Non-Degree Credentials of Value in Minnesota

September 2025

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Background and Objective

The landscape of credentials has been shifting rapidly with changes to education, technology and the labor market, with non-degree credential offerings growing and gaining traction. States are increasingly adopting rigorous, data-driven frameworks to define and evaluate quality non-degree credentials that translate to opportunity for jobseekers.

The objective of this project was to identify non-degree credentials available to Minnesotans that are aligned to occupations that meet demand and wage thresholds (as articulated in the Minnesota P-20 Education Partnership's 2023 Quality Credentials of Value Framework criteria), based on employer demand for credentials as observed in job posting data.

Approach

All occupations represented by six-digit Standard Occupational Classification (SOC) codes were assessed against wage and demand criteria derived from the 2023 Quality Credentials of Value Framework. Occupations that were in-demand and paid a family-sustaining wage or met essential community needs were included in analysis. Data from the Help Wanted OnLine (HWOL) subset of Lightcast's job posting dataset were pulled for all postings advertised in Minnesota in 2023 and 2024, a 24-month period. Credential information came from Lightcast's "Qualification" tagging, which indicates credentials requested by employers in job postings. The credentials list was refined to include only those mentioned relatively frequently in postings for included occupations, then each individual credential was reviewed for accuracy by the research team. Industry leaders in healthcare, construction and information technology also reviewed and validated credentials relevant to their fields.

Findings

The analysis identified 393 non-degree credentials requested in Minnesota by employers across 538 in-demand occupations that pay a family-sustaining wage or meet essential community needs. These include 62 licenses, 302 certifications and 29 other credentials, which include certificates, course completions, exams and others.

Discussion

This job posting analysis provides a broad base of information about credentials that are meaningful and relevant to employers hiring in Minnesota. Job posting data allows for efficient review of thousands of credentials across hundreds of occupations. The data are known to be more accurate for some types of occupations than for others—for example, roles that infrequently advertise online will have sparser postings and less meaningful credential information. As job posts and data processing methodologies are an imperfect reflection of employer's needs, so too is this list of non-degree credentials of value. Employer needs vary, and credentials that are important to some Minnesota employers and industries are likely to be overlooked here. This analysis offers a starting point and a broad look at credentials known to be in-demand among Minnesota employers in 2023 and 2024.

Project Team

RealTime Talent, a nonprofit focused on Minnesota's workforce, led the project. An advisory group consisting of a subset of the P-20 Credentials of Value Work Group plus other community leaders met monthly with RealTime Talent to give input at all stages of the work. This project was commissioned by the Minnesota Office of Higher Education (OHE) in partnership with the Minnesota Department of Education (MDE), Minnesota's Early Childhood Longitudinal Data System (ECLDS) and the Minnesota Statewide Longitudinal Education Data System (SLEDS).

Background

The landscape of credentials has been shifting rapidly with changes to education, technology and the labor market, with non-degree credential offerings growing and gaining traction. Non-degree credentials include certificates, certifications, microcredentials, licenses, apprenticeships and other documented attainment of learning that does not result in a degree from a college or university. In 2023, the Minnesota State Legislature changed the state's higher education attainment goal to include industry-recognized credentials alongside postsecondary credentials, putting non-degree credentials on equal footing with degrees and certificates for this state policy.

Yet the quality of non-degree credential offerings varies, as does desirability of these credentials among employers. How can states support learners in earning any credential that will meaningfully impact their ability to qualify for well-paying jobs, when its mechanisms for doing so have historically focused on degree programs?

States are increasingly adopting rigorous, data-driven frameworks to define and evaluate quality non-degree credentials that translate to opportunity for jobseekers. This focus on non-degree credentials acknowledges that in-demand skills and knowledge can be obtained in many different environments. One example is Hawaii, which first published a report on high value non-degree credentials in 2020 and updated the list most recently in 2025.

Project Context and Scope

This credentials of value analysis grew out of the Minnesota P-20 Education Partnership's 2023 Quality Credentials of Value Framework, which was developed by the P-20 Credentials of Value (CoV) Work Group in a process led by the National Skills Coalition and Education Strategy Group. The framework recommends criteria that the state may use "when establishing quality designations for degree and non-degree credentials and programs," outlining separate criteria for credentials, programs and education and training providers.

The current analysis follows up on the framework by focusing on non-degree credentials and assessing which credentials are aligned to occupations that meet demand and wage thresholds as outlined in the framework criteria[1]. Alignment of credentials to occupations was determined through job posting data analysis. While both degree and non-degree credentials were originally within the purview of this analysis, the available data on degree credentials in job postings exhibited too many limitations to yield a comprehensive assessment. As a result, the analysis focuses on non-degree credentials.

This work is intended to inform policy makers, educational administrators and those who support jobseekers.

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[1] See appendix for full framework criteria, which also included two important categories not able to be assessed here, access and stackability.

Objective

The objective of this project was to identify non-degree credentials available to Minnesotans that are aligned to occupations that meet demand and wage thresholds (as articulated in the Minnesota P-20 Education Partnership's Quality Credentials of Value Framework criteria), based on employer demand for credentials as observed in job posting data.

Approach

First, all occupations represented by six-digit Standard Occupational Classification (SOC) codes were assessed against wage and demand criteria derived from the Minnesota P-20 Education Partnership's Quality Credentials of Value Framework. Occupations that were in-demand (current high demand or forecasted high demand) and paid a family-sustaining wage were included in analysis. Eight occupations that paid lower wages but met essential community needs in healthcare, direct care, K-12 or early childhood education, called "Critical Occupations" in this analysis, were included given their place as vital building blocks for Minnesotans and the state's economy. In total, 538 occupations were included in analysis.

Next, data from the Help Wanted OnLine (HWOL) subset of Lightcast's global aggregated job postings dataset were pulled for all postings advertised in Minnesota in the 24-month time period coinciding with calendar years 2023 and 2024 (January 1, 2023 to December 31, 2024). These included on-site, remote and hybrid positions advertised in Minnesota by direct employers and staffing firms. The data included aggregate information about quantities of postings by occupations, credentials and education levels. Credential information came from Lightcast's "Qualification" tagging, which indicates credentials requested by employers in job postings. These credentials may be required or preferred.

Job posting data aligned to included occupations were then analyzed. Reviewing aggregate job posting data, the research team developed a threshold for considering a credential to be in-demand among the included occupations. This ensured that the value of credentials mentioned infrequently would not be overstated. Credentials qualified as potential credentials of value by either:

a. Appearing in at least 100 postings across included occupations; OR
b. Appearing in at least 50 postings for included occupations AND appearing in at least 1% of postings for a single included occupation

Finally, each credential that qualified was reviewed in detail by the research team. The team reviewed the credential against known Minnesota state licenses, verified the accuracy of the credential (including reviewing detailed job postings when necessary), and reviewed alignment of the credential to the occupation(s) that it appeared with most commonly in job posting data. Three industry meetings were convened for leaders in healthcare, construction and information technology (IT) to review credentials relevant to their fields.

Job posting analysis provides a broad base of information about credentials that are meaningful and relevant to employers hiring in Minnesota. Aggregated job posting data allows for efficient review of

thousands of credentials across hundreds of occupations. The data are known to be more accurate for some types of occupations than for others—for example, roles that infrequently advertise online (e.g. occupations typically recruited through union hiring halls) will be underrepresented in job posting data, and therefore credential information for those roles will be less meaningful. As job posts and data processing methodologies are an imperfect reflection of employer's needs, so too is this list of credentials of value. Employer needs vary, and credentials that are important to some Minnesota employers and industries are likely to be overlooked here. This analysis offers a starting point and a broad look at credentials known to be in-demand among Minnesota employers in 2023 and 2024.

More detailed methodological notes are available in the appendix.

Project Team

RealTime Talent, a nonprofit focused on Minnesota's workforce, led the project, including developing methodology, conducting analysis and writing the report. An advisory group consisting of a subset of the P-20 Credentials of Value Work Group plus other community leaders met monthly with RealTime Talent to give input at all stages of the work (see appendix for more information about the advisors). This project was commissioned by the Minnesota Office of Higher Education (OHE) in partnership with the Minnesota Department of Education (MDE), Minnesota's Early Childhood Longitudinal Data System (ECLDS) and the Minnesota Statewide Longitudinal Education Data System (SLEDS).

Non-Degree Credentials of Value

Credentials of value were identified through analysis of job posting data and vetted by project advisors, researchers and industry leaders. The tables below present Minnesota's non-degree credentials of value alongside information about related occupations: major occupation group, typical minimum education required, and whether the associated occupations offer a family-sustaining wage statewide. While nearly all credentials align to multiple occupations, a single occupation group most aligned with the credential is indicated below for simplicity.

Credentials are organized into tables based on their type:

     a. Licenses
     b. Certifications
     c. Other Non-Degree Credentials

In total, the analysis identified 393 non-degree credentials of value. These include 62 licenses, 302 certifications and 29 other credentials, which include certificates, course completions, exams and others.

The credentials of value appear in job postings for roles in every major occupation group. Nearly all credentials (392) appear in postings for multiple occupations. Healthcare Practitioners and Technical Occupations (SOC 29) is the occupation group with the most aligned credentials of value by far, with nearly a third of all credentials of value (128 credentials) listed below as primarily aligned to this field.

Job postings requesting non-degree credentials often list a minimum education requirement in addition to the credential. Over a third of credentials of value (137) are typically associated with jobs with a minimum education requirement of high school or GED. Fewer (68) typically require a minimum of an Associate degree, while slightly more (152) require at least a bachelor's degree. A smaller number of credentials of value (35) generally appear alongside requirements for an advanced degree.

While occupations could be included in the analysis if they met family-sustaining wage thresholds in just one region of Minnesota or if they paid lower wages but were considered a Critical Occupation, a large majority of credentials (93%) are associated with occupations paying a family-sustaining wage statewide.

Licenses

A license is a type of credential that is generally awarded by a government-regulated agency. This award may be granted by a federal entity, but usually comes from the state level. A license may be required before an individual may work in specific professions.

License	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Adjuster License	Business and Financial Operations (13)	High school or GED	Yes
Advanced Practice Registered Nurse	Healthcare Practitioners and Technical (29)	Master's degree[6]	Yes
Architecture License	Architecture and Engineering (17)	Bachelor's degree	Yes
Audiologist License	Healthcare Practitioners and Technical (29)	Master's degree[6]	Yes
Barber License	Personal Care and Service (39)	High school or GED[6]	No
Boiler Engineer/Operator License[4]	Production (51)	High school or GED	Yes
CDL Class A License	Transportation and Material Moving (53)	High school or GED[6]	Yes

[1] For most strongly affiliated occupation(s). Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
[4]This credential is earned after completion of a registered apprenticeship, an industry-driven, high-quality career pathway that combines paid on-the-job learning with related technical instruction to meet business talent needs. Registered Apprenticeships are industry-vetted and approved and validated by the Minnesota Department of Labor and Industry.
[5]This credential is no longer offered; new credentials that supersede it may have value to employers.
[6]Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

License	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
CDL Class B License	Transportation and Material Moving (53)	High school or GED[6]	Yes
CDL Class C License	Transportation and Material Moving (53)	High school or GED[6]	Yes
Certified Public Accountant	Business and Financial Operations (13)	Bachelor's degree	Yes
Class A Journeyworker Electrician License[4]	Construction and Extraction (47)	High school or GED[6]	Yes
Commercial Driver's License (CDL)	Transportation and Material Moving (53)	High school or GED[6]	Yes
Commercial Pilot License	Transportation and Material Moving (53)	High school or GED	Yes
Contractor License	Installation, Maintenance, and Repair (49)	High school or GED[6]	Yes
Cosmetology License	Personal Care and Service (39)	High school or GED[6]	Yes
Dental Hygiene License	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Doubles Endorsement	Transportation and Material Moving (53)	High school or GED[6]	Yes
Drug Enforcement Agency (DEA) License	Healthcare Practitioners and Technical (29)	Master's degree[6]	Yes
Engineer in Training	Architecture and Engineering (17)	Bachelor's degree	Yes
Esthetician License	Personal Care and Service (39)	High school or GED[6]	No
Hazmat Endorsement	Transportation and Material Moving (53)	High school or GED	Yes

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License	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Insurance License	Sales and Related (41)	High school or GED[6]	Yes
Land Surveyor In Training	Architecture and Engineering (17)	Associate degree	Yes
Licensed Graduate Social Worker	Community and Social Service (21)	Master's degree	Yes
Licensed Independent Clinical Social Worker	Community and Social Service (21)	Master's degree	Yes
Licensed Independent Social Worker	Community and Social Service (21)	Master's degree	Yes
Licensed Insurance Producer	Sales and Related (41)	High school or GED[6]	Yes
Licensed Marriage And Family Therapist (LMFT)	Community and Social Service (21)	Master's degree	Yes
Licensed Nursing Home Administrator (LNHA)	Management (11)	Bachelor's degree	Yes
Licensed Practical Nurse (LPN)	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Licensed Professional Clinical Counselor	Community and Social Service (21)	Master's degree	Yes
Licensed Professional Counselor (LPC)	Community and Social Service (21)	Master's degree	Yes
Licensed Psychologist (LP)	Community and Social Service (21)	Master's degree	Yes
Licensed Social Worker	Community and Social Service (21)	Bachelor's degree	Yes
Life And Health Insurance License	Sales and Related (41)	Bachelor's degree	Yes

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License	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Limited Radiology Registration	Healthcare Support (31)	High school or GED[6]	Yes
Medical License	Healthcare Practitioners and Technical (29)	Ph.D. or professional degree[6]	Yes
Nationwide Mortgage Licensing System (NMLS) Registration	Sales and Related (41)	High school or GED[6]	Yes
Passenger Endorsement	Transportation and Material Moving (53)	High school or GED[6]	Yes
Peace Officer Certification	Protective Service (33)	Associate degree	Yes
Pesticide Applicator License	Building and Grounds Cleaning and Maintenance (37)	High school or GED	Yes
Pharmacy Intern License	Healthcare Practitioners and Technical (29)	High school or GED[6]	Yes
Physical Therapy Assistant License	Healthcare Support (31)	Associate degree[6]	Yes
Professional Engineer (PE) License	Architecture and Engineering (17)	Bachelor's degree	Yes
Professional Geologist (PG) License	Life, Physical, and Social Science (19)	Bachelor's degree	Yes
Property And Casualty Insurance License	Sales and Related (41)	High school or GED[6]	Yes
Real Estate Salesperson License	Sales and Related (41)	Bachelor's degree[6]	Yes
Registered Dietitian (RD/RDN)	Healthcare Practitioners and Technical (29)	Bachelor's degree[6]	Yes

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Registered Nurse (RN)	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Registered Pharmacist (RPh)	Healthcare Practitioners and Technical (29)	Bachelor's degree	Yes
School Bus Endorsement	Transportation and Material Moving (53)	High school or GED[6]	No
School Counselor License	Community and Social Service (21)	Bachelor's degree[6]	Yes
School Psychology License	Life, Physical, and Social Science (19)	Master's degree[6]	Yes
Speech-Language Pathology License	Healthcare Practitioners and Technical (29)	Master's degree	Yes
Surveying License	Architecture and Engineering (17)	Bachelor's degree	Yes
Tanker And Hazmat Combo X Endorsement	Transportation and Material Moving (53)	High school or GED	Yes
Tanker Endorsement	Transportation and Material Moving (53)	High school or GED[6]	Yes
Teaching License	Educational Instruction and Library (25)	Bachelor's degree[6]	Yes
Triples Endorsement	Transportation and Material Moving (53)	High school or GED[6]	Yes
Valid Driver's License	Across many occupations	High school or GED	Yes
Veterinary License	Healthcare Practitioners and Technical (29)	Ph.D. or professional degree[6]	Yes
Wastewater Operator Certification	Production (51)	High school or GED	Yes

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Certifications

A certification is a type of non-degree credential that demonstrates proficiency and knowledge, through examination, in a specific industry or trade. Evaluating candidates for certification relies on independent, third-party professional and industry-based groups. These national organizations develop and maintain relevant proficiency standards that are assessed and sanctioned by industry-approved examination facilities, independent of any educational institution or training program.

Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Activity Assistant Certified (AAC)[5]	Community and Social Service (21)	High school or GED[6]	No
Acute Care Nurse Practitioner (ACNP)	Healthcare Practitioners and Technical (29)	Master's degree	Yes
Adult Nurse Practitioner (ANP-BC)	Healthcare Practitioners and Technical (29)	Master's degree[6]	Yes
Advanced Cardiovascular Life Support (ACLS) Certification	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Advanced Emergency Medical Technician (AEMT)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Advanced Life Support	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Aerial Lift Certification	Construction and Extraction (47)	Bachelor's degree	Yes
Agile Certification	Business and Financial Operations (13)	Bachelor's degree	Yes
Airframe & Powerplant (A&P) Certificate	Installation, Maintenance, and Repair (49)	High school or GED[6]	Yes
American Association For Laboratory Animal Science (AALAS) Certification	Healthcare Practitioners and Technical (29)	Bachelor's degree	Yes

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
American Association Of Nurse Practitioners (AANP) Certified	Healthcare Practitioners and Technical (29)	Master's degree[6]	Yes
American Board Of Opticianry (ABO) Certified	Healthcare Practitioners and Technical (29)	High school or GED	Yes
American College Of Sports Medicine (ACSM) Certification	Healthcare Practitioners and Technical (29)	Bachelor's degree[6]	Yes
American Concrete Institute (ACI) Certification	Production (51)	High school or GED	Yes
American Institute Of Certified Planners (AICP) Certification	Life, Physical, and Social Science (19)	Bachelor's degree	Yes
American Medical Technologists (AMT) Certification	Healthcare Support (31)	Associate degree	Yes
American Nurses Credentialing Center (ANCC) Certified	Healthcare Practitioners and Technical (29)	Master's degree[6]	Yes
American Production And Inventory Control Society (APICS) Certification	Management (11)	Bachelor's degree	Yes
American Red Cross (ARC) Certification	Across many occupations	High school or GED	Yes
American Red Cross AED Certification	Healthcare Practitioners and Technical (29)	Associate degree	Yes
American Red Cross CPR Certification	Across many occupations	Associate degree	Yes
American Red Cross Lifeguard Certification	Personal Care and Service (39)	High school or GED[6]	No
American Registry For Diagnostic Medical Sonography (ARDMS) Certification	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
American Registry Of Radiologic Technologists (ARRT) Certified	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes

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American Society For Clinical Pathology (ASCP) Certification	Healthcare Practitioners and Technical (29)	Associate degree	Yes
American Society For Quality (ASQ) Certified	Architecture and Engineering (17)	Bachelor's degree	Yes
American Welding Society Certification	Production (51)	High school or GED	No
APICS Certified In Planning And Inventory Management (CPIM)	Management (11)	Bachelor's degree	Yes
APICS Certified Supply Chain Professional (CSCP)	Management (11)	Bachelor's degree	Yes
Aquatic Facility Operator (AFO) Certification	Personal Care and Service (39)	High school or GED	Yes
ARRT Computed Tomography (CT) Certification	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
ARRT Magnetic Resonance Imaging (MRI) Certification	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
ARRT Mammography (M) Certification	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
ARRT Radiography (R) Certification	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
ASE Parts Specialist Certification	Sales and Related (41)	High school or GED	No
ASNT Non-Destructive Tester	Architecture and Engineering (17)	High school or GED	No
Assistant Laboratory Animal Technician	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Associate In Risk Management (ARM)	Business and Financial Operations (13)	Bachelor's degree	Yes

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[2] Across all job postings requesting the credential.

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Associate Of The Society Of Actuaries	Computer and Mathematical (15)	Bachelor's degree[6]	Yes
Associate Safety Professional	Life, Physical, and Social Science (19)	Bachelor's degree	Yes
Association Of Proposal Management Professionals (APMP) Certification	Business and Financial Operations (13)	Bachelor's degree	Yes
Athletics And Fitness Association Of America (AFAA) Certification	Personal Care and Service (39)	High school or GED[6]	No
Automated External Defibrillator (AED) Certification	Across many occupations	High school or GED	Yes
Automotive Service Excellence (ASE) Certification	Sales and Related (41)	High school or GED[6]	Yes
AVIXA Certified Technology Specialist	Arts, Design, Entertainment, Sports, and Media (27)	High school or GED[6]	Yes
AWS Certified Solutions Architect	Computer and Mathematical (15)	Bachelor's degree	Yes
Basic Cardiac Life Support	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Basic Life Support (BLS) Certification	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Basic Life Support Instructor (BLS-I)	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Board Certified Assistant Behavior Analyst (BCaBA)	Community and Social Service (21)	Bachelor's degree	Yes
Board Certified Behavior Analyst (BCBA)	Community and Social Service (21)	Master's degree	Yes
Board Certified In Family Medicine	Healthcare Practitioners and Technical (29)	Ph.D. or professional degree	Yes

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Board Certified In Internal Medicine	Healthcare Practitioners and Technical (29)	Ph.D. or professional degree[6]	Yes
Board Certified In Psychiatry	Healthcare Practitioners and Technical (29)	Master's degree[6]	Yes
Board Certified In Radiology	Healthcare Practitioners and Technical (29)	Master's degree[6]	Yes
Board Certified/Board Eligible	Healthcare Practitioners and Technical (29)	Ph.D. or professional degree[6]	Yes
Cardiac Advanced Life Support	Healthcare Practitioners and Technical (29)	Bachelor's degree[6]	Yes
Cardiopulmonary Resuscitation (CPR) Certification	Across many occupations	High school or GED[6]	Yes
Certificate Of Clinical Competence In Speech-Language Pathology (CCC-SLP)	Healthcare Practitioners and Technical (29)	Master's degree	Yes
Certification Board For Sterile Processing And Distribution (CBSPD) Certification	Healthcare Support (31)	High school or GED	No
Certification Of Capability In Business Analysis (CCBA)	Business and Financial Operations (13)	Bachelor's degree	Yes
Certified Anti-Money Laundering Specialist	Business and Financial Operations (13)	Bachelor's degree	Yes
Certified Apartment Manager (CAM)	Management (11)	High school or GED	Yes
Certified Arborist	Life, Physical, and Social Science (19)	High school or GED[6]	Yes
Certified Associate In Project Management	Business and Financial Operations (13)	Bachelor's degree	Yes

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified Athletic Trainer (ATC)	Healthcare Practitioners and Technical (29)	Bachelor's degree	Yes
Certified Business Analysis Professional (CBAP)	Business and Financial Operations (13)	Bachelor's degree	Yes
Certified Case Manager (CCM)	Healthcare Practitioners and Technical (29)	Bachelor's degree	Yes
Certified Clinical Documentation Specialist (CCDS)	Healthcare Practitioners and Technical (29)	Bachelor's degree[6]	Yes
Certified Clinical Medical Assistant (CCMA)	Healthcare Support (31)	Associate degree	Yes
Certified Clinical Research Associate (CCRA)	Management (11)	Bachelor's degree	Yes
Certified Clinical Research Coordinator (CCRC)	Management (11)	Bachelor's degree	Yes
Certified Clinical Research Professional (CCRP)	Management (11)	Associate degree	Yes
Certified Cloud Security Professional (CCSP)	Computer and Mathematical (15)	Bachelor's degree	Yes
Certified Coding Specialist - Physician-Based (CCS-P)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Certified Coding Specialist (CCS)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Certified Compensation Professional	Management (11)	Bachelor's degree	Yes
Certified Crane Operator	Transportation and Material Moving (53)	High school or GED	Yes
Certified Dental Assistant	Healthcare Support (31)	High school or GED[6]	Yes

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified Diabetes Educator (CDE)	Community and Social Service (21)	Bachelor's degree	Yes
Certified Dialysis Nurse (CDN)	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Certified Dietary Manager (CDM)	Food Preparation and Serving Related (35)	Associate degree	Yes
Certified Disability Management Specialist (CDMS)	Healthcare Practitioners and Technical (29)	Bachelor's degree	Yes
Certified Documentation Improvement Practitioner (CDIP)	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Certified Emergency Nurse (CEN)	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Certified Employee Benefit Specialist	Management (11)	Bachelor's degree	Yes
Certified Energy Manager	Architecture and Engineering (17)	Bachelor's degree	Yes
Certified Ethical Hacker	Computer and Mathematical (15)	Bachelor's degree	Yes
Certified Financial Planner	Business and Financial Operations (13)	Bachelor's degree	Yes
Certified Financial Risk Management	Business and Financial Operations (13)	Bachelor's degree	Yes
Certified First Responder (CFR)	Protective Service (33)	High school or GED	Yes
Certified Fitness Trainer	Personal Care and Service (39)	High school or GED[6]	No
Certified Forester	Life, Physical, and Social Science (19)	Bachelor's degree	No

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified Fraud Examiner	Business and Financial Operations (13)	Bachelor's degree	Yes
Certified Fund Raising Executive (CFRE)	Management (11)	Bachelor's degree	Yes
Certified Hazardous Materials Manager (CHMM)	Life, Physical, and Social Science (19)	Bachelor's degree	Yes
Certified Hemodialysis Technologist/Technician (CHT)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Certified Home Health Aide	Healthcare Support (31)	High school or GED	No
Certified Hospice And Palliative Nurse (CHPN)	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Certified In Risk And Information Systems Control	Computer and Mathematical (15)	Bachelor's degree	Yes
Certified In The Governance Of Enterprise IT	Computer and Mathematical (15)	Bachelor's degree	Yes
Certified Industrial Hygienist (CIH)	Architecture and Engineering (17)	Bachelor's degree	Yes
Certified Infection Control (CIC)	Life, Physical, and Social Science (19)	Associate degree	Yes
Certified Information Privacy Professional (CIPP)	Computer and Mathematical (15)	Bachelor's degree	Yes
Certified Information Security Manager	Computer and Mathematical (15)	Bachelor's degree	Yes
Certified Information Systems Auditor (CISA)	Computer and Mathematical (15)	Bachelor's degree	Yes
Certified Information Systems Security Professional	Computer and Mathematical (15)	Bachelor's degree	Yes

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified Inpatient Coder (CIC)	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Certified Internal Auditor	Business and Financial Operations (13)	Bachelor's degree	Yes
Certified Management Accountant	Management (11)	Bachelor's degree	Yes
Certified Medical Assistant (CMA)	Healthcare Support (31)	High school or GED	Yes
Certified Medical-Surgical Registered Nurse (CMSRN)	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Certified Meeting Professional (CMP)	Business and Financial Operations (13)	Bachelor's degree	Yes
Certified Nephrology Nurse (CNN)	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Certified Nuclear Medicine Technologist	Healthcare Practitioners and Technical (29)	Bachelor's degree	Yes
Certified Nurse Midwife (CNM)	Healthcare Practitioners and Technical (29)	Master's degree	Yes
Certified Nursing Assistant (CNA)	Healthcare Support (31)	High school or GED	Yes
Certified Occupational Therapy Assistant	Healthcare Support (31)	Associate degree[6]	Yes
Certified Ophthalmic Assistant	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Certified Ophthalmic Medical Technologist	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Certified Ophthalmic Technician	Healthcare Practitioners and Technical (29)	High school or GED	Yes

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Certified Outpatient Coder (COC)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Certified Patient Care Technician (CPCT)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Certified Payroll Professional (CPP)	Office and Administrative Support (43)	Bachelor's degree	Yes
Certified Perioperative Nurse (CNOR)	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Certified Phlebotomy Technician	Healthcare Support (31)	High school or GED	No
Certified Pool & Spa Operator	Personal Care and Service (39)	High school or GED	Yes
Certified Professional Coder - Apprentice (CPC-A)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Certified Professional Coder (CPC)	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Certified Professional Coder-Payer (CPC-P)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Certified Professional In Supply Management (CPSM)	Management (11)	Bachelor's degree	Yes
Certified Professional Medical Auditor	Healthcare Practitioners and Technical (29)	Bachelor's degree[6]	Yes
Certified Property Manager (CPM)	Management (11)	High school or GED	Yes
Certified Protection Professional	Management (11)	High school or GED	Yes
Certified Psychiatric Rehabilitation Practitioner	Community and Social Service (21)	Bachelor's degree	Yes

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified Purchasing Manager[5]	Management (11)	Bachelor's degree	Yes
Certified Quality Auditor	Architecture and Engineering (17)	Bachelor's degree	Yes
Certified Quality Engineer	Architecture and Engineering (17)	Bachelor's degree	Yes
Certified Quality Technician	Production (51)	High school or GED	No
Certified Radiologic Technologist/Technician	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Certified Registered Central Service Technician (CRCST)	Healthcare Support (31)	High school or GED	Yes
Certified Registered Nurse Anesthetist (CRNA)	Healthcare Practitioners and Technical (29)	Master's degree[6]	Yes
Certified Regulatory Compliance Manager	Business and Financial Operations (13)	Bachelor's degree	Yes
Certified Rehabilitation Registered Nurse (CRRN)	Healthcare Practitioners and Technical (29)	Bachelor's degree[6]	Yes
Certified Respiratory Therapist (CRT)	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Certified Risk Adjustment Coder (CRC)	Healthcare Practitioners and Technical (29)	Bachelor's degree	Yes
Certified Safety Professional (CSP)	Life, Physical, and Social Science (19)	Bachelor's degree	Yes
Certified Scrum Master	Computer and Mathematical (15)	Bachelor's degree	Yes
Certified Scrum Product Owner	Computer and Mathematical (15)	Bachelor's degree	Yes

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Certified Strength And Conditioning Specialist	Healthcare Practitioners and Technical (29)	Bachelor's degree	No
Certified Surgical Assistant	Healthcare Practitioners and Technical (29)	High school or GED[6]	Yes
Certified Surgical First Assistant (CSFA)	Healthcare Practitioners and Technical (29)	High school or GED[6]	Yes
Certified Surgical Technologist (CST)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Certified Therapeutic Recreation Specialist	Healthcare Practitioners and Technical (29)	Bachelor's degree	Yes
Certified Treasury Professional	Business and Financial Operations (13)	Bachelor's degree	Yes
Certified Trust And Fiduciary Advisor (CTFA)	Business and Financial Operations (13)	Bachelor's degree	Yes
Certified Veterinary Technician	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Certified Welding Inspector	Construction and Extraction (47)	High school or GED	Yes
Change Management Certification	Business and Financial Operations (13)	Bachelor's degree	Yes
Chartered Financial Consultant (CHFC)	Business and Financial Operations (13)	Bachelor's degree	Yes
Chartered Life Underwriter	Business and Financial Operations (13)	Bachelor's degree	Yes
Chartered Property Casualty Underwriter	Business and Financial Operations (13)	Bachelor's degree	Yes
Cisco Certified Entry Networking Technician[5]	Computer and Mathematical (15)	Associate degree	Yes

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Cisco Certified Internetwork Expert	Computer and Mathematical (15)	Bachelor's degree	Yes
Cisco Certified Network Associate	Computer and Mathematical (15)	Bachelor's degree	Yes
Cisco Certified Network Professional	Computer and Mathematical (15)	Bachelor's degree	Yes
Clinical Nurse Specialist (CNS)	Healthcare Practitioners and Technical (29)	Master's degree	Yes
CompTIA A+	Computer and Mathematical (15)	Associate degree	Yes
CompTIA Certification	Computer and Mathematical (15)	High school or GED	Yes
CompTIA Cybersecurity Analyst (CySA+)	Computer and Mathematical (15)	Bachelor's degree	Yes
CompTIA Network+	Computer and Mathematical (15)	Bachelor's degree	Yes
CompTIA Security+	Computer and Mathematical (15)	Bachelor's degree	Yes
Construction Health And Safety Technician (CHST)	Life, Physical, and Social Science (19)	High school or GED	Yes
CPR/AED For The Professional Rescuer	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Critical Care Registered Nurse (CCRN)	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Dietetic Technician Registered (DTR/NDTR)	Healthcare Practitioners and Technical (29)	Associate degree	No
DOT Certification	Transportation and Material Moving (53)	High school or GED[6]	Yes

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
DOT Certified Medical Examiner	Healthcare Practitioners and Technical (29)	Bachelor's degree	Yes
Emergency Medical Responder (EMR)	Protective Service (33)	High school or GED	Yes
Emergency Medical Technician - Basic (EMT-B)	Healthcare Practitioners and Technical (29)	High school or GED[6]	Yes
Emergency Medical Technician (EMT)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
EPA 608 Technician Certification	Installation, Maintenance, and Repair (49)	High school or GED	Yes
EPA Section 608 Technician Certification	Installation, Maintenance, and Repair (49)	High school or GED	Yes
EPA Type II Certification	Installation, Maintenance, and Repair (49)	High school or GED	Yes
EPA Universal Certification	Installation, Maintenance, and Repair (49)	High school or GED	Yes
Epic EMR Certification	Computer and Mathematical (15)	Bachelor's degree[6]	Yes
Expanded Functions Dental Assistant	Healthcare Support (31)	High school or GED[6]	Yes
Family Nurse Practitioner (FNP)	Healthcare Practitioners and Technical (29)	Master's degree[6]	Yes
Fellow Of The Society of Actuaries	Computer and Mathematical (15)	Bachelor's degree[6]	Yes
Fellow, Life Management Institute	Business and Financial Operations (13)	Bachelor's degree	Yes
Firefighter I Certification	Protective Service (33)	High school or GED	No

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Firefighter II Certification	Protective Service (33)	High school or GED	Yes
First Aid Certification	Across many occupations	High school or GED[6]	Yes
Food Handler's Card	Food Preparation and Serving Related (35)	High school or GED[6]	Yes
Food Protection Manager Certification	Management (11)	High school or GED[6]	Yes
Food Safety Certification	Food Preparation and Serving Related (35)	High school or GED[6]	Yes
Forklift Certification	Transportation and Material Moving (53)	High school or GED	Yes
Fundamental Payroll Certification (FPC)	Office and Administrative Support (43)	High school or GED	Yes
Gerontological Nurse Practitioner (GNP-BC)	Healthcare Practitioners and Technical (29)	Master's degree[6]	Yes
GIAC Certifications	Computer and Mathematical (15)	Bachelor's degree	Yes
GIAC Certified Forensic Examiner	Protective Service (33)	Associate degree	Yes
GIAC Certified Forensics Analyst	Computer and Mathematical (15)	Bachelor's degree	Yes
GIAC Certified Incident Handler	Computer and Mathematical (15)	Bachelor's degree	Yes
GIAC Certified Intrusion Analyst	Computer and Mathematical (15)	Bachelor's degree	Yes
GIAC Security Essentials Certification (GSEC)	Computer and Mathematical (15)	Bachelor's degree	Yes

