$35,679
Occupational Safety and Health Administration (OSHA) - Forklift Operator	930	4,960	\$34,469
ASE - Automobile Series: Brakes	593	2,166	\$61,223
ASE - Automobile Series: Maintenance and Light Repair	545	5,416	\$56,038
Ohio State Board of Cosmetology - License of Cosmetology	541	1,166	\$36,676
ASE - Automobile Series: Electrical/Electronic Systems	472	2,160	\$57,268
ASE - Automobile Series: Engine Repair	335	1,841	\$52,605
ASE - Medium/Heavy Truck Series: Suspension and Steering	325	838	\$47,072
ASE - Automobile Series: Suspension and Steering	323	1,623	\$59,877
Firefighting	223	1,061	\$42,877
National Healthcareer Association (NHA) - Certified Phlebotomy Technician (CPT)	219	2,007	\$40,915
ASE - Automobile Series: Heating and Air Conditioning	195	1,229	\$61,260
ASE - Medium/Heavy Truck Series: Diesel Engines	176	902	\$50,468
ASE - Automobile Series: Automobile Service Technology	164	1,116	\$47,177

# Undersupplied credentials

About half of undersupplied credentials meet Ohio's Top Jobs wage threshold.

## 12% (55)

Promoted credentials are undersupplied **and** meet the following criteria:

- At least 25 average annual postings
- Wage greater than \$14.90
- At least half of postings request less than a Bachelor's degree

Credential Name	Annual Postings	Earned Credentials	Advertised Wages
Ohio State Board of Nursing - Licensed Practical Nurse	28,889	15	\$57,328
Ohio Department of Health - State Tested Nurse Assistant (STNA)	25,104	1,671	\$35,238
National Restaurant Association - ServSafe Unspecified	7,136	1,445	\$35,679
EMT/EMS	5,673	87	\$46,943
Ohio State Board of Pharmacy - Certified Pharmacy Technician (CPhT) (ExCPT)	5,625	31	\$37,748
ASE - Automobile Series: Maintenance and Light Repair	5,416	545	\$56,038
Occupational Safety and Health Administration (OSHA) - Forklift Operator	4,960	930	\$34,469
National Healthcareer Association (NHA) - Certified Patient Care Technician (CPCT)	3,819	69	\$36,349
American Medical Technologists (AMT) - Medical Assistant	2,536	24	\$46,094
ASE - Automobile Series: Brakes	2,166	593	\$61,223
ASE - Automobile Series: Electrical/Electronic Systems	2,160	472	\$57,268
North American Tech Excellence (NATE) - HVAC Cert	2,091	0	\$43,718
EPA - Refrigerant Recovery Universal	2,038	135	\$49,781
National Healthcareer Association (NHA) - Certified Phlebotomy Technician (CPT)	2,007	219	\$40,915
ASE - Collision Repair and Refinish Series: Mechanical and Electrical Components	1,859	94	\$48,342

# Credentials that are not demanded

Most credentials promoted in K-12 are not demanded by employers.

**68%** (314)

Promoted credentials do not register meaningful labor market demand (fewer than 25 postings statewide)

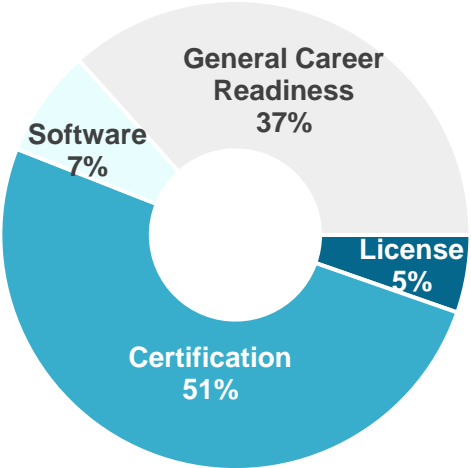
**26%** of credentials earned

Credential Name	Earned Credentials	Annual Demand
National Center For Construction Education & Research (NCCER) - Core Certification	1,329	14
Career Connection Certificates	1,179	0
Microsoft Office Specialist - Word	990	11
RISE Up Retail Industry Fundamentals	863	3
Ohio Department of Job and Family Services (ODJFS) - Communicable Disease Prevention for Childcare Personnel	704	4
National Center For Construction Education & Research (NCCER) - Level 1 Certification (Unspecified)	702	8
Ohio Children Trust Fund (OCTF) - Child Abuse Awareness and Prevention	683	7
Microsoft Office Specialist - Powerpoint	647	19
Adobe - Photoshop	644	4
Occupational Safety and Health Administration (OSHA) - Manlift Operator	443	2
RISE Up Customer Service and Sales	419	3
Adobe - Illustrator	356	4
FANUC Certification - Handling Tools	284	3
American Medical Certification Association (AMCA) - Physical Therapy Aide Certification	284	0
CompTIA Strata IT Fundamentals	279	12