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Global Career Development Facilitator	Community and Social Service (21)	Bachelor's degree	Yes
Group Fitness Instructor Certification	Personal Care and Service (39)	High school or GED[6]	No
Hazard Analysis And Critical Control Point (HACCP) Certification	Management (11)	Bachelor's degree	Yes
Hazardous Materials Certification	Transportation and Material Moving (53)	High school or GED	Yes
Hazardous Materials Certification - Operations Level	Protective Service (33)	High school or GED	No
HAZWOPER Certification	Life, Physical, and Social Science (19)	Bachelor's degree	Yes
Healthcare Financial Management Association (HFMA) Certification	Management (11)	High school or GED	Yes
Healthcare Sterile Processing Association (HSPA) Certification	Healthcare Support (31)	High school or GED	No
HVAC Certification	Installation, Maintenance, and Repair (49)	High school or GED	Yes
Immunization Certification	Healthcare Practitioners and Technical (29)	Bachelor's degree	Yes
Institute For Supply Management (ISM) Certifications	Management (11)	Bachelor's degree	Yes
Institute Of Inspection Cleaning And Restoration Certification	Installation, Maintenance, and Repair (49)	High school or GED[6]	No
Institute Of Internal Auditors (IIA) Certification	Business and Financial Operations (13)	Bachelor's degree	Yes
International Board Certified Lactation Consultant (IBCLC)	Community and Social Service (21)	Associate degree[6]	Yes

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[5]This credential is no longer offered; new credentials that supersede it may have value to employers.
[6]Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
International Institute Of Business Analysis (IIBA) Certifications	Business and Financial Operations (13)	Bachelor's degree	Yes
ITIL Certifications	Computer and Mathematical (15)	Bachelor's degree	Yes
ITIL Foundation Certification	Computer and Mathematical (15)	Bachelor's degree	Yes
IV (Intravenous) Certification	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Journeyman Lineman[4]	Installation, Maintenance, and Repair (49)	High school or GED	Yes
Lean Certification	Computer and Mathematical (15)	Bachelor's degree	Yes
Lean Six Sigma Black Belt	Computer and Mathematical (15)	Bachelor's degree	Yes
Lean Six Sigma Certification	Computer and Mathematical (15)	Bachelor's degree	Yes
LEED Accredited Professional (AP)	Architecture and Engineering (17)	Bachelor's degree	Yes
Lifeguard Certification	Personal Care and Service (39)	High school or GED[6]	Yes
Magnetic Resonance Imaging (MRI) Certification	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Medical Coding Certification	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Medical Laboratory Scientist (MLS-ASCP)	Life, Physical, and Social Science (19)	Associate degree	Yes
Medical Laboratory Technician (MLT-ASCP)	Healthcare Practitioners and Technical (29)	Associate degree	Yes

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Medical Technologist Certification	Life, Physical, and Social Science (19)	Associate degree	Yes
Medication Administration Certification	Healthcare Support (31)	High school or GED	No
Microsoft Azure Certification	Computer and Mathematical (15)	Bachelor's degree	Yes
Microsoft Certified Professional[5]	Computer and Mathematical (15)	Bachelor's degree	Yes
Microsoft Certified Systems Engineer[5]	Computer and Mathematical (15)	Bachelor's degree	Yes
Music Therapist - Board Certified (MT-BC)	Healthcare Practitioners and Technical (29)	Bachelor's degree	Yes
NATE Certification (North American Technician Excellence)	Installation, Maintenance, and Repair (49)	High school or GED[6]	Yes
National Board for Certification in Occupational Therapy (NBCOT) Certified	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
National Center For Construction Education & Research (NCCER) Certification	Construction and Extraction (47)	High school or GED[6]	Yes
National Healthcareer Association (NHA) Certified Clinical Medical Assistant (CCMA)	Healthcare Support (31)	High school or GED	Yes
National Healthcareer Association (NHA) Certified Pharmacy Technician (CPhT)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
National Healthcareer Association (NHA) Certified Phlebotomy Technician (CPT)	Healthcare Support (31)	High school or GED	Yes

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Nationally Registered Emergency Medical Technician (NREMT)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Nationally Registered Paramedic (NRP)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Neonatal Nurse Practitioner	Healthcare Practitioners and Technical (29)	Master's degree[6]	Yes
Neonatal Resuscitation Program Certification (NRP)	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
NICET Certification (National Institute For Certification In Engineering Technologies)	Installation, Maintenance, and Repair (49)	High school or GED	Yes
NICET Level II Certification	Installation, Maintenance, and Repair (49)	High school or GED	Yes
NIH Stroke Scale (NIHSS) Certification	Healthcare Practitioners and Technical (29)	Associate degree	Yes
NIST Cybersecurity Framework (CSF)	Computer and Mathematical (15)	Bachelor's degree	Yes
Nitrous Oxide Certification	Healthcare Practitioners and Technical (29)	High school or GED[6]	Yes
North American Board of Certified Energy Practitioners (NABCEP) Certification	Architecture and Engineering (17)	Bachelor's degree	Yes
Nurse Practitioner (APRN-CNP)	Healthcare Practitioners and Technical (29)	Master's degree[6]	Yes
Occupational Hygiene and Safety Technician (OHST)	Life, Physical, and Social Science (19)	Bachelor's degree[6]	Yes
Offensive Security Certified Professional	Computer and Mathematical (15)	Bachelor's degree	Yes

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Oncology Certified Nurse (OCN)	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Pallet Jack Certification	Transportation and Material Moving (53)	High school or GED	No
Paramedic (EMT-P)	Healthcare Practitioners and Technical (29)	High school or GED[6]	Yes
Pediatric Advanced Life Support (PALS)	Healthcare Practitioners and Technical (29)	Bachelor's degree[6]	Yes
Personal Care Assistance (PCA) Certification	Educational Instruction and Library (25)	High school or GED	No
Personal Trainer Certification	Personal Care and Service (39)	High school or GED	Yes
Pharmacy Technician Certification	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Phlebotomy Certification	Healthcare Support (31)	High school or GED	Yes
Physician Assistant - Certified (PA-C)	Healthcare Practitioners and Technical (29)	Master's degree[6]	Yes
PMI Agile Certified Practitioner	Business and Financial Operations (13)	Bachelor's degree	Yes
PMI Professional in Business Analysis (PMI-PBA)	Business and Financial Operations (13)	Bachelor's degree	Yes
Professional in Human Resources	Management (11)	Bachelor's degree	Yes
Program Management Professional (PgMP)	Business and Financial Operations (13)	Bachelor's degree	Yes
Project Management Certification	Business and Financial Operations (13)	Bachelor's degree	Yes

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Project Management Professional Certification	Business and Financial Operations (13)	Bachelor's degree	Yes
Psychiatric-Mental Health Nurse Practitioner (PMHNP-BC)	Healthcare Practitioners and Technical (29)	Master's degree	Yes
Radiology Certified Coder	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Registered Behavior Technician (RBT)	Educational Instruction and Library (25)	High school or GED	Yes
Registered Cardiac Electrophysiology Specialist (RCES)	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Registered Cardiac Sonographer (RCS)	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Registered Cardiovascular Invasive Specialist (RCIS)	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Registered Dental Assistant	Healthcare Support (31)	High school or GED	Yes
Registered Diagnostic Cardiac Sonographer (RDCS)	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Registered Diagnostic Medical Sonographer (RDMS)	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Registered Health Information Administrator (RHIA)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Registered Health Information Technician (RHIT)	Healthcare Practitioners and Technical (29)	High school or GED	Yes
Registered Medical Assistant (RMA)	Healthcare Support (31)	Associate degree	Yes
Registered Polysomnographic Technologist	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Registered Respiratory Therapist (RRT)	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Registered Technologist	Healthcare Practitioners and Technical (29)	High school or GED[6]	Yes
Registered Vascular Technologist (RVT)	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Salesforce Certification	Computer and Mathematical (15)	Bachelor's degree	Yes
Salesforce Certified Administrator	Computer and Mathematical (15)	Bachelor's degree	Yes
Senior Professional In Human Resources	Management (11)	Bachelor's degree	Yes
ServSafe Certification	Food Preparation and Serving Related (35)	High school or GED	Yes
SHRM-CP (Society for Human Resource Management Certified Professional)	Management (11)	Bachelor's degree	Yes
SHRM-SCP (Society for Human Resource Management Senior Certified Professional)	Management (11)	Bachelor's degree	Yes
Six Sigma Black Belt	Computer and Mathematical (15)	Bachelor's degree	Yes
Six Sigma Certification	Computer and Mathematical (15)	Bachelor's degree	Yes
Six Sigma Green Belt	Architecture and Engineering (17)	Bachelor's degree	Yes
SQF (Safe Quality Food) Practitioner	Management (11)	Bachelor's degree	Yes

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Certification	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Systems Security Certified Practitioner	Computer and Mathematical (15)	Bachelor's degree	Yes
VMware Certified Professional (VCP)	Computer and Mathematical (15)	Bachelor's degree	Yes
Water Safety Instructor Certification	Arts, Design, Entertainment, Sports, and Media (27)	High school or GED[6]	No

Other Non-Degree Credentials

Additional specific categories had too few credentials to be presented on their own. This "other non-degree credential" group contains certificates, diplomas, course completions, exams and others:

- A certificate may be awarded by either an educational institution or independent education and training provider associated with specific programs of study.
- Diplomas are earned after completing short curricula of at least 45 quarter credits or 30 semester credits.
- Completion of specific courses are sometimes requested by employers, as are exams that must be passed but do not result in a specific certification.

Other Non-Degree Credential	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
10-Hour OSHA General Industry Card	Across many occupations	High school or GED	Yes
30-Hour OSHA Construction Card	Management (11)	High school or GED	No
30-Hour OSHA General Industry Card	Construction and Extraction (47)	High school or GED	Yes

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Other Non-Degree Credential	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Actuarial Exams	Computer and Mathematical (15)	Bachelor's degree	Yes
Advanced Trauma Life Support (ATLS)	Healthcare Practitioners and Technical (29)	Bachelor's degree[6]	Yes
Airline Transport Pilot License	Transportation and Material Moving (53)	High school or GED[6]	Yes
Architect Registration Examination	Architecture and Engineering (17)	Bachelor's degree	Yes
Certified Flight Instructor	Transportation and Material Moving (53)	Bachelor's degree[6]	Yes
Chartered Financial Analyst	Business and Financial Operations (13)	Bachelor's degree	Yes
Community Health Worker Certificate	Community and Social Service (21)	High school or GED	Yes
Diploma In Nursing	Healthcare Practitioners and Technical (29)	N/A	Yes
Drone Pilot Certificate	Architecture and Engineering (17)	Bachelor's degree[6]	Yes
Emergency Nurse Pediatric Course (ENPC)	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Emergency Vehicle Operator Course (EVOC)	Healthcare Practitioners and Technical (29)	Associate degree[6]	Yes
Enrolled Agent (EA)	Business and Financial Operations (13)	Bachelor's degree	Yes
FAA Instrument Rating	Transportation and Material Moving (53)	High school or GED[6]	Yes
FINRA Series 24 (General Securities Principal)	Business and Financial Operations (13)	Bachelor's degree	Yes

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Other Non-Degree Credential	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
FINRA Series 63 (Uniform Securities Agent State Law)	Sales and Related (41)	Bachelor's degree[6]	Yes
FINRA Series 65 (Uniform Investment Adviser Law)	Sales and Related (41)	Bachelor's degree[6]	Yes
FINRA Series 66 (Uniform Combined State Law)	Business and Financial Operations (13)	Bachelor's degree[6]	Yes
FINRA Series 7 (General Securities Representative)	Business and Financial Operations (13)	Bachelor's degree	Yes
Hazardous Materials Certification - Awareness Level	Construction and Extraction (47)	High school or GED	Yes
Local Anesthesia Course Completion	Healthcare Practitioners and Technical (29)	High school or GED[6]	Yes
Minnesota State Bar Association Membership	Legal (23)	Ph.D. or professional degree	Yes
National Council Licensure Examination	Healthcare Practitioners and Technical (29)	Associate degree	Yes
OSHA Certification	Life, Physical, and Social Science (19)	High school or GED	Yes
Pediatric Emergency Assessment Recognition And Stabilization (PEARS)	Healthcare Practitioners and Technical (29)	Associate degree	Yes
Private Pilot License	Transportation and Material Moving (53)	Bachelor's degree	Yes
Trauma Nurse Core Course (TNCC)	Healthcare Practitioners and Technical (29)	Bachelor's degree[6]	Yes

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Industry Feedback

Industry leaders in construction, healthcare and information technology met to review lists of credentials derived from job posting analysis for their fields. While the scope of this project did not allow for comprehensive review of credentials from all industries, these three fields were prioritized given the importance of credentials to healthcare, the rapid pace of change in information technology, and the known limitations of job posting data for the construction industry. Advisors' feedback was used to flag credentials for further review and possible exclusion, not to source additional credentials for this report.

Construction

Construction roles are known to be underrepresented in job posting data, so analysis of construction credentials that relies on job posting analysis, such as this one, will likely only tell part of the story. Industry leaders confirmed this. A prominent reason for the lower quality of data in construction is that some roles are heavily unionized—and unionized roles are not likely to be advertised online with the same frequency as non-unionized roles (employers often source these roles from union hiring halls rather than public, online job postings).

This job posting analysis yielded a short list of credentials related to construction occupations. Industry advisors felt that the credentials for roles they were familiar with were appropriate, but that the list lacked other important credentials. Leaders also flagged the importance of mental health awareness training for all occupations the construction industry.

Healthcare

Healthcare occupations had the largest number of credentials compared to any other field; advisors reviewed over 150 credentials identified in job postings. Healthcare leaders generally agreed that the job posting analysis captured relevant and important credentials well.

Information Technology

Information Technology (IT) careers are constantly evolving given the rapid pace of technological innovation, and change has only accelerated with the rise of artificial intelligence. Industry leaders shared the perspective that job postings were not the best source of information about desired qualifications for employment, given how quickly the landscape of technology, credentials and a global workforce are shifting. In their view, credentials and degrees are no longer considered to be *required* for hire, but no consensus on an alternative has emerged. Generally, credentials were seen as a positive signal that talent had gained skills and pursued knowledge, but not as a ticket to employment.

The small number of IT credentials identified in the job posting analysis were seen to be appropriate, but incomplete. In addition to the credentials listed, advisors mentioned that cloud certifications (agnostic of vendor) are highly desirable. Industry leaders also shared that talent skilled in legacy systems will be sought after, as those systems will be continued to be used in some industries where a full shift to newer technology is prohibitively expensive or impossible due to security needs or regulation.

Discussion, Strengths and Limitations of the Analysis

This project sought to identify Minnesota's non-degree credentials of value: credentials available to Minnesotans that are aligned to occupations that meet demand and wage thresholds, based on employer demand for credentials as observed in job posting data.

The analysis identified 393 non-degree credentials requested by employers for in-demand occupations that pay a family-sustaining wage or meet essential community needs. The credentials were identified in job posting data and further vetted by humans—with over half reviewed by industry leaders.

These credentials are important because of their financial value to individuals, economic value to the state, and/or the way they help meet essential community needs. "Credentials of value" is the language used here because of its resonance in national policy conversations, although there are other types of value that are meaningful to individuals and communities that were beyond the scope of this project.

The credentials listed in this report are those that could be determined to have value based on our criteria, given the available data at the time of analysis. The job market, job postings, and therefore the underlying data will change over time, and thus so will the list of credentials of value. This is a snapshot in time reflecting the current, post-pandemic economic reality of our state. Many other credentials not listed here may have value, but that value was not able to be assessed based on the available job posting information.

Job posting data is a leading indicator of labor market trends and employer behavior, but it has limitations, even when sourced from a nationally known, high-quality provider. Job postings are an indicator of employer demand and cannot be equated with a job opening or a hire. Multiple hires—or no hires at all—may result from a single posting.

The study may be limited by the availability, quality, or intensity of job posting activity in certain industries or employer types. Analysis relies on explicit statements of preferred or required credentials listed in online job postings. Employers may not always list specific credentials and education needs within job postings. Employers may view skills and knowledge interchangeably with credentials, despite listing only one or the other. Changes in job market trends during the data collection period may impact the generalizability of the findings. The job postings analyzed are specific to a particular region (Minnesota), so findings may not be applicable to other regions or nationally. For more information about job posting data and its strengths and limitations, please see the appendix.

Some occupation groups and industries are better represented by online job postings than others. Occupations that rely on union hiring halls for recruiting and hiring do not frequently advertise online and are likely underrepresented in this report. For example, job posting data used for this analysis appears to underrepresent construction trades, railroad workers, and media and communication equipment workers. Relatedly, credentials related to registered apprenticeships, such as journeyperson cards and associated licenses, are underreported in job postings because the professions they prepare learners for more often source talent through union hiring halls rather than online job posting sites.

A dual strategy was used in the assessment of occupations for inclusion, allowing occupations to meet demand criteria based on information in the Minnesota Department of Employment and Economic Development's (DEED's) list of Occupations in Demand (OID) *or* based on job posting data. OID does not assess all categories of occupations, often excluding those with a high share of seasonal work, postsecondary educators, those with six-digit SOC codes ending in "99" for "all other," and those with a high proportion of self-employment. While the types of occupations above would not have been able to be included based on OID, they had the opportunity to qualify for analysis based on job posting data.

Conclusions and Implications

Non-degree credentials are meaningful signals of employability, as evidenced by the large number of such credentials requested by employers for in-demand occupations in Minnesota. While employers often list a minimum educational requirement, they are unlikely to list specific degrees or courses of study. Non-degree credentials may be a more meaningful signal of meeting qualifications for jobs in many fields. Policymakers should continue to take note of the importance of non-degree credentials and to support learners and jobseekers in earning these credentials—independently or alongside required degree(s).

Further study could uncover other credentials that are valuable to jobseekers in Minnesota. This study focused on non-degree credentials specifically mentioned by employers in online job postings—but other data sources would reveal additional valuable credentials linked to important and in-demand occupations in the state. An analysis of in-demand skills could offer another lens on the qualifications needed to obtain employment.

Future updates of this analysis could include information about the industries tied to each credential. Diving deep into which credentials are required, versus preferred, would also be valuable.

Linking non-degree credentials of value to specific educational and training programs would be meaningful to jobseekers and learners. This analysis explored the possibility of linking credentials to programs listed on Minnesota's Career and Education Explorer, (i.e., included in the Eligible Training Provider List (ETPL)) but found that no key exists to map programs to associated credentials.

Appendix

Detailed Methodology Notes

Assessment of Occupations

First, all occupations represented by six-digit Standard Occupational Classification (SOC) codes were assessed against wage and demand criteria derived from the P-20 framework. Based on the framework, occupations in-demand (current high demand or forecasted high demand) that either pay a family-sustaining wage or meet essential community needs were included:

- In-Demand occupations are defined as roles at the 6-digit SOC classification level that meet either or both of the following criteria at the Minnesota statewide level or in any of Minnesota Department of Employment and Economic Development's (MN DEED's) six planning regions:
  - Current High Demand: Identified as an "Occupation in Demand" by the Minnesota Department of Employment and Economic Development's (MN DEED) Occupations in Demand (OID) dataset with three, four, or five stars. This is calculated based on 1) high number of job vacancies, 2) high number of existing jobs, 3) low number of unemployment insurance (UI) weeks claimed and 4) low seasonality. The formula used to calculate the quintiles for OID is: EmploymentShare + JVshare - 0.5*UIshare – 0.5*SeasonalityShare
    - Employment Share for an individual occupation is the occupation's share of total regional employment.
    - JV Share for an individual occupation represents the occupation's vacancies as a share of all vacancies reported within the region over the last two years.
    - UI Share for an individual occupation is the occupation's share of total weeks of Unemployment Insurance claimed in the region over the last year. This score is preceded by a minus sign because it is used to reduce an occupation's short-term demand.
    - Seasonality Share is preceded by a minus sign because it is used to reduce an occupation's short-term demand based on the level of seasonality within that occupation. The formula for seasonality has been calculated as follows: [(Occupation's % seasonality) * (Occupation's regional employment share)]/(Average % seasonality for all occupations)
  - Forecasted High Demand: Identified as an occupation that meets at least two of the following four criteria: 1) Forecasts higher than average growth over the next ten years; 2) Forecasts needed replacement of over half of the workforce employed as of [the current quarter's] estimates over the next five years; 3) Has an unemployment rate under 3% as of [the current quarter's] estimates; 4) Has a higher than expected volume of unique deduplicated online job postings regionally in 2024 compared to occupation's employment share. The formula to measure if an occupation has a high relative posting volume has been calculated as follows: High Relative Posting Volume = (occupation's %

of regional postings)/(occupation's % of regional jobs) >1. Forecasted High Demand was assessed using data from Chmura JobsEQ.

- Family-Sustaining Wage occupations are defined as occupations for which the median wage is equal to or higher than the full-time worker wage required for a household of three—one full-time working adult, one part-time working adult and one child—to meet basic-needs cost of living needs at the statewide or any Planning Region level in Minnesota based on the Minnesota Department of Employment and Economic Development's (MN DEED) Cost of Living Data Tool. An occupation can meet this criterion based on either of two sources: DEED's Occupations in Demand tool (statewide or in any of the six DEED planning regions) or using statewide median wages from Chmura JobsEQ. Note, occupations for which tips make up a large share of wages rely on accurate employer reporting to be assessed against the family-sustaining wage threshold. Tips included in electronic payments (which are increasingly common) are included in reported wages by default and would not impact accuracy.
- Occupations that meet essential community needs, called "Critical Occupations" in this analysis, include jobs in healthcare, direct care, K-12 and early childhood education that may not pay living wages but are vital building blocks for Minnesota and the economy. This definition is based on the Rockefeller Institute of Government's "Defining the Care Workforce" analysis. A full list of Critical Occupations is included in the appendix.

In total, 538 occupations were included in analysis. This included eight Critical Occupations that did not meet family-sustaining wage criteria.

Job Posting Data

Next, job posting data from the Help Wanted OnLine (HWOL) subset of Lightcast's dataset were pulled. Job postings included in this analysis were selected by:

- Geography: state of Minnesota, including on-site, remote and hybrid positions advertised in Minnesota
- Date: 24-month time period coinciding with calendar years 2023 and 2024 (1/1/2023-12/31/2024)
- Employer type: direct employers and staffing firms

The data included aggregate information about quantities of postings by occupations, credentials and education levels. Credential information came from Lightcast "Qualification" tagging, which indicates credentials requested by employers in job postings. These credentials may be required or preferred.

Lightcast's SOC taxonomy differs slightly from standard codes used by the U.S. Bureau of Labor Statistics. Ten of Lightcast's detailed (6-digit) occupation codes combine multiple standard SOC codes into one. In these cases, the following approach was taken:

- If none of the component (standard SOC) occupations met inclusion criteria, the Lightcast occupation was considered not to have met inclusion criteria (3 cases)

- If <u>all</u> the component (standard SOC) occupations met inclusion criteria, the Lightcast occupation was considered to have met inclusion criteria (4 cases)
- If <u>some</u> of the component (standard SOC) occupations met inclusion criteria, the Lightcast occupation was considered to have met inclusion criteria (1 case, "Postsecondary Teachers")
- If the component (standard SOC) occupations were not assessed, the Lightcast occupation was excluded from analysis (2 cases, "Military-Only Occupations" and "Unclassified Occupation," where Lightcast "cannot reliably estimate occupations due to lack of data")

Aligning Credentials to Occupations for Analysis

The resulting job posting data were then analyzed. In reviewing aggregate job posting data, the research team developed a threshold for considering a credential to be in-demand among the included occupations. This ensured that the value of credentials mentioned infrequently would not be overstated. Credentials qualified as potential credentials of value by either:

a. Appearing in at least 100 postings across included occupations; OR
b. Appearing in at least 50 postings for included occupations AND appearing in at least 1% of postings for a single included occupation

The full Lightcast data set of all job postings in Minnesota in the 24-month period for <u>all occupations</u> included 1722 credentials. After applying the thresholds by number and share of postings for included occupations, 438 credentials were considered for further vetting. Of these, 339 credentials appear in at least 100 postings across included occupations, and 419 appear in at least 50 postings for included occupations *and* appear in at least 1% of postings for a single included occupation, with significant overlap between the two categories.

Review and Refinement

Finally, each credential that qualified was reviewed in detail by the research team. The team reviewed the credential against known certifications and Minnesota state licenses (as listed in <u>CareerOneStop</u>) and verified the accuracy of the credential using desk research, including detailed review of Lightcast job postings when necessary. Three industry meetings were convened for leaders in healthcare, construction and information technology (IT) to review draft lists of credentials relevant to their fields. Industry leaders flagged credentials that they were unfamiliar with or that they did not know to be relevant to their field.

Based on feedback from construction industry leaders, Minnesota's Department of Labor and Industry and the Minnesota Chamber of Commerce, one additional license, "Boiler Engineer/Operator License" was added to the credential list, although it did not appear in the initial data pull. Based on analysis of Lightcast's job posting data using the Lightcast Developer platform, there is strong evidence that employers are requesting this occupational license at rates that meet inclusion criteria for the credentials of value list, with 286 posts in Minnesota in 2023-2024. The boiler operator license was not included in the original data because Lightcast tags "boiler operator" as a "specialized skill" but not a "qualification." The researchers have shared this information with Lightcast for potential update to their qualification taxonomy.

Credential names were lightly edited from those provided by Lightcast where needed for clarity. These changes included Americanization of British English (e.g., "license" not "licence"), matching the name of some licenses to the official names of those offered by the state of Minnesota and correcting misspellings or mistakes in the name of a credential where the Lightcast name differed from the one listed by the certifying entity.

Associating Occupation Group, Minimum Education, and Family-Sustaining Wage Information

A majority of credentials were requested in job postings for multiple occupations and occupation groups, yet a single occupation group is listed with each credential, for simplicity. To determine the occupation group that would be listed alongside each credential, the research team reviewed the detailed occupation(s) that it appeared with most commonly in job posting data.

If the occupation with the highest *count* of postings requesting the credential and the occupation with the highest *share* of job postings requesting the credential had the same two-digit SOC occupation group, that group was listed. If they did not have the same two-digit SOC, the occupation group from the highest share occupation was reviewed and used if alignment made sense. If the highest share occupation's major group did not obviously align to the credential, the two-digit SOC from the highest count occupation was used. Credentials with low counts of posts (<15) for the highest share occupation were given additional scrutiny to ensure sensible alignment of occupation group. A small number of credentials with many different affiliated two-digit SOCs were listed as "aligned to many occupations."

Typical minimum education required for each credential was assessed by reviewing all posts where the credential was requested, across all occupations. The most common minimum education required was flagged. In cases where the largest share of posts did not list any educational requirement (120 credentials), the most common minimum education among posts that did list a requirement was flagged. This may result in some cases that overstate educational requirements, but it avoids understating education requirements, as not listing an education requirement may simply be an error of omission, not an indication that no education is required. The most common minimum educational requirement listed in this report for these credentials (where the largest share of posts did not list any educational requirement) is high school or GED (51 credentials), and all such credentials have an added footnote when presented in this report.

The indicator of whether credentials are linked to a family-sustaining wage statewide was developed by calculating the number of postings requesting a credential across all occupations that meet the statewide family-sustaining wage threshold. Those credentials requested in at least 50 postings for occupations meeting the statewide family-sustaining wage threshold are flagged as providing a family-sustaining wage.

Data Sources

DEED's Occupations in Demand (OID)

The Minnesota Department of Employment and Economic Development (DEED) publishes Occupations in Demand (OID), a tool that lists occupations in each region of the state that are determined to be in highest demand based on regularly updated labor market information.

Lightcast Help Wanted OnLine® (HWOL) Data

Lightcast is a large, continuously updated dataset of online job postings that uses machine learning along with human experts to process, classify and analyze labor market information in real time. The Help Wanted OnLine® (HWOL) dataset is a more extensively vetted and deduplicated subset of Lightcast's job posting data used by The Conference Board to publish the HWOL Index, which measures changes over time in volume of advertised online job vacancies.

Benefits and Limitations of Job Posting Data

Online job posting data has both strengths and limitations as a source of demand insights. Scraping of online job postings is not comprehensive and should never be equated to a hire or job opening. However, they are a remarkable leading indicator of demand and employer behavior.

Benefits

1. Market Demand: Analyzing the volume and types of job postings can reveal which industries are growing and which skills are in high demand.
2. Skill and Credential Trends: Identifying frequently mentioned skills or credentials can help jobseekers tailor their resumes and skill development efforts.
3. Geographic Trends: Data can highlight regional job market conditions, showing where opportunities are concentrated.
4. Salary Insights: Job postings often include salary ranges, helping to benchmark compensation and understand market rates.
5. Company Insights: Frequent postings from specific companies can indicate growth, potential layoffs, or shifts in business strategy.
6. Industry Shifts: Changes in the types of positions being posted can signal broader economic trends or shifts in consumer behavior.

Limitations

1. Incomplete Data: Not all companies post jobs publicly, and some roles may be filled through internal networks or referrals. Sites that require a login password are not able to be scraped by aggregators, and sites can request to opt-out from being scraped, which creates unknown gaps in the dataset.
2. Errors in Processing Data: Job posting data providers use algorithms and models (including artificial intelligence) to deduplicate, process and analyze job posting data. While these methods glean powerful insights from a vast amount of data, they are not without error. Errors that could

impact this analysis include erroneous assignment of SOC codes to postings and errors in identifying and tagging credentials, among others. Employees of the data provider and authors of this report have vetted the data to mitigate such errors to the degree possible. Industry feedback further validates results and mitigates these potential errors.

3. <u>Quality vs. Quantity</u>: A high number of postings does not necessarily indicate a robust job market; it might reflect high turnover or poor conditions.

4. <u>Static Snapshot</u>: Job postings are often time-sensitive; a snapshot can miss longer-term trends and cyclical changes in hiring. This analysis used 24 months of data to get a robust picture of recent postings.

5. <u>Bad Faith Job Postings</u>: Job postings may not correspond to available positions. Postings may be posted with ulterior motives not related to hiring. Artificial intelligence may allow for such posts to be generated at scale or widely duplicated. Postings used for analysis have been deduplicated, yet this process may not catch all duplicates.

P-20 Credentials of Value Work Group's Quality Credentials of Value Framework

Below is the framework of quality criteria for credentials, programs and providers developed by the P-20 Credentials of Value Work Group in 2023. This analysis focused on <u>credentials</u> that met the framework's demand and wage criteria. While the other criteria outlined are important, they were not able to be assessed as part of this work.

Credential	Program	Provider
Demand: The credential meets one or more of the following demand criteria: a) It is aligned to occupations that are in demand statewide or regionally, as verified by job posting data, employer engagement, or other evidence. b) The credential represents the completion of a program that prepares individuals for a range of employment and further education opportunities and represents the attainment of essential learning outcomes valued across employers. c) The credential is associated with strong self-employment outcomes for credential holders. **Wages**: Credential is aligned to occupations that provide a family-sustaining wage either regionally or statewide, opportunity for economic mobility, or meet essential community needs. Wage outcomes should be demonstrated through job posting data, historic employment outcomes for individuals with this credential, or provider-demonstrated evidence. **Knowledge and competencies** are demonstrated/assessed and aligned with demand. **Access**: Assessments and examinations required in order to obtain the credential provide requested delivery method and appropriate accommodations for individuals with need, including but not limited to learners of English. **Encouraged – stackable credentials**: The credential is stackable to additional training or upward career mobility academic ladder and/or enhanced career path).	**Demand**: Evidence that individuals completing the program find employment at high rates in a field/profession that utilizes the skills and long-term learning outcomes gained in their education, including successful self-employment or pursuit of additional related education* if relevant. **Wages**: Evidence that individuals completing the program achieve a family-sustaining wage either regionally or statewide, have economic mobility, or are working in occupations that meet essential community needs. These measures should account for individual's part-time/full-time status and job tenure. Knowledge and competencies: a) Learning outcomes are published and meet the skills and knowledge needed in the aligned in-demand occupations. b) Programs include a clear strategy for assessing learning based on published outcomes and/or are aligned to an external examination/credential. c) Instructors are knowledgeable in program of study and teaching methods. d) Programs prioritize culturally-inclusive practices. **Access**: Programs demonstrate entry requirements are realistic, appropriate, and do not result in bias/inequitable access.	**Knowledge and competencies**: Providers are approved by OHE, accredited, or otherwise vetted by an agency, board or designated authority. **Access**: Provider has a statement of intention and resources to address diversity, equity and inclusion. Provider has wrap-around supports for student/trainee success. Providers participate in required data collection. **Encouraged – collaboration**: Prioritize state investment in providers and programs that connect services and pathways between workforce agencies, higher education and employers for the benefit of students and trainees.

Occupation Tables

All Included Occupations

Below are the 538 occupations that met criteria for inclusion in analysis (in-demand occupations that pay a family-sustaining wage or are Critical Occupations).