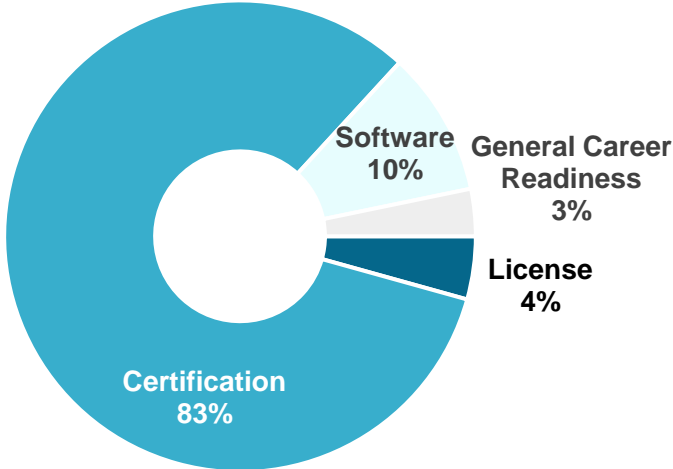
# General career readiness credentials

General Career Readiness comprise 3% of the promoted list, but 37% of credentials earned.

### Earned Credentials (2020)



### Promoted List (2022)



# General career readiness credentials

The top two most earned credentials in 2020 were general career readiness credentials.

**35%** (18,149)

of the 51,287 credentials earned in 2020 were either CPR First Aid or OSHA 10/30 hour

Credential Name	Earned Credentials	Annual Postings
CPR First Aid	9,111	184
Occupational Safety and Health Administration (OSHA 10/30)	9,038	2,591
Internet and Computing Core Certification (IC3)	317	4
Bleeding Control Basic 1.0 Course	307	1
Safeland	5	39
Leadership Excellence - Student	4	0
Multi-Craft Core Curriculum (MC3)	0	0
Ohio Drivers License	0	184,211
Unspecified - Leadership Certificates	0	8
Soft Skills Pro	0	5
Internet and Computing Core Certification (IC3) - Digital Literacy	0	1
3M: Head, Eye and Face Protection	0	0
3M: Hearing and Noise Protection	0	0
3M: Respiratory Protection	0	0
Franklin Covey: Leader In Me	0	0

# IWIP credentials

63% of the credentials on the state's IWIP incentive funding list are not demanded by employers.

# 110

IWIP Credentials

24% of promoted list

- **63%** Not demanded
- **2%** Oversupplied
- **32%** Undersupplied

Credential Name	Earned Credentials	Annual Postings	Advertised Wages	Alignment Category
NCCER - Core Certification	1,329	14	***	not demanded
Career Connection Certificates	1,179	0	***	not demanded
American Welding Society - Certified/Qualified Welder	872	615	\$51,287	oversupplied
FANUC Certification - Handling Tools	284	3	***	not demanded
CompTIA Strata IT Fundamentals	279	12	***	not demanded
Firefighting	223	1,061	\$42,877	undersupplied
Ohio State Apprenticeship Council Recognized Pre-Apprenticeship Program Certificate of Completion	218	0	***	not demanded
Motoman DX100 Basic Programming w/Material Handling	165	6	***	not demanded
EPA - Refrigerant Recovery Core + Level 1	162	1,490	\$49,931	undersupplied
Council for Professional Recognition - Child Development Associate Credential (CDA)	154	3,449	\$26,379	undersupplied
HAZWOPER Certification	147	72	\$41,041	oversupplied
EPA - Refrigerant Recovery Universal	135	2,038	\$49,781	undersupplied
Microsoft Technology Associate (MTA) - Developer	124	7	***	not demanded
Microsoft Technology Associate (MTA) - IT Infrastructure	115	3	***	not demanded
National Institute for Metalworking Skills (NIMS) - Machining	114	5	***	not demanded



# Employer signaling

The credential universe is large: are employers asking for what they value?