Six-digit SOC	Occupation Name
11-1011	Chief Executives
11-1021	General and Operations Managers
11-2021	Marketing Managers
11-2022	Sales Managers
11-2032	Public Relations Managers
11-2033	Fundraising Managers
11-3012	Administrative Services Managers
11-3013	Facilities Managers
11-3021	Computer and Information Systems Managers
11-3031	Financial Managers
11-3051	Industrial Production Managers
11-3061	Purchasing Managers
11-3071	Transportation, Storage, and Distribution Managers
11-3111	Compensation and Benefits Managers
11-3121	Human Resources Managers
11-3131	Training and Development Managers
11-9013	Farmers, Ranchers, and Other Agricultural Managers
11-9021	Construction Managers
11-9031	Education and Childcare Administrators, Preschool and Daycare
11-9032	Education Administrators, Kindergarten through Secondary
11-9033	Education Administrators, Postsecondary
11-9041	Architectural and Engineering Managers
11-9051	Food Service Managers
11-9071	Gambling Managers
11-9072	Entertainment and Recreation Managers, Except Gambling
11-9081	Lodging Managers
11-9111	Medical and Health Services Managers
11-9121	Natural Sciences Managers
11-9141	Property, Real Estate, and Community Association Managers
11-9151	Social and Community Service Managers
11-9161	Emergency Management Directors

Six-digit SOC	Occupation Name
11-9199	Managers, All Other
13-1021	Buyers and Purchasing Agents, Farm Products
13-1022	Wholesale and Retail Buyers, Except Farm Products
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products
13-1031	Claims Adjusters, Examiners, and Investigators
13-1032	Insurance Appraisers, Auto Damage
13-1041	Compliance Officers
13-1051	Cost Estimators
13-1071	Human Resources Specialists
13-1075	Labor Relations Specialists
13-1081	Logisticians
13-1082	Project Management Specialists
13-1111	Management Analysts
13-1121	Meeting, Convention, and Event Planners
13-1131	Fundraisers
13-1141	Compensation, Benefits, and Job Analysis Specialists
13-1151	Training and Development Specialists
13-1161	Market Research Analysts and Marketing Specialists
13-1199	Business Operations Specialists, All Other
13-2011	Accountants and Auditors
13-2031	Budget Analysts
13-2041	Credit Analysts
13-2051	Financial and Investment Analysts
13-2052	Personal Financial Advisors
13-2053	Insurance Underwriters
13-2054	Financial Risk Specialists
13-2061	Financial Examiners
13-2071	Credit Counselors
13-2072	Loan Officers
13-2081	Tax Examiners and Collectors, and Revenue Agents
13-2082	Tax Preparers
13-2099	Financial Specialists, All Other
15-1211	Computer Systems Analysts
15-1212	Information Security Analysts
15-1221	Computer and Information Research Scientists
15-1231	Computer Network Support Specialists
15-1232	Computer User Support Specialists

Six-digit SOC	Occupation Name
15-1241	Computer Network Architects
15-1242	Database Administrators
15-1243	Database Architects
15-1244	Network and Computer Systems Administrators
15-1251	Computer Programmers
15-1252	Software Developers
15-1253	Software Quality Assurance Analysts and Testers
15-1254	Web Developers
15-1255	Web and Digital Interface Designers
15-1299	Computer Occupations, All Other
15-2011	Actuaries
15-2021	Mathematicians
15-2031	Operations Research Analysts
15-2041	Statisticians
15-2051	Data Scientists
15-2099	Mathematical Science Occupations, All Other
17-1011	Architects, Except Landscape and Naval
17-1021	Cartographers and Photogrammetrists
17-1022	Surveyors
17-2011	Aerospace Engineers
17-2021	Agricultural Engineers
17-2031	Bioengineers and Biomedical Engineers
17-2041	Chemical Engineers
17-2051	Civil Engineers
17-2061	Computer Hardware Engineers
17-2071	Electrical Engineers
17-2072	Electronics Engineers, Except Computer
17-2081	Environmental Engineers
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors
17-2112	Industrial Engineers
17-2131	Materials Engineers
17-2141	Mechanical Engineers
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
17-2199	Engineers, All Other
17-3011	Architectural and Civil Drafters
17-3012	Electrical and Electronics Drafters
17-3013	Mechanical Drafters

Six-digit SOC	Occupation Name
17-3021	Aerospace Engineering and Operations Technologists and Technicians
17-3022	Civil Engineering Technologists and Technicians
17-3023	Electrical and Electronic Engineering Technologists and Technicians
17-3024	Electro-Mechanical and Mechatronics Technologists and Technicians
17-3025	Environmental Engineering Technologists and Technicians
17-3026	Industrial Engineering Technologists and Technicians
17-3027	Mechanical Engineering Technologists and Technicians
17-3028	Calibration Technologists and Technicians
17-3029	Engineering Technologists and Technicians, Except Drafters, All Other
17-3031	Surveying and Mapping Technicians
19-1012	Food Scientists and Technologists
19-1013	Soil and Plant Scientists
19-1021	Biochemists and Biophysicists
19-1022	Microbiologists
19-1023	Zoologists and Wildlife Biologists
19-1029	Biological Scientists, All Other
19-1031	Conservation Scientists
19-1032	Foresters
19-1041	Epidemiologists
19-1042	Medical Scientists, Except Epidemiologists
19-2011	Astronomers
19-2012	Physicists
19-2021	Atmospheric and Space Scientists
19-2031	Chemists
19-2032	Materials Scientists
19-2041	Environmental Scientists and Specialists, Including Health
19-2042	Geoscientists, Except Hydrologists and Geographers
19-2043	Hydrologists
19-3011	Economists
19-3032	Industrial-Organizational Psychologists
19-3033	Clinical and Counseling Psychologists
19-3034	School Psychologists
19-3039	Psychologists, All Other
19-3051	Urban and Regional Planners
19-3091	Anthropologists and Archeologists
19-3093	Historians
19-4012	Agricultural Technicians

Six-digit SOC	Occupation Name
19-4013	Food Science Technicians
19-4021	Biological Technicians
19-4031	Chemical Technicians
19-4042	Environmental Science and Protection Technicians, Including Health
19-4043	Geological Technicians, Except Hydrologic Technicians
19-4044	Hydrologic Technicians
19-4061	Social Science Research Assistants
19-4071	Forest and Conservation Technicians
19-4092	Forensic Science Technicians
19-5011	Occupational Health and Safety Specialists
19-5012	Occupational Health and Safety Technicians
21-1012	Educational, Guidance, and Career Counselors and Advisors
21-1013	Marriage and Family Therapists
21-1015	Rehabilitation Counselors
21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors
21-1019	Counselors, All Other
21-1021	Child, Family, and School Social Workers
21-1022	Healthcare Social Workers
21-1023	Mental Health and Substance Abuse Social Workers
21-1029	Social Workers, All Other
21-1091	Health Education Specialists
21-1092	Probation Officers and Correctional Treatment Specialists
21-1093	Social and Human Service Assistants
21-1094	Community Health Workers
23-1011	Lawyers
23-1012	Judicial Law Clerks
23-2011	Paralegals and Legal Assistants
23-2099	Legal Support Workers, All Other
25-1011	Business Teachers, Postsecondary
25-1031	Architecture Teachers, Postsecondary
25-1032	Engineering Teachers, Postsecondary
25-1042	Biological Science Teachers, Postsecondary
25-1043	Forestry and Conservation Science Teachers, Postsecondary
25-1053	Environmental Science Teachers, Postsecondary
25-1067	Sociology Teachers, Postsecondary
25-1071	Health Specialties Teachers, Postsecondary
25-1072	Nursing Instructors and Teachers, Postsecondary

Six-digit SOC	Occupation Name
25-1121	Art, Drama, and Music Teachers, Postsecondary
25-1124	Foreign Language and Literature Teachers, Postsecondary
25-1192	Family and Consumer Sciences Teachers, Postsecondary
25-1193	Recreation and Fitness Studies Teachers, Postsecondary
25-1194	Career/Technical Education Teachers, Postsecondary
25-2011	Preschool Teachers, Except Special Education
25-2012	Kindergarten Teachers, Except Special Education
25-2021	Elementary School Teachers, Except Special Education
25-2022	Middle School Teachers, Except Special and Career/Technical Education
25-2023	Career/Technical Education Teachers, Middle School
25-2031	Secondary School Teachers, Except Special and Career/Technical Education
25-2032	Career/Technical Education Teachers, Secondary School
25-2051	Special Education Teachers, Preschool
25-2052	Special Education Teachers, Kindergarten and Elementary School
25-2057	Special Education Teachers, Middle School
25-2058	Special Education Teachers, Secondary School
25-2059	Special Education Teachers, All Other
25-3011	Adult Basic Education, Adult Secondary Education, and English as a Second Language Instructors
25-3021	Self-Enrichment Teachers
25-3031	Substitute Teachers, Short-Term
25-3041	Tutors
25-3099	Teachers and Instructors, All Other
25-4011	Archivists
25-4012	Curators
25-4022	Librarians and Media Collections Specialists
25-4031	Library Technicians
25-9031	Instructional Coordinators
25-9044	Teaching Assistants, Postsecondary
25-9045	Teaching Assistants, Except Postsecondary
27-1024	Graphic Designers
27-1025	Interior Designers
27-2012	Producers and Directors
27-2021	Athletes and Sports Competitors
27-2022	Coaches and Scouts
27-2032	Choreographers
27-3031	Public Relations Specialists

Six-digit SOC	Occupation Name
27-3041	Editors
27-3042	Technical Writers
27-3091	Interpreters and Translators
27-4011	Audio and Video Technicians
29-1011	Chiropractors
29-1021	Dentists, General
29-1022	Oral and Maxillofacial Surgeons
29-1023	Orthodontists
29-1031	Dietitians and Nutritionists
29-1041	Optometrists
29-1051	Pharmacists
29-1071	Physician Assistants
29-1122	Occupational Therapists
29-1123	Physical Therapists
29-1124	Radiation Therapists
29-1125	Recreational Therapists
29-1126	Respiratory Therapists
29-1127	Speech-Language Pathologists
29-1128	Exercise Physiologists
29-1129	Therapists, All Other
29-1131	Veterinarians
29-1141	Registered Nurses
29-1151	Nurse Anesthetists
29-1161	Nurse Midwives
29-1171	Nurse Practitioners
29-1181	Audiologists
29-1211	Anesthesiologists
29-1212	Cardiologists
29-1213	Dermatologists
29-1214	Emergency Medicine Physicians
29-1215	Family Medicine Physicians
29-1216	General Internal Medicine Physicians
29-1217	Neurologists
29-1218	Obstetricians and Gynecologists
29-1221	Pediatricians, General
29-1223	Psychiatrists
29-1224	Radiologists

Six-digit SOC	Occupation Name
29-1229	Physicians, All Other
29-1241	Ophthalmologists, Except Pediatric
29-1242	Orthopedic Surgeons, Except Pediatric
29-1249	Surgeons, All Other
29-1291	Acupuncturists
29-1292	Dental Hygienists
29-2011	Medical and Clinical Laboratory Technologists
29-2012	Medical and Clinical Laboratory Technicians
29-2031	Cardiovascular Technologists and Technicians
29-2032	Diagnostic Medical Sonographers
29-2034	Radiologic Technologists and Technicians
29-2035	Magnetic Resonance Imaging Technologists
29-2042	Emergency Medical Technicians
29-2043	Paramedics
29-2051	Dietetic Technicians
29-2052	Pharmacy Technicians
29-2053	Psychiatric Technicians
29-2055	Surgical Technologists
29-2056	Veterinary Technologists and Technicians
29-2057	Ophthalmic Medical Technicians
29-2061	Licensed Practical and Licensed Vocational Nurses
29-2072	Medical Records Specialists
29-2081	Opticians, Dispensing
29-2091	Orthotists and Prosthetists
29-2092	Hearing Aid Specialists
29-2099	Health Technologists and Technicians, All Other
29-9021	Health Information Technologists and Medical Registrars
29-9091	Athletic Trainers
29-9092	Genetic Counselors
29-9093	Surgical Assistants
29-9099	Healthcare Practitioners and Technical Workers, All Other
31-1121	Home Health Aides
31-1122	Personal Care Aides
31-1131	Nursing Assistants
31-1132	Orderlies
31-1133	Psychiatric Aides
31-2011	Occupational Therapy Assistants

Six-digit SOC	Occupation Name
31-2012	Occupational Therapy Aides
31-2021	Physical Therapist Assistants
31-2022	Physical Therapist Aides
31-9011	Massage Therapists
31-9091	Dental Assistants
31-9092	Medical Assistants
31-9093	Medical Equipment Preparers
31-9094	Medical Transcriptionists
31-9095	Pharmacy Aides
31-9096	Veterinary Assistants and Laboratory Animal Caretakers
31-9097	Phlebotomists
31-9099	Healthcare Support Workers, All Other
33-1012	First-Line Supervisors of Police and Detectives
33-2011	Firefighters
33-2021	Fire Inspectors and Investigators
33-2022	Forest Fire Inspectors and Prevention Specialists
33-3011	Bailiffs
33-3012	Correctional Officers and Jailers
33-3021	Detectives and Criminal Investigators
33-3051	Police and Sheriffs Patrol Officers
33-9021	Private Detectives and Investigators
33-9032	Security Guards
35-1011	Chefs and Head Cooks
35-1012	First-Line Supervisors of Food Preparation and Serving Workers
35-2012	Cooks, Institution and Cafeteria
37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners
37-2021	Pest Control Workers
37-3011	Landscaping and Groundskeeping Workers
37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation
37-3013	Tree Trimmers and Pruners
37-3019	Grounds Maintenance Workers, All Other
39-1013	First-Line Supervisors of Gambling Services Workers
39-1014	First-Line Supervisors of Entertainment and Recreation Workers, Except Gambling Services
39-1022	First-Line Supervisors of Personal Service Workers

Six-digit SOC	Occupation Name
39-2011	Animal Trainers
39-3012	Gambling and Sports Book Writers and Runners
39-3092	Costume Attendants
39-4011	Embalmers
39-4021	Funeral Attendants
39-4031	Morticians, Undertakers, and Funeral Arrangers
39-5012	Hairdressers, Hairstylists, and Cosmetologists
39-5091	Makeup Artists, Theatrical and Performance
39-5094	Skincare Specialists
39-9011	Childcare Workers
39-9031	Exercise Trainers and Group Fitness Instructors
39-9041	Residential Advisors
41-1011	First-Line Supervisors of Retail Sales Workers
41-1012	First-Line Supervisors of Non-Retail Sales Workers
41-2021	Counter and Rental Clerks
41-2022	Parts Salespersons
41-3011	Advertising Sales Agents
41-3021	Insurance Sales Agents
41-3031	Securities, Commodities, and Financial Services Sales Agents
41-3041	Travel Agents
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products
41-9012	Models
41-9022	Real Estate Sales Agents
41-9031	Sales Engineers
43-1011	First-Line Supervisors of Office and Administrative Support Workers
43-3011	Bill and Account Collectors
43-3021	Billing and Posting Clerks
43-3031	Bookkeeping, Accounting, and Auditing Clerks
43-3041	Gambling Cage Workers
43-3051	Payroll and Timekeeping Clerks
43-3071	Tellers
43-3099	Financial Clerks, All Other
43-4031	Court, Municipal, and License Clerks

Six-digit SOC	Occupation Name
43-4051	Customer Service Representatives
43-4061	Eligibility Interviewers, Government Programs
43-4111	Interviewers, Except Eligibility and Loan
43-4121	Library Assistants, Clerical
43-4131	Loan Interviewers and Clerks
43-4141	New Accounts Clerks
43-4151	Order Clerks
43-4161	Human Resources Assistants, Except Payroll and Timekeeping
43-4171	Receptionists and Information Clerks
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks
43-5011	Cargo and Freight Agents
43-5031	Public Safety Telecommunicators
43-5032	Dispatchers, Except Police, Fire, and Ambulance
43-5051	Postal Service Clerks
43-5052	Postal Service Mail Carriers
43-5061	Production, Planning, and Expediting Clerks
43-5071	Shipping, Receiving, and Inventory Clerks
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping
43-6011	Executive Secretaries and Executive Administrative Assistants
43-6012	Legal Secretaries and Administrative Assistants
43-6013	Medical Secretaries and Administrative Assistants
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive
43-9021	Data Entry Keyers
43-9041	Insurance Claims and Policy Processing Clerks
43-9051	Mail Clerks and Mail Machine Operators, Except Postal Service
43-9061	Office Clerks, General
43-9111	Statistical Assistants
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers
45-2011	Agricultural Inspectors
45-2091	Agricultural Equipment Operators
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals
45-3031	Fishing and Hunting Workers
45-4029	Logging Workers, All Other
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers
47-2021	Brickmasons and Blockmasons
47-2031	Carpenters
47-2041	Carpet Installers

Six-digit SOC	Occupation Name
47-2051	Cement Masons and Concrete Finishers
47-2061	Construction Laborers
47-2071	Paving, Surfacing, and Tamping Equipment Operators
47-2072	Pile Driver Operators
47-2073	Operating Engineers and Other Construction Equipment Operators
47-2111	Electricians
47-2132	Insulation Workers, Mechanical
47-2141	Painters, Construction and Maintenance
47-2152	Plumbers, Pipefitters, and Steamfitters
47-2181	Roofers
47-2211	Sheet Metal Workers
47-2231	Solar Photovoltaic Installers
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters
47-4011	Construction and Building Inspectors
47-4021	Elevator and Escalator Installers and Repairers
47-4051	Highway Maintenance Workers
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners
47-4091	Segmental Pavers
47-4099	Construction and Related Workers, All Other
47-5022	Excavating and Loading Machine and Dragline Operators, Surface Mining
47-5023	Earth Drillers, Except Oil and Gas
47-5041	Continuous Mining Machine Operators
47-5043	Roof Bolters, Mining
47-5044	Loading and Moving Machine Operators, Underground Mining
47-5049	Underground Mining Machine Operators, All Other
47-5071	Roustabouts, Oil and Gas
47-5081	Helpers--Extraction Workers
47-5099	Extraction Workers, All Other
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairers
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles
49-2098	Security and Fire Alarm Systems Installers
49-3011	Aircraft Mechanics and Service Technicians

Six-digit SOC	Occupation Name
49-3021	Automotive Body and Related Repairers
49-3022	Automotive Glass Installers and Repairers
49-3023	Automotive Service Technicians and Mechanics
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists
49-3041	Farm Equipment Mechanics and Service Technicians
49-3042	Mobile Heavy Equipment Mechanics, Except Engines
49-3051	Motorboat Mechanics and Service Technicians
49-3052	Motorcycle Mechanics
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics
49-3091	Bicycle Repairers
49-3092	Recreational Vehicle Service Technicians
49-3093	Tire Repairers and Changers
49-9011	Mechanical Door Repairers
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers
49-9031	Home Appliance Repairers
49-9041	Industrial Machinery Mechanics
49-9043	Maintenance Workers, Machinery
49-9044	Millwrights
49-9051	Electrical Power-Line Installers and Repairers
49-9052	Telecommunications Line Installers and Repairers
49-9062	Medical Equipment Repairers
49-9071	Maintenance and Repair Workers, General
49-9081	Wind Turbine Service Technicians
49-9098	Helpers--Installation, Maintenance, and Repair Workers
49-9099	Installation, Maintenance, and Repair Workers, All Other
51-1011	First-Line Supervisors of Production and Operating Workers
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers
51-2028	Electrical, Electronic, and Electromechanical Equipment Assemblers, Except Coil Winders, Tapers, and Finishers
51-2031	Engine and Other Machine Assemblers
51-2041	Structural Metal Fabricators and Fitters
51-3011	Bakers
51-3021	Butchers and Meat Cutters
51-3022	Meat, Poultry, and Fish Cutters and Trimmers
51-3023	Slaughterers and Meat Packers
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders

Six-digit SOC	Occupation Name
51-3092	Food Batchmakers
51-3093	Food Cooking Machine Operators and Tenders
51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic
51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic
51-4041	Machinists
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic
51-4111	Tool and Die Makers
51-4121	Welders, Cutters, Solderers, and Brazers
51-4192	Layout Workers, Metal and Plastic
51-4193	Plating Machine Setters, Operators, and Tenders, Metal and Plastic
51-5111	Prepress Technicians and Workers
51-5112	Printing Press Operators
51-5113	Print Binding and Finishing Workers
51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers
51-6092	Fabric and Apparel Patternmakers
51-7011	Cabinetmakers and Bench Carpenters
51-7041	Sawing Machine Setters, Operators, and Tenders, Wood
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing
51-8013	Power Plant Operators
51-8021	Stationary Engineers and Boiler Operators
51-8031	Water and Wastewater Treatment Plant and System Operators
51-8091	Chemical Plant and System Operators
51-9011	Chemical Equipment Operators and Tenders
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders
51-9021	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders
51-9032	Cutting and Slicing Machine Setters, Operators, and Tenders
51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers

Six-digit SOC	Occupation Name
51-9071	Jewelers and Precious Stone and Metal Workers
51-9081	Dental Laboratory Technicians
51-9082	Medical Appliance Technicians
51-9111	Packaging and Filling Machine Operators and Tenders
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders
51-9141	Semiconductor Processing Technicians
51-9161	Computer Numerically Controlled Tool Operators
51-9162	Computer Numerically Controlled Tool Programmers
51-9195	Molders, Shapers, and Casters, Except Metal and Plastic
51-9196	Paper Goods Machine Setters, Operators, and Tenders
51-9198	Helpers--Production Workers
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors
53-2011	Airline Pilots, Copilots, and Flight Engineers
53-2012	Commercial Pilots
53-2031	Flight Attendants
53-3032	Heavy and Tractor-Trailer Truck Drivers
53-3033	Light Truck Drivers
53-3051	Bus Drivers, School
53-3052	Bus Drivers, Transit and Intercity
53-3053	Shuttle Drivers and Chauffeurs
53-5011	Sailors and Marine Oilers
53-5021	Captains, Mates, and Pilots of Water Vessels
53-6061	Passenger Attendants
53-7011	Conveyor Operators and Tenders
53-7021	Crane and Tower Operators
53-7051	Industrial Truck and Tractor Operators
53-7061	Cleaners of Vehicles and Equipment
53-7062	Laborers and Freight, Stock, and Material Movers, Hand
53-7063	Machine Feeders and Offbearers
53-7064	Packers and Packagers, Hand
53-7065	Stockers and Order Fillers
53-7071	Gas Compressor and Gas Pumping Station Operators
53-7072	Pump Operators, Except Wellhead Pumpers
53-7073	Wellhead Pumpers
53-7081	Refuse and Recyclable Material Collectors
53-7121	Tank Car, Truck, and Ship Loaders

Critical Occupations

The following eight occupations did not meet family-sustaining wage criteria yet were included in analysis because they are Critical Occupations in healthcare, direct care, K-12 or early childhood education that provide for essential needs of Minnesotans.

Six-digit SOC	Occupation Name
29-2051	Dietetic Technicians
31-1121	Home Health Aides
31-1122	Personal Care Aides
31-2012	Occupational Therapy Aides
31-2022	Physical Therapist Aides
31-9095	Pharmacy Aides
31-9099	Healthcare Support Workers, All Other
39-9011	Childcare Workers

Additional Credential Tables

Non-Degree Credentials of Value by Occupation Group

The tables below present the same non-degree credentials of value that appear in the main body of the report but organized by major occupation group rather than credential type.

Across Many Occupations

Credential	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
10-Hour OSHA General Industry Card	Other	High school or GED	Yes
American Red Cross (ARC) Certification	Certification	High school or GED	Yes
American Red Cross CPR Certification	Certification	Associate degree	Yes
Automated External Defibrillator (AED) Certification	Certification	High school or GED	Yes
Cardiopulmonary Resuscitation (CPR) Certification	Certification	High school or GED[6]	Yes
First Aid Certification	Certification	High school or GED[6]	Yes
Valid Driver's License	License	High school or GED	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
[4] This credential is earned after completion of a registered apprenticeship, an industry-driven, high-quality career pathway that combines paid on-the-job learning with related technical instruction to meet business talent needs. Registered Apprenticeships are industry-vetted and approved and validated by the Minnesota Department of Labor and Industry.
[5] This credential is no longer offered; new credentials that supersede it may have value to employers.
[6] Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Architecture and Engineering (17)

Architecture and Engineering Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
American Society For Quality (ASQ) Certified	Certification	Bachelor's degree	Yes
Architect Registration Examination	Other	Bachelor's degree	Yes
Architecture License	License	Bachelor's degree	Yes
ASNT Non-Destructive Tester	Certification	High school or GED	No
Certified Energy Manager	Certification	Bachelor's degree	Yes
Certified Industrial Hygienist (CIH)	Certification	Bachelor's degree	Yes
Certified Quality Auditor	Certification	Bachelor's degree	Yes
Certified Quality Engineer	Certification	Bachelor's degree	Yes
Drone Pilot Certificate	Other	Bachelor's degree[6]	Yes
Engineer in Training	License	Bachelor's degree	Yes
Land Surveyor In Training	License	Associate degree	Yes
LEED Accredited Professional (AP)	Certification	Bachelor's degree	Yes
North American Board of Certified Energy Practitioners (NABCEP) Certification	Certification	Bachelor's degree	Yes
Professional Engineer (PE) License	License	Bachelor's degree	Yes
Six Sigma Green Belt	Certification	Bachelor's degree	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
[4] This credential is earned after completion of a registered apprenticeship, an industry-driven, high-quality career pathway that combines paid on-the-job learning with related technical instruction to meet business talent needs. Registered Apprenticeships are industry-vetted and approved and validated by the Minnesota Department of Labor and Industry.
[5] This credential is no longer offered; new credentials that supersede it may have value to employers.
[6] Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Architecture and Engineering Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Surveying License	License	Bachelor's degree	Yes

Arts, Design, Entertainment, Sports, and Media (27)

Arts, Design, Entertainment, Sports, and Media Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
AVIXA Certified Technology Specialist	Certification	High school or GED[6]	Yes
Water Safety Instructor Certification	Certification	High school or GED[6]	No

Building and Grounds Cleaning and Maintenance (37)

Building and Grounds Cleaning and Maintenance Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Pesticide Applicator License	License	High school or GED	Yes

Business and Financial Operations (13)

Business and Financial Operations Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Adjuster License	License	High school or GED	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.

[2] Across all job postings requesting the credential.

[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.

[4] This credential is earned after completion of a registered apprenticeship, an industry-driven, high-quality career pathway that combines paid on-the-job learning with related technical instruction to meet business talent needs. Registered Apprenticeships are industry-vetted and approved and validated by the Minnesota Department of Labor and Industry.

[5] This credential is no longer offered; new credentials that supersede it may have value to employers.

[6] Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Business and Financial Operations Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Agile Certification	Certification	Bachelor's degree	Yes
Associate In Risk Management (ARM)	Certification	Bachelor's degree	Yes
Association Of Proposal Management Professionals (APMP) Certification	Certification	Bachelor's degree	Yes
Certification Of Capability In Business Analysis (CCBA)	Certification	Bachelor's degree	Yes
Certified Anti-Money Laundering Specialist	Certification	Bachelor's degree	Yes
Certified Associate In Project Management	Certification	Bachelor's degree	Yes
Certified Business Analysis Professional (CBAP)	Certification	Bachelor's degree	Yes
Certified Financial Planner	Certification	Bachelor's degree	Yes
Certified Financial Risk Management	Certification	Bachelor's degree	Yes
Certified Fraud Examiner	Certification	Bachelor's degree	Yes
Certified Internal Auditor	Certification	Bachelor's degree	Yes
Certified Meeting Professional (CMP)	Certification	Bachelor's degree	Yes
Certified Public Accountant	License	Bachelor's degree	Yes
Certified Regulatory Compliance Manager	Certification	Bachelor's degree	Yes
Certified Treasury Professional	Certification	Bachelor's degree	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
[4]This credential is earned after completion of a registered apprenticeship, an industry-driven, high-quality career pathway that combines paid on-the-job learning with related technical instruction to meet business talent needs. Registered Apprenticeships are industry-vetted and approved and validated by the Minnesota Department of Labor and Industry.
[5]This credential is no longer offered; new credentials that supersede it may have value to employers.
[6]Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Business and Financial Operations Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified Trust And Fiduciary Advisor (CTFA)	Certification	Bachelor's degree	Yes
Change Management Certification	Certification	Bachelor's degree	Yes
Chartered Financial Analyst	Other	Bachelor's degree	Yes
Chartered Financial Consultant (CHFC)	Certification	Bachelor's degree	Yes
Chartered Life Underwriter	Certification	Bachelor's degree	Yes
Chartered Property Casualty Underwriter	Certification	Bachelor's degree	Yes
Enrolled Agent (EA)	Other	Bachelor's degree	Yes
Fellow, Life Management Institute	Certification	Bachelor's degree	Yes
FINRA Series 24 (General Securities Principal)	Other	Bachelor's degree	Yes
FINRA Series 66 (Uniform Combined State Law)	Other	Bachelor's degree[6]	Yes
FINRA Series 7 (General Securities Representative)	Other	Bachelor's degree	Yes
Institute Of Internal Auditors (IIA) Certification	Certification	Bachelor's degree	Yes
International Institute Of Business Analysis (IIBA) Certifications	Certification	Bachelor's degree	Yes
PMI Agile Certified Practitioner	Certification	Bachelor's degree	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
[4]This credential is earned after completion of a registered apprenticeship, an industry-driven, high-quality career pathway that combines paid on-the-job learning with related technical instruction to meet business talent needs. Registered Apprenticeships are industry-vetted and approved and validated by the Minnesota Department of Labor and Industry.
[5]This credential is no longer offered; new credentials that supersede it may have value to employers.
[6]Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Business and Financial Operations Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
PMI Professional in Business Analysis (PMI-PBA)	Certification	Bachelor's degree	Yes
Program Management Professional (PgMP)	Certification	Bachelor's degree	Yes
Project Management Certification	Certification	Bachelor's degree	Yes
Project Management Professional Certification	Certification	Bachelor's degree	Yes

Community and Social Service (21)

Community and Social Service Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Activity Assistant Certified (AAC)[5]	Certification	High school or GED[6]	No
Board Certified Assistant Behavior Analyst (BCaBA)	Certification	Bachelor's degree	Yes
Board Certified Behavior Analyst (BCBA)	Certification	Master's degree	Yes
Certified Diabetes Educator (CDE)	Certification	Bachelor's degree	Yes
Certified Psychiatric Rehabilitation Practitioner	Certification	Bachelor's degree	Yes
Community Health Worker Certificate	Other	High school or GED	Yes
Global Career Development Facilitator	Certification	Bachelor's degree	Yes
International Board Certified Lactation Consultant (IBCLC)	Certification	Associate degree[6]	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
[4] This credential is earned after completion of a registered apprenticeship, an industry-driven, high-quality career pathway that combines paid on-the-job learning with related technical instruction to meet business talent needs. Registered Apprenticeships are industry-vetted and approved and validated by the Minnesota Department of Labor and Industry.
[5] This credential is no longer offered; new credentials that supersede it may have value to employers.
[6] Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Community and Social Service Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Licensed Graduate Social Worker	License	Master's degree	Yes
Licensed Independent Clinical Social Worker	License	Master's degree	Yes
Licensed Independent Social Worker	License	Master's degree	Yes
Licensed Marriage And Family Therapist (LMFT)	License	Master's degree	Yes
Licensed Professional Clinical Counselor	License	Master's degree	Yes
Licensed Professional Counselor (LPC)	License	Master's degree	Yes
Licensed Psychologist (LP)	License	Master's degree	Yes
Licensed Social Worker	License	Bachelor's degree	Yes
School Counselor License	License	Bachelor's degree[6]	Yes

Computer and Mathematical (15)

Computer and Mathematical Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Actuarial Exams	Other	Bachelor's degree	Yes
Associate Of The Society Of Actuaries	Certification	Bachelor's degree[6]	Yes
AWS Certified Solutions Architect	Certification	Bachelor's degree	Yes
Certified Cloud Security Professional (CCSP)	Certification	Bachelor's degree	Yes
Certified Ethical Hacker	Certification	Bachelor's degree	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
[4] This credential is earned after completion of a registered apprenticeship, an industry-driven, high-quality career pathway that combines paid on-the-job learning with related technical instruction to meet business talent needs. Registered Apprenticeships are industry-vetted and approved and validated by the Minnesota Department of Labor and Industry.
[5] This credential is no longer offered; new credentials that supersede it may have value to employers.
[6] Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Computer and Mathematical Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified In Risk And Information Systems Control	Certification	Bachelor's degree	Yes
Certified In The Governance Of Enterprise IT	Certification	Bachelor's degree	Yes
Certified Information Privacy Professional (CIPP)	Certification	Bachelor's degree	Yes
Certified Information Security Manager	Certification	Bachelor's degree	Yes
Certified Information Systems Auditor (CISA)	Certification	Bachelor's degree	Yes
Certified Information Systems Security Professional	Certification	Bachelor's degree	Yes
Certified Scrum Master	Certification	Bachelor's degree	Yes
Certified Scrum Product Owner	Certification	Bachelor's degree	Yes
Cisco Certified Entry Networking Technician[5]	Certification	Associate degree	Yes
Cisco Certified Internetwork Expert	Certification	Bachelor's degree	Yes
Cisco Certified Network Associate	Certification	Bachelor's degree	Yes
Cisco Certified Network Professional	Certification	Bachelor's degree	Yes
CompTIA A+	Certification	Associate degree	Yes
CompTIA Certification	Certification	High school or GED	Yes

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Computer and Mathematical Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
CompTIA Cybersecurity Analyst (CySA+)	Certification	Bachelor's degree	Yes
CompTIA Network+	Certification	Bachelor's degree	Yes
CompTIA Security+	Certification	Bachelor's degree	Yes
Epic EMR Certification	Certification	Bachelor's degree[6]	Yes
Fellow Of The Society of Actuaries	Certification	Bachelor's degree[6]	Yes
GIAC Certifications	Certification	Bachelor's degree	Yes
GIAC Certified Forensics Analyst	Certification	Bachelor's degree	Yes
GIAC Certified Incident Handler	Certification	Bachelor's degree	Yes
GIAC Certified Intrusion Analyst	Certification	Bachelor's degree	Yes
GIAC Security Essentials Certification (GSEC)	Certification	Bachelor's degree	Yes
ITIL Certifications	Certification	Bachelor's degree	Yes
ITIL Foundation Certification	Certification	Bachelor's degree	Yes
Lean Certification	Certification	Bachelor's degree	Yes
Lean Six Sigma Black Belt	Certification	Bachelor's degree	Yes