**Employers play an important role in signaling the value that each credential offers in terms of employment, wage and advancement decisions. However, they do not always communicate which credential(s) and/or credentialing entities they trust and value.**

Two easy steps employers can take to improve signaling:

1. Listing the credentialing organization and full name of the credential in job postings
2. More clearly specifying whether credentials are required vs. preferred

# Next steps

## Opportunities for Ohio to ensure credentials have their desired impact for students

- 1. Address alignment of promoted credentials to focus on value to employers, students and communities.**
  - Engage state and regional employers to address signaling concerns.
  - Send a clear message to educators, students and families about which credentials “matter” most.
- 2. Ensure that industry credentials are connected to intentional pathways to college and career.**
  - Highlight and promote connected credentials that are part of a pathway in a valued occupational field.
  - Reward a set of linked experiences that can include a combination of earning postsecondary course credit, attainment of a valued credential and/or engaging in a work-based learning experience.
- 3. Focus on outcomes: Connect student experiences and credential attainment to postsecondary, wage and employment data.**
  - Are credentials part of intentional high-quality pathways?
  - Which students have access to high-quality pathways vs. others?
  - Which credential(s), experiences and pathways have the best “return on investment” for students, communities and the state?



# Appendix: Methodology

Lightcast and ExcelinEd used the following methodology to measure the supply of and demand for industry-recognized credentials in the Ohio labor market.

## CREDENTIAL SUPPLY DATA

**Promoted List:** the list of industry-recognized credentials available to K-12 students and promoted by the Ohio Department of Education. For this analysis, we used the [2022 Master Credential List](#), which includes the name, aligned career field(s), graduation point value, and vendor information for each promoted credential.

**Earned Credentials:** the industry-recognized credentials earned by the class of 2020. Data on earned credentials were obtained from Ohio's [Industry Recognized Credential dashboard](#). This analysis uses credential attainment data from the 2020 graduation cohort, which reflects the most recently available data at the time of the project launch and the last graduation cohort that did not see a full year of education impacted by the Covid-19 pandemic.

**IWIP Credentials:** the list of credentials that qualify for Innovative Workforce Incentive Program (IWIP) funding. The [IWIP List](#) is a subset of the state's Master Credential List that indicates which credentials generate a \$1,250 bonus (for schools) when earned by a K-12 student. It's important to note that the IWIP program began in fiscal year 2021, after the Class of 2020 graduated.

## CREDENTIAL DEMAND DATA

To measure employer demand for credentials, we searched Ohio job postings for references to earned and promoted credentials.

### Job Postings Data

Lightcast maintains a comprehensive database of millions of job postings. Lightcast's spidering technology extracts information from more than 40,000 online job boards, newspapers, and employer sites on a daily basis and de-duplicates postings for the same job, whether posted multiple times on the same site or across multiple sites. Lightcast extracts information from the job postings including location, employer name, job title, and job text. Job text is then sent through a parsing program to extract skills, degrees, education and experience requirements, advertised salary, and more.

**Credential Demand:** the average annual number of Ohio job postings that requested each credential over a two-year period (2020-2021). We also calculated the percentage of these job postings that asked for less than a bachelor's degree, in order to assess fit for high school graduates with less than a four-year degree. For some analyses detailed below, more than 50 percent of job postings had to request less than a bachelor's degree (these categories include Undersupplied Credentials that Meet Top Jobs Wage, Opportunity Credentials, and Expansion Credentials).

**Advertised Wage:** the average wage advertised in Ohio job postings over a five-year period (2017-2021) that requested each credential and less than a bachelor's degree. Wages were suppressed for credentials that were requested in fewer than 10 postings that included wage information.

**Wage Threshold:** We used the Ohio Top Jobs wage threshold of \$14.90/hour in analyses that included wage information.

# Appendix: Methodology

## DATA CLEANING AND QUERIES

### Data Cleaning

Earned credential names from the Industry Recognized Credential dashboard were matched with promoted credential names from the 2022 Master Credential List. Most credential names from the dashboard matched a credential name on the Master List. However, there were some differences due to changes over time in the state's promoted list, reporting requirements, and/or credential vendor offerings.

In some cases, the credential names on the Master List included more specificity than the credential names from the dashboard. For example, the Master List included multiple ServSafe certifications, including Food Handler, Person In Charge, Manager, Allergens, and Workplace, yet the dashboard reported completions for a generically named ServSafe. In these cases, we created an "unspecified" category for the credential (ServSafe – Unspecified).

### Credential Queries

We developed search rules for each credential that would trigger based on the text of job postings and/or based on other information extracted from job postings, such as skills or certifications that appear within Lightcast's taxonomies. Search parameters were scoped deliberately around the name or possible names of each credential.

In some cases, employers are not as precise when requesting credentials as vendors are when naming them. To best capture employer demand, we "rolled up" some credentials that reflect similar skills and knowledge. For instance, we combined multiple versions of credentials related to the same Microsoft program suite Microsoft Dynamics into one Microsoft Dynamics listing and combined multiple ASE automotive credentials that reflect similar skillsets.