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Computer and Mathematical Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Lean Six Sigma Certification	Certification	Bachelor's degree	Yes
Microsoft Azure Certification	Certification	Bachelor's degree	Yes
Microsoft Certified Professional[5]	Certification	Bachelor's degree	Yes
Microsoft Certified Systems Engineer[5]	Certification	Bachelor's degree	Yes
NIST Cybersecurity Framework (CSF)	Certification	Bachelor's degree	Yes
Offensive Security Certified Professional	Certification	Bachelor's degree	Yes
Salesforce Certification	Certification	Bachelor's degree	Yes
Salesforce Certified Administrator	Certification	Bachelor's degree	Yes
Six Sigma Black Belt	Certification	Bachelor's degree	Yes
Six Sigma Certification	Certification	Bachelor's degree	Yes
Systems Security Certified Practitioner	Certification	Bachelor's degree	Yes
VMware Certified Professional (VCP)	Certification	Bachelor's degree	Yes

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Construction and Extraction (47)

Construction and Extraction Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
30-Hour OSHA General Industry Card	Other	High school or GED	Yes
Aerial Lift Certification	Certification	Bachelor's degree	Yes
Certified Welding Inspector	Certification	High school or GED	Yes
Class A Journeyworker Electrician License[4]	License	High school or GED[6]	Yes
Hazardous Materials Certification - Awareness Level	Other	High school or GED	Yes
National Center For Construction Education & Research (NCCER) Certification	Certification	High school or GED[6]	Yes

Educational Instruction and Library (25)

Educational Instruction and Library Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Personal Care Assistance (PCA) Certification	Certification	High school or GED	No
Registered Behavior Technician (RBT)	Certification	High school or GED	Yes
Teaching License	License	Bachelor's degree[6]	Yes

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Food Preparation and Serving Related (35)

Food Preparation and Serving Related Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified Dietary Manager (CDM)	Certification	Associate degree	Yes
Food Handler's Card	Certification	High school or GED[6]	Yes
Food Safety Certification	Certification	High school or GED[6]	Yes
ServSafe Certification	Certification	High school or GED	Yes

Healthcare Practitioners and Technical (29)

Healthcare Practitioners and Technical Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Acute Care Nurse Practitioner (ACNP)	Certification	Master's degree	Yes
Adult Nurse Practitioner (ANP-BC)	Certification	Master's degree[6]	Yes
Advanced Cardiovascular Life Support (ACLS) Certification	Certification	Associate degree[6]	Yes
Advanced Emergency Medical Technician (AEMT)	Certification	High school or GED	Yes
Advanced Life Support	Certification	Associate degree[6]	Yes
Advanced Practice Registered Nurse	License	Master's degree[6]	Yes
Advanced Trauma Life Support (ATLS)	Other	Bachelor's degree[6]	Yes
American Association For Laboratory Animal Science (AALAS) Certification	Certification	Bachelor's degree	Yes

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Healthcare Practitioners and Technical Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
American Association Of Nurse Practitioners (AANP) Certified	Certification	Master's degree[6]	Yes
American Board Of Opticianry (ABO) Certified	Certification	High school or GED	Yes
American College Of Sports Medicine (ACSM) Certification	Certification	Bachelor's degree[6]	Yes
American Nurses Credentialing Center (ANCC) Certified	Certification	Master's degree[6]	Yes
American Red Cross AED Certification	Certification	Associate degree	Yes
American Registry For Diagnostic Medical Sonography (ARDMS) Certification	Certification	Associate degree[6]	Yes
American Registry Of Radiologic Technologists (ARRT) Certified	Certification	Associate degree[6]	Yes
American Society For Clinical Pathology (ASCP) Certification	Certification	Associate degree	Yes
ARRT Computed Tomography (CT) Certification	Certification	Associate degree[6]	Yes
ARRT Magnetic Resonance Imaging (MRI) Certification	Certification	Associate degree[6]	Yes
ARRT Mammography (M) Certification	Certification	Associate degree[6]	Yes
ARRT Radiography (R) Certification	Certification	Associate degree[6]	Yes
Assistant Laboratory Animal Technician	Certification	Associate degree	Yes
Audiologist License	License	Master's degree[6]	Yes

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Healthcare Practitioners and Technical Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Basic Cardiac Life Support	Certification	Associate degree[6]	Yes
Basic Life Support (BLS) Certification	Certification	Associate degree	Yes
Basic Life Support Instructor (BLS-I)	Certification	Associate degree	Yes
Board Certified In Family Medicine	Certification	Ph.D. or professional degree	Yes
Board Certified In Internal Medicine	Certification	Ph.D. or professional degree[6]	Yes
Board Certified In Psychiatry	Certification	Master's degree[6]	Yes
Board Certified In Radiology	Certification	Master's degree[6]	Yes
Board Certified/Board Eligible	Certification	Ph.D. or professional degree[6]	Yes
Cardiac Advanced Life Support	Certification	Bachelor's degree[6]	Yes
Certificate Of Clinical Competence In Speech-Language Pathology (CCC-SLP)	Certification	Master's degree	Yes
Certified Athletic Trainer (ATC)	Certification	Bachelor's degree	Yes
Certified Case Manager (CCM)	Certification	Bachelor's degree	Yes
Certified Clinical Documentation Specialist (CCDS)	Certification	Bachelor's degree[6]	Yes

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Healthcare Practitioners and Technical Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified Coding Specialist - Physician-Based (CCS-P)	Certification	High school or GED	Yes
Certified Coding Specialist (CCS)	Certification	High school or GED	Yes
Certified Dialysis Nurse (CDN)	Certification	Associate degree	Yes
Certified Disability Management Specialist (CDMS)	Certification	Bachelor's degree	Yes
Certified Documentation Improvement Practitioner (CDIP)	Certification	Associate degree[6]	Yes
Certified Emergency Nurse (CEN)	Certification	Associate degree	Yes
Certified Hemodialysis Technologist/Technician (CHT)	Certification	High school or GED	Yes
Certified Hospice And Palliative Nurse (CHPN)	Certification	Associate degree	Yes
Certified Inpatient Coder (CIC)	Certification	Associate degree[6]	Yes
Certified Medical-Surgical Registered Nurse (CMSRN)	Certification	Associate degree	Yes
Certified Nephrology Nurse (CNN)	Certification	Associate degree	Yes
Certified Nuclear Medicine Technologist	Certification	Bachelor's degree	Yes
Certified Nurse Midwife (CNM)	Certification	Master's degree	Yes
Certified Ophthalmic Assistant	Certification	High school or GED	Yes
Certified Ophthalmic Medical Technologist	Certification	High school or GED	Yes

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Healthcare Practitioners and Technical Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified Ophthalmic Technician	Certification	High school or GED	Yes
Certified Outpatient Coder (COC)	Certification	High school or GED	Yes
Certified Patient Care Technician (CPCT)	Certification	High school or GED	Yes
Certified Perioperative Nurse (CNOR)	Certification	Associate degree[6]	Yes
Certified Professional Coder - Apprentice (CPC-A)	Certification	High school or GED	Yes
Certified Professional Coder (CPC)	Certification	Associate degree	Yes
Certified Professional Coder-Payer (CPC-P)	Certification	High school or GED	Yes
Certified Professional Medical Auditor	Certification	Bachelor's degree[6]	Yes
Certified Radiologic Technologist/Technician	Certification	Associate degree[6]	Yes
Certified Registered Nurse Anesthetist (CRNA)	Certification	Master's degree[6]	Yes
Certified Rehabilitation Registered Nurse (CRRN)	Certification	Bachelor's degree[6]	Yes
Certified Respiratory Therapist (CRT)	Certification	Associate degree[6]	Yes
Certified Risk Adjustment Coder (CRC)	Certification	Bachelor's degree	Yes
Certified Strength And Conditioning Specialist	Certification	Bachelor's degree	No

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Healthcare Practitioners and Technical Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified Surgical Assistant	Certification	High school or GED[6]	Yes
Certified Surgical First Assistant (CSFA)	Certification	High school or GED[6]	Yes
Certified Surgical Technologist (CST)	Certification	High school or GED	Yes
Certified Therapeutic Recreation Specialist	Certification	Bachelor's degree	Yes
Certified Veterinary Technician	Certification	Associate degree[6]	Yes
Clinical Nurse Specialist (CNS)	Certification	Master's degree	Yes
CPR/AED For The Professional Rescuer	Certification	Associate degree	Yes
Critical Care Registered Nurse (CCRN)	Certification	Associate degree	Yes
Dental Hygiene License	License	Associate degree	Yes
Dietetic Technician Registered (DTR/NDTR)	Certification	Associate degree	No
Diploma In Nursing	Other	N/A	Yes
DOT Certified Medical Examiner	Certification	Bachelor's degree	Yes
Drug Enforcement Agency (DEA) License	License	Master's degree[6]	Yes
Emergency Medical Technician - Basic (EMT-B)	Certification	High school or GED[6]	Yes
Emergency Medical Technician (EMT)	Certification	High school or GED	Yes

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Healthcare Practitioners and Technical Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Emergency Nurse Pediatric Course (ENPC)	Other	Associate degree[6]	Yes
Emergency Vehicle Operator Course (EVOC)	Other	Associate degree[6]	Yes
Family Nurse Practitioner (FNP)	Certification	Master's degree[6]	Yes
Gerontological Nurse Practitioner (GNP-BC)	Certification	Master's degree[6]	Yes
Immunization Certification	Certification	Bachelor's degree	Yes
IV (Intravenous) Certification	Certification	Associate degree	Yes
Licensed Practical Nurse (LPN)	License	Associate degree	Yes
Local Anesthesia Course Completion	Other	High school or GED[6]	Yes
Magnetic Resonance Imaging (MRI) Certification	Certification	Associate degree	Yes
Medical Coding Certification	Certification	High school or GED	Yes
Medical Laboratory Technician (MLT-ASCP)	Certification	Associate degree	Yes
Medical License	License	Ph.D. or professional degree[6]	Yes
Music Therapist - Board Certified (MT-BC)	Certification	Bachelor's degree	Yes
National Board for Certification in Occupational Therapy (NBCOT) Certified	Certification	Associate degree[6]	Yes

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Healthcare Practitioners and Technical Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
National Council Licensure Examination	Other	Associate degree	Yes
National Healthcareer Association (NHA) Certified Pharmacy Technician (CPhT)	Certification	High school or GED	Yes
Nationally Registered Emergency Medical Technician (NREMT)	Certification	High school or GED	Yes
Nationally Registered Paramedic (NRP)	Certification	High school or GED	Yes
Neonatal Nurse Practitioner	Certification	Master's degree[6]	Yes
Neonatal Resuscitation Program Certification (NRP)	Certification	Associate degree[6]	Yes
NIH Stroke Scale (NIHSS) Certification	Certification	Associate degree	Yes
Nitrous Oxide Certification	Certification	High school or GED[6]	Yes
Nurse Practitioner (APRN-CNP)	Certification	Master's degree[6]	Yes
Oncology Certified Nurse (OCN)	Certification	Associate degree	Yes
Paramedic (EMT-P)	Certification	High school or GED[6]	Yes
Pediatric Advanced Life Support (PALS)	Certification	Bachelor's degree[6]	Yes
Pediatric Emergency Assessment Recognition And Stabilization (PEARS)	Other	Associate degree	Yes
Pharmacy Intern License	License	High school or GED[6]	Yes

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Healthcare Practitioners and Technical Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Pharmacy Technician Certification	Certification	High school or GED	Yes
Physician Assistant - Certified (PA-C)	Certification	Master's degree[6]	Yes
Psychiatric-Mental Health Nurse Practitioner (PMHNP-BC)	Certification	Master's degree	Yes
Radiology Certified Coder	Certification	High school or GED	Yes
Registered Cardiac Electrophysiology Specialist (RCES)	Certification	Associate degree[6]	Yes
Registered Cardiac Sonographer (RCS)	Certification	Associate degree	Yes
Registered Cardiovascular Invasive Specialist (RCIS)	Certification	Associate degree[6]	Yes
Registered Diagnostic Cardiac Sonographer (RDCS)	Certification	Associate degree	Yes
Registered Diagnostic Medical Sonographer (RDMS)	Certification	Associate degree[6]	Yes
Registered Dietitian (RD/RDN)	License	Bachelor's degree[6]	Yes
Registered Health Information Administrator (RHIA)	Certification	High school or GED	Yes
Registered Health Information Technician (RHIT)	Certification	High school or GED	Yes
Registered Nurse (RN)	License	Associate degree[6]	Yes
Registered Pharmacist (RPh)	License	Bachelor's degree	Yes

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Healthcare Practitioners and Technical Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Registered Polysomnographic Technologist	Certification	Associate degree[6]	Yes
Registered Respiratory Therapist (RRT)	Certification	Associate degree[6]	Yes
Registered Technologist	Certification	High school or GED[6]	Yes
Registered Vascular Technologist (RVT)	Certification	Associate degree[6]	Yes
Speech-Language Pathology License	License	Master's degree	Yes
Trauma Nurse Core Course (TNCC)	Other	Bachelor's degree[6]	Yes
Veterinary License	License	Ph.D. or professional degree[6]	Yes

Healthcare Support (31)

Healthcare Support Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
American Medical Technologists (AMT) Certification	Certification	Associate degree	Yes
Certification Board For Sterile Processing And Distribution (CBSPD) Certification	Certification	High school or GED	No
Certified Clinical Medical Assistant (CCMA)	Certification	Associate degree	Yes
Certified Dental Assistant	Certification	High school or GED[6]	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
[4] This credential is earned after completion of a registered apprenticeship, an industry-driven, high-quality career pathway that combines paid on-the-job learning with related technical instruction to meet business talent needs. Registered Apprenticeships are industry-vetted and approved and validated by the Minnesota Department of Labor and Industry.
[5] This credential is no longer offered; new credentials that supersede it may have value to employers.
[6] Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Healthcare Support Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified Home Health Aide	Certification	High school or GED	No
Certified Medical Assistant (CMA)	Certification	High school or GED	Yes
Certified Nursing Assistant (CNA)	Certification	High school or GED	Yes
Certified Occupational Therapy Assistant	Certification	Associate degree[6]	Yes
Certified Phlebotomy Technician	Certification	High school or GED	No
Certified Registered Central Service Technician (CRCST)	Certification	High school or GED	Yes
Expanded Functions Dental Assistant	Certification	High school or GED[6]	Yes
Healthcare Sterile Processing Association (HSPA) Certification	Certification	High school or GED	No
Limited Radiology Registration	License	High school or GED[6]	Yes
Medication Administration Certification	Certification	High school or GED	No
National Healthcareer Association (NHA) Certified Clinical Medical Assistant (CCMA)	Certification	High school or GED	Yes
National Healthcareer Association (NHA) Certified Phlebotomy Technician (CPT)	Certification	High school or GED	Yes
Phlebotomy Certification	Certification	High school or GED	Yes
Physical Therapy Assistant License	License	Associate degree[6]	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.

[2] Across all job postings requesting the credential.

[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.

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[5] This credential is no longer offered; new credentials that supersede it may have value to employers.

[6] Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Healthcare Support Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Registered Dental Assistant	Certification	High school or GED	Yes
Registered Medical Assistant (RMA)	Certification	Associate degree	Yes

Installation, Maintenance, and Repair (49)

Installation, Maintenance, and Repair Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Airframe & Powerplant (A&P) Certificate	Certification	High school or GED[6]	Yes
Contractor License	License	High school or GED[6]	Yes
EPA 608 Technician Certification	Certification	High school or GED	Yes
EPA Section 608 Technician Certification	Certification	High school or GED	Yes
EPA Type II Certification	Certification	High school or GED	Yes
EPA Universal Certification	Certification	High school or GED	Yes
HVAC Certification	Certification	High school or GED	Yes
Institute Of Inspection Cleaning And Restoration Certification	Certification	High school or GED[6]	No
Journeyman Lineman[4]	Certification	High school or GED	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
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[5] This credential is no longer offered; new credentials that supersede it may have value to employers.
[6] Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Installation, Maintenance, and Repair Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
NATE Certification (North American Technician Excellence)	Certification	High school or GED[6]	Yes
NICET Certification (National Institute For Certification In Engineering Technologies)	Certification	High school or GED	Yes
NICET Level II Certification	Certification	High school or GED	Yes

Legal (23)

Legal Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Minnesota State Bar Association Membership	Other	Ph.D. or professional degree	Yes

Life, Physical, and Social Science (19)

Life, Physical, and Social Science Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
American Institute Of Certified Planners (AICP) Certification	Certification	Bachelor's degree	Yes
Associate Safety Professional	Certification	Bachelor's degree	Yes
Certified Arborist	Certification	High school or GED[6]	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
[4]This credential is earned after completion of a registered apprenticeship, an industry-driven, high-quality career pathway that combines paid on-the-job learning with related technical instruction to meet business talent needs. Registered Apprenticeships are industry-vetted and approved and validated by the Minnesota Department of Labor and Industry.
[5]This credential is no longer offered; new credentials that supersede it may have value to employers.
[6]Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Life, Physical, and Social Science Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified Forester	Certification	Bachelor's degree	No
Certified Hazardous Materials Manager (CHMM)	Certification	Bachelor's degree	Yes
Certified Infection Control (CIC)	Certification	Associate degree	Yes
Certified Safety Professional (CSP)	Certification	Bachelor's degree	Yes
Construction Health And Safety Technician (CHST)	Certification	High school or GED	Yes
HAZWOPER Certification	Certification	Bachelor's degree	Yes
Medical Laboratory Scientist (MLS-ASCP)	Certification	Associate degree	Yes
Medical Technologist Certification	Certification	Associate degree	Yes
Occupational Hygiene and Safety Technician (OHST)	Certification	Bachelor's degree[6]	Yes
OSHA Certification	Other	High school or GED	Yes
Professional Geologist (PG) License	License	Bachelor's degree	Yes
School Psychology License	License	Master's degree[6]	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.