Additionally, there are instances where we created an "unspecified" category to register demand for the certification but at a level of specificity less granular than what is included in the Master List. However, search parameters remained tightly scoped around credential names. For example, job postings that mentioned food handling without referencing the ServSafe certification were not automatically tagged to a ServSafe certification.

## SUMMARY ALIGNMENT ANALYSIS

**Promoted credentials that are in demand:** credentials on the promoted list with at least 25 average annual postings, advertised wages above \$14.90, and which are not oversupplied or general career readiness credentials (see below for the definitions of oversupplied and general career readiness).

**Earned credentials that are in demand:** credentials in the earned credentials dataset with at least 25 average annual postings, advertised wages above \$14.90, and which are not oversupplied or general career readiness credentials (see below for the definitions of oversupplied and general career readiness).

# Appendix: Methodology

## CREDENTIAL ALIGNMENT ANALYSIS

We assigned each credential to one of five mutually exclusive alignment categories using the relationship between the number of credentials earned and the number of average annual job postings requesting that credential. These categories are as follows:

- **Not demanded:** Credentials that are requested in fewer than 25 average annual Ohio job postings.
- **Undersupplied:** Credentials that are requested in least two-times more average annual job postings than credentials earned (minimum 25 average annual postings). The graduating class could meet only half of the demand for these credentials.
  - **Undersupplied credentials that meet Top Jobs wage:** Undersupplied credentials that also advertise wages above \$14.90 and for which more than 50 percent of job postings are at the sub-bachelor's level.
- **Aligned:** Credentials with at least as many job postings as credentials earned, and the number of credentials earned is not too low as to be undersupplied. That is, there are at least half as many credentials earned as there are average annual job postings.
  - **Ample demand but low wages:** Credentials that meet the criteria for aligned credentials but have advertised wages below \$14.90.
- **Oversupplied:** More credentials are earned than the number of average annual job postings requesting the credential, and at least 25 annual postings request the credential.
- **General career readiness:** General career readiness credentials reflect demand for general skills that are not occupation-specific and which are necessary but insufficient for employment. When an employer references a general career readiness certification, there will be other occupation-specific characteristics that the employer is also seeking. Therefore, there can be no meaningful supply-demand assessment for general career readiness credentials.

## CREDENTIAL TYPES

We classified the promoted and earned credentials according to five credential types:

- **License:** Mandated by law for workers to gain permission to practice in specific occupations and must be renewed periodically. Requirements vary by state and/or by licensing agency.
- **Certification:** Signals an individual has acquired a set of abilities and, in some cases, allows them to perform a specific job. Certifications are not a legal requirement but may open doors to entry-level jobs or help seasoned workers advance up the career ladder in their field.
- **Software:** Demonstrates competence of a specific software. This includes productivity software and job-specific applications such as graphic or computer-aided design.
- **General Career Readiness:** Measures general foundational workplace skills including basic reading, math, financial and digital literacy, workplace safety and basic life support or first aid. These types of skills are necessary across virtually all occupations.
- **CTE Assessment:** Measures foundational workplace skills including basic reading, math, financial and digital literacy, workplace safety and basic life support or first aid. These types of skills are applicable across virtually all occupations.

# Appendix: Methodology

## ANALYSES THAT WERE CONDUCTED BUT NOT INCLUDED IN THE FINAL DECK

### Alignment Categories for Credentials Not Earned/Promoted

There are some credentials that register employer demand but do not appear on the Ohio Master List of credentials. Lightcast develops and manages an internal taxonomy for credential names. All of the credentials within this taxonomy have search criteria similar to the search criteria detailed in the Credential Demand section above. That is, demand for the credential is flagged at the job-posting level using some combination of keywords in job posting text. Lightcast and ExcelinEd leveraged this taxonomy to measure demand for credentials not on the Ohio Master List of credentials.

- Credentials that *are not* demanded and not earned/promoted: These credentials are flagged in fewer than 25 average annual job postings.
- Credentials that *are* demanded but are not earned/promoted: These credentials are flagged in at least 25 average annual job postings.
  - Expansion credentials: Within the category of credentials that are valued but off list, there are also “expansion” credentials. These credentials register employer demand, advertise wages above \$14.90, and are associated with occupations that do not require a bachelor’s degree.

### Opportunity Credentials

Within the Undersupplied category, there are also “opportunity” credentials. These are credentials on the Master List that have not (yet) been earned by K-12 students but register employer demand, advertised wages above \$14.90, and which are associated with occupations that do not require a bachelor’s degree (more than 50 percent of job postings ask for less than a bachelor’s degree).