[2] Across all job postings requesting the credential.

[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.

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[5] This credential is no longer offered; new credentials that supersede it may have value to employers.

[6] Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Management (11)

Management Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
30-Hour OSHA Construction Card	Other	High school or GED	No
American Production And Inventory Control Society (APICS) Certification	Certification	Bachelor's degree	Yes
APICS Certified In Planning And Inventory Management (CPIM)	Certification	Bachelor's degree	Yes
APICS Certified Supply Chain Professional (CSCP)	Certification	Bachelor's degree	Yes
Certified Apartment Manager (CAM)	Certification	High school or GED	Yes
Certified Clinical Research Associate (CCRA)	Certification	Bachelor's degree	Yes
Certified Clinical Research Coordinator (CCRC)	Certification	Bachelor's degree	Yes
Certified Clinical Research Professional (CCRP)	Certification	Associate degree	Yes
Certified Compensation Professional	Certification	Bachelor's degree	Yes
Certified Employee Benefit Specialist	Certification	Bachelor's degree	Yes
Certified Fund Raising Executive (CFRE)	Certification	Bachelor's degree	Yes
Certified Management Accountant	Certification	Bachelor's degree	Yes
Certified Professional In Supply Management (CPSM)	Certification	Bachelor's degree	Yes
Certified Property Manager (CPM)	Certification	High school or GED	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
[4] This credential is earned after completion of a registered apprenticeship, an industry-driven, high-quality career pathway that combines paid on-the-job learning with related technical instruction to meet business talent needs. Registered Apprenticeships are industry-vetted and approved and validated by the Minnesota Department of Labor and Industry.
[5] This credential is no longer offered; new credentials that supersede it may have value to employers.
[6] Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Management Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified Protection Professional	Certification	High school or GED	Yes
Certified Purchasing Manager[5]	Certification	Bachelor's degree	Yes
Food Protection Manager Certification	Certification	High school or GED[6]	Yes
Hazard Analysis And Critical Control Point (HACCP) Certification	Certification	Bachelor's degree	Yes
Healthcare Financial Management Association (HFMA) Certification	Certification	High school or GED	Yes
Institute For Supply Management (ISM) Certifications	Certification	Bachelor's degree	Yes
Licensed Nursing Home Administrator (LNHA)	License	Bachelor's degree	Yes
Professional in Human Resources	Certification	Bachelor's degree	Yes
Senior Professional In Human Resources	Certification	Bachelor's degree	Yes
SHRM-CP (Society for Human Resource Management Certified Professional)	Certification	Bachelor's degree	Yes
SHRM-SCP (Society for Human Resource Management Senior Certified Professional)	Certification	Bachelor's degree	Yes
SQF (Safe Quality Food) Practitioner	Certification	Bachelor's degree	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
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[5]This credential is no longer offered; new credentials that supersede it may have value to employers.
[6]Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Office and Administrative Support (43)

Office and Administrative Support Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified Payroll Professional (CPP)	Certification	Bachelor's degree	Yes
Fundamental Payroll Certification (FPC)	Certification	High school or GED	Yes

Personal Care and Service (39)

Personal Care and Service Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
American Red Cross Lifeguard Certification	Certification	High school or GED[6]	No
Aquatic Facility Operator (AFO) Certification	Certification	High school or GED	Yes
Athletics And Fitness Association Of America (AFAA) Certification	Certification	High school or GED[6]	No
Barber License	License	High school or GED[6]	No
Certified Fitness Trainer	Certification	High school or GED[6]	No
Certified Pool & Spa Operator	Certification	High school or GED	Yes
Cosmetology License	License	High school or GED[6]	Yes
Esthetician License	License	High school or GED[6]	No
Group Fitness Instructor Certification	Certification	High school or GED[6]	No

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
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[5]This credential is no longer offered; new credentials that supersede it may have value to employers.
[6]Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Personal Care and Service Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Lifeguard Certification	Certification	High school or GED[6]	Yes
Personal Trainer Certification	Certification	High school or GED	Yes

Production (51)

Production Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
American Concrete Institute (ACI) Certification	Certification	High school or GED	Yes
American Welding Society Certification	Certification	High school or GED	No
Boiler Engineer/Operator License[4]	License	High school or GED	Yes
Certified Quality Technician	Certification	High school or GED	No
Wastewater Operator Certification	License	High school or GED	Yes

Protective Service (33)

Protective Service Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Certified First Responder (CFR)	Certification	High school or GED	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.

[2] Across all job postings requesting the credential.

[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.

[4]This credential is earned after completion of a registered apprenticeship, an industry-driven, high-quality career pathway that combines paid on-the-job learning with related technical instruction to meet business talent needs. Registered Apprenticeships are industry-vetted and approved and validated by the Minnesota Department of Labor and Industry.

[5]This credential is no longer offered; new credentials that supersede it may have value to employers.

[6]Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Protective Service Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Emergency Medical Responder (EMR)	Certification	High school or GED	Yes
Firefighter I Certification	Certification	High school or GED	No
Firefighter II Certification	Certification	High school or GED	Yes
GIAC Certified Forensic Examiner	Certification	Associate degree	Yes
Hazardous Materials Certification - Operations Level	Certification	High school or GED	No
Peace Officer Certification	License	Associate degree	Yes

Sales and Related (41)

Sales and Related Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
ASE Parts Specialist Certification	Certification	High school or GED	No
Automotive Service Excellence (ASE) Certification	Certification	High school or GED[6]	Yes
FINRA Series 63 (Uniform Securities Agent State Law)	Other	Bachelor's degree[6]	Yes
FINRA Series 65 (Uniform Investment Adviser Law)	Other	Bachelor's degree[6]	Yes
Insurance License	License	High school or GED[6]	Yes
Licensed Insurance Producer	License	High school or GED[6]	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
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[5] This credential is no longer offered; new credentials that supersede it may have value to employers.
[6] Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Sales and Related Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Life And Health Insurance License	License	Bachelor's degree	Yes
Nationwide Mortgage Licensing System (NMLS) Registration	License	High school or GED[6]	Yes
Property And Casualty Insurance License	License	High school or GED[6]	Yes
Real Estate Salesperson License	License	Bachelor's degree[6]	Yes

Transportation and Material Moving (53)

Transportation and Material Moving Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Airline Transport Pilot License	Other	High school or GED[6]	Yes
CDL Class A License	License	High school or GED[6]	Yes
CDL Class B License	License	High school or GED[6]	Yes
CDL Class C License	License	High school or GED[6]	Yes
Certified Crane Operator	Certification	High school or GED	Yes
Certified Flight Instructor	Other	Bachelor's degree[6]	Yes
Commercial Driver's License (CDL)	License	High school or GED[6]	Yes
Commercial Pilot License	License	High school or GED	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.

[2] Across all job postings requesting the credential.

[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.

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[5]This credential is no longer offered; new credentials that supersede it may have value to employers.

[6]Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Transportation and Material Moving Credential[1]	Type	Typical minimum education required[2]	Family-sustaining wage statewide[3]
DOT Certification	Certification	High school or GED[6]	Yes
Doubles Endorsement	License	High school or GED[6]	Yes
FAA Instrument Rating	Other	High school or GED[6]	Yes
Forklift Certification	Certification	High school or GED	Yes
Hazardous Materials Certification	Certification	High school or GED	Yes
Hazmat Endorsement	License	High school or GED	Yes
Pallet Jack Certification	Certification	High school or GED	No
Passenger Endorsement	License	High school or GED[6]	Yes
Private Pilot License	Other	Bachelor's degree	Yes
School Bus Endorsement	License	High school or GED[6]	No
Tanker And Hazmat Combo X Endorsement	License	High school or GED	Yes
Tanker Endorsement	License	High school or GED[6]	Yes
Triples Endorsement	License	High school or GED[6]	Yes

[1] Most strongly affiliated occupation group. Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.
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[5]This credential is no longer offered; new credentials that supersede it may have value to employers.
[6]Postings for this credential most often did not list any education requirement. This is the most common minimum education level among postings that did list a requirement.

Degrees Identified in Analysis

The available data on degree credentials in job postings exhibited too many limitations to yield a comprehensive assessment. As a result, this report focuses on non-degree credentials. The five degrees that meet criteria for inclusion are found below. Many other degrees are likely valuable to employers, as evidenced by the minimum education requirements specified in job postings.

Degree	Occupation group (2-digit SOC)[1]	Typical minimum education required[2]	Family-sustaining wage statewide[3]
Bachelor Of Science in Business	Sales and Related (41)	N/A	Yes
Bachelor Of Science in Nursing (BSN)	Healthcare Practitioners and Technical (29)	N/A	Yes
Doctor of Nursing Practice (DNP)	Healthcare Practitioners and Technical (29)	N/A	Yes
Doctor Of Physical Therapy	Healthcare Practitioners and Technical (29)	N/A	Yes
Master Of Business Administration (MBA)	Management (11)	N/A	Yes

[1] For most strongly affiliated occupation(s). Note that a credential may align with multiple occupation groups.
[2] Across all job postings requesting the credential.
[3] "Yes" indicates the credential appears in a minimum of 50 job posts for occupations with average pay at or above the statewide family-sustaining wage threshold. "No" indicates the credential appears in fewer than 50 posts with average pay at or above the statewide family-sustaining wage threshold, with the remaining posts for occupations that pay a family-sustaining wage in at least one region or are critical occupations in healthcare, direct care, K-12 or early childhood education.

Thanks

Credentials of Value Advisory Group

Deep thanks to those who shared their knowledge, skills and talents with this project as part of the monthly Credentials of Value Advisory Group. Many, but not all participants in the advisory group were active in the previous P-20 Credentials of Value Work Group or work with the P-20 Education Partnership in other capacities. While this group contained representatives from numerous agencies and organizations, not all voices or communities were represented.

Thank you to the following individuals who joined one or more meetings of the monthly Credentials of Value Advisory Group: Abby Loesch, Amy Carlson, Annie Welch, Barb Wilder, Carrie Schneider, Dan Solomon, Erin Larsen, Jeff Plaman, Jess Niebuhr, Josiah Litant, Larry Handlin, Lauryn Schothorst, Mary Beth Lakin, Megan Fitzgibbon, Mohamed Farah, Nancy Floyd, Nora Morris, Oriane Casale, Patti Balacek, Sonji Davis, Stacy Karl, Steve Rogness and Thomas Sommer.

Industry Advisors

Thank you to the knowledgeable and experienced professionals who lent their time and attention to reviewing credentials in their industries. Our advisors included representatives from Associated General Contractors of America (AGC), Harris and Ramsey County (Construction), Futuro Health and Vista Prairie Communities (Healthcare) and Minnesota Technology Association, U.S. Bank and V2R (Information Technology).

Glossary

Certificate

A certificate may be awarded by either an educational institution or independent education and training provider associated with specific programs of study. This definition is derived from the Minnesota Office of Higher Education's "Educating for the Future Report."

Certification

A certification is a type of non-degree credential that demonstrates proficiency and knowledge, through examination, in a specific industry or trade. Evaluating candidates for certification relies on independent, third-party professional and industry-based groups. These national organizations develop and maintain relevant proficiency standards that are assessed and sanctioned by industry-approved examination facilities, independent of any educational institution or training program. This definition is derived from the Minnesota Office of Higher Education's "Educating for the Future Report."

Credential

A credential is documentation of attainment of a predetermined set of learning outcomes.

Credential of Value (CoV)

A Credential of Value (CoV) is documentation of attainment of a predetermined set of learning outcomes that are aligned to in-demand occupations that pay a family-sustaining-wage or meet essential community needs.

Critical Occupations

Occupations that meet essential community needs, called "Critical Occupations" in this analysis, include jobs in healthcare, direct care, K-12 and early childhood education that did not qualify for inclusion due to low wages but are vital building blocks for Minnesota and the economy. This definition is based on the Rockefeller Institute of Government's "Defining the Care Workforce" analysis. A full list of Critical Occupations is included in the appendix.

Current High Demand

Current High Demand: Identified as an "Occupation in Demand" by the Minnesota Department of Employment and Economic Development's (MN DEED) Occupations in Demand (OID) dataset with three,

four, or five stars. This is calculated based on 1) high number of job vacancies, 2) high number of existing jobs, 3) low number of UI weeks claimed and 4) low seasonality. The formula used to calculate the quintiles for OID is: EmploymentShare + JVshare - 0.5*UIshare – 0.5*SeasonalityShare

- **Employment Share** for an individual occupation is the occupation's share of total regional employment.
- **JV Share** for an individual occupation represents the occupation's vacancies as a share of all vacancies reported within the region over the last two years.
- **UI Share** for an individual occupation is the occupation's share of total weeks of Unemployment Insurance claimed in the region over the last year. This score is preceded by a minus sign because it is used to reduce an occupation's short-term demand.
- **Seasonality Share** is preceded by a minus sign because it is used to reduce an occupation's short-term demand based on the level of seasonality within that occupation. The formula for seasonality has been calculated as follows: [(Occupation's % seasonality) * (Occupation's regional employment share)]/(Average % seasonality for all occupations)

Diploma

Diplomas are earned after completing short curricula of at least 45 quarter credits or 30 semester credits.

Essential Community Needs

See "Critical Occupations."

Family-Sustaining Wage

Family-sustaining wage occupations are defined as occupations for which the median wage is equal to or higher than the full-time worker wage required for a household of three—one full-time working adult, one part-time working adult and one child—to meet basic-needs cost of living needs at the statewide or any Planning Region level in Minnesota based on the Minnesota Department of Employment and Economic Development's (MN DEED) Cost of Living Data Tool. An occupation can meet this criterion based on either of two sources: DEED's Occupations in Demand tool (statewide or in any of the six DEED planning regions) or using statewide median wages from Chmura.

Forecasted High Demand

Forecasted High Demand: Identified as an occupation that meets at least two of the following four criteria: 1) Forecasts higher than average growth over the next ten years; 2) Forecasts needed replacement of over half of the workforce employed as of [the current quarter's] estimates over the next five years; 3) Has an unemployment rate under 3% as of [the current quarter's] estimates; 4) Has a higher than expected volume of unique deduplicated online job postings regionally in 2024 compared to occupation's employment share. The formula to measure if an occupation has a high relative posting volume has been calculated as follows: High Relative Posting Volume = (occupation's % of regional postings)/(occupation's % of regional jobs) >1

In-Demand

In-demand occupations are defined as roles at the 6-digit SOC classification level that meet either current high demand criteria and/or forecasted high demand criteria at the Minnesota statewide level or in any of Minnesota Department of Employment and Economic Development's (MN DEED's) six planning regions.

Included Occupations

Occupations meeting criteria for inclusion in analysis. These occupations are in-demand and pay a family-sustaining wage or are Critical Occupations meeting essential community needs. A full list of included occupations is available in the appendix, under "Selected Occupation Tables."

Job Posting

A job posting is a public announcement by an employer advertising a vacant job position, typically including details like the job title, key responsibilities, required qualifications and application instructions, designed to attract potential candidates to apply for the role. Job postings have been deduplicated, filtered and grouped into 6-digit SOCs to standardize analysis.

License

A license is a type of credential that is generally awarded by a government-regulated agency. This award may be granted by a federal entity, but usually comes from the state level. A license may be required before an individual may work in specific professions. This definition is derived from the Minnesota Office of Higher Education's "Educating for the Future Report."

Occupation

Occupations are defined by the most specific job category within the Standard Occupational Classification (SOC) system, where the occupation is identified by a unique six-digit code. Each digit of the SOC code represents a hierarchical level of the job classification, allowing for detailed identification of an occupation within a broader field; the first two digits signify the major group, the third the minor group, the next two the broad occupation and the last digit represents the specific detailed occupation within that category. Multiple job titles and roles are frequently grouped within a single six-digit SOC. The occupation is used to simplify analysis of jobs in a standardized way. This analysis uses Lightcast's SOC code structure.

Occupation Group

The major occupation group signified by two-digit Standard Occupational Classification (SOC) codes. The twenty-three major occupation groups include Management (11), Business and Financial Operations (13), Computer and Mathematical (15), Architecture and Engineering (17), Life, Physical, and Social Science (19), Community and Social Service (21), Legal (23), Educational Instruction and Library (25), Arts, Design, Entertainment, Sports, and Media (27), Healthcare Practitioners and Technical (29), Healthcare Support (31), Protective Service (33), Food Preparation and Serving Related (35), Building and Grounds Cleaning and Maintenance (37), Personal Care and Service (39), Sales and Related (41), Office

and Administrative Support (43), Farming, Fishing, and Forestry (45), Construction and Extraction (47), Installation, Maintenance, and Repair (49), Production (51), Transportation and Material Moving (53) and Military Specific (55).

Registered Apprenticeship

A Registered Apprenticeship is an industry-driven, high-quality career pathway that combines paid on-the-job learning with related technical instruction to meet business talent needs. Registered Apprenticeships are industry-vetted and approved and validated by the Minnesota Department of Labor and Industry.

SOC Code

Occupations are classified using the U.S. Bureau of Labor Statistics' Standard Occupational Classification (SOC) typology.