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**OCCUPATIONAL SKILLS  
TRAINING FOR  
INDIVIDUALS  
WITH INTELLECTUAL AND  
DEVELOPMENTAL  
DISABILITIES**

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As Required by  
Senate Bill 2038  
86th Legislature  
Regular Session 2020

Texas Workforce Commission  
INSERT DATE



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## Executive Summary

Pursuant to Senate Bill (SB) 2038, 86th Texas Legislature, Regular Session (2019), the Texas Workforce Commission (TWC) has prepared a report regarding occupational skills training for individuals with intellectual and developmental disabilities (IDD).

SB 2038 requires TWC to identify potential funding sources for postsecondary certification, occupational licensing, and other workforce credential programs for individuals with IDD. The law also requires TWC to identify specific occupations in high-demand industries in Texas for which some type of workforce credential is required and that may be appropriate for individuals with IDD.

In developing this report, TWC compiled information and data on occupational skills training (OST) programs in Texas that are funded through a variety of sources. Additionally, TWC used information and stakeholder feedback from the Texas Health and Human Services (HHSC) legislative report on SB 2027, 85th Texas Legislature, Regular Session (2017). TWC provided an update on the progress of this report to HHSC's Intellectual and Developmental Disability System Redesign Advisory Committee's Employment Subcommittee in January 2020.

Data developed by TWC's Labor Market and Career Information department was used to identify labor market trends and provide specific industry and occupational information. TWC conducted research that identified potential funding sources from both the public and private sectors. Additionally, TWC examined existing postsecondary training programs for individuals with IDD and other underserved populations.

The report identifies a variety of public and private funding sources that could be used to design a certification training program in high-demand industries for individuals with IDD. While it is a challenge to identify specific occupations that would be suitable for individuals with IDD due to the number of diagnoses within that categorization, individualized educational supports such as adjusted eligibility criteria, personal assistants, and attendants or notetakers could make participation in any OST program accessible to individuals with IDD. Individualized job structuring and accommodations could allow individuals with an OST certification to obtain competitive, integrated employment in their chosen field.

Expansion of current college and university-based programs for individuals with disabilities in Texas may be advantageous for those with IDD. These programs provide training, certificates, and credentialing for individuals with disabilities.

Additionally, these programs, as well as partner programs, provide an array of education, services, and supports needed for individuals with disabilities, including those with IDD, to achieve competitive, integrated employment at a living wage.

# 1. Background and Overview

SB 2038 builds on SB 2027 (85th Legislature Texas, Regular Session, 2017). S.B. 2027 directed HHSC to conduct a study in collaboration with TWC regarding OST programs available in Texas for individuals with intellectual disabilities (ID).

SB 2027 required a one-time report studying OST programs in Texas for individuals with ID. A joint workgroup consisting of HHSC, TWC, and external stakeholders worked together to produce the report. The SB 2027 workgroup made the decision that because ID is one group of diagnoses under intellectual and developmental disabilities (IDD), the term IDD would be used throughout the report. The report identified regions in the state where training programs should be improved or expanded, as well as strategies for placing existing program graduates with IDD into fulfilling jobs via existing, improved, or expanded programs.

The SB 2027 workgroup sent out a statewide survey to agencies and organizations involved in providing services to people with IDD, individuals with IDD, families, community partners, and other stakeholders. The workgroup received full or partial responses from 1,155 respondents. Responses indicated that there is interest in having OST programs for individuals with IDD in Texas. Respondents were given choices of different types of trades that would interest them. The top choices were arts and design, community and social work, food and restaurant, education and training, and hospitality. The SB 2027 report provided information about postsecondary and training programs offered in Texas for individuals with IDD and noted that there was a lack of OST programs for this population.

Appendix D from the SB 2027 report, External Stakeholder Recommendations, recommended that TWC produce a report on possible funding sources for OST programs for individuals with IDD. The recommendations also suggested identification of specific occupations requiring a certificate that would be appropriate for individuals with IDD within in-demand industries. These two recommendations make up SB 2038.

TWC and its 28 Local Workforce Development Boards (Boards), along with their contracted service providers and community partners, provide a wide range of quality workforce services for employers, job seekers, workers, veterans and their spouses, foster youth, communities, students and their parents, and individuals with disabilities throughout the state. The major functions of TWC include workforce development, administering programs such as child care and other support services

for targeted populations participating in workforce training, and administering the unemployment benefit and tax programs. TWC also provides labor market information and analysis on shifts in occupations and industries within the state and administers the state's Adult Education and Literacy program.

TWC supports a variety of training programs to equip the workforce with the skills needed for employment in Texas. In Fiscal Year 2019 (FY'19), nearly 35,000 individuals received training through funding supported by the Workforce Innovation and Opportunity Act (WIOA), the Skills Development Fund, the Apprenticeship program, and other TWC-administered training programs. More than 11,000 workers participated in WIOA occupational training, which is available to dislocated workers, disadvantaged youth, and unemployed or low-wage-earning adults. Almost 6,400 workers were trained through an apprenticeship program that provides a combination of on-the-job training and classroom instruction for highly-skilled trades and occupations.

TWC receives funding from multiple federal agencies for the development and implementation of training and certification programs, including funding specifically for underserved populations. Most of this funding is distributed to Boards across the state. Examples of these federally funded programs include the WIOA Title I program, the Employment Service program, the Temporary Assistance for Needy Families Employment and Training program, and the Supplemental Nutrition Assistance Program Employment and Training program. The distribution of funds is based on a funding formula and the allocation rules in TWC Chapter 800 General Administration rules, Subchapter B, Allocations.

TWC's Vocational Rehabilitation Division (TWC-VRD) does not provide funding for the creation or implementation of a postsecondary certification, occupational license, or other workforce credentials programs. However, TWC-VRD is committed to providing financial and vocational counseling support and guidance to Texans with disabilities to participate in such programs. In FY'19, TWC-VRD supported approximately 7,500 individuals with disabilities in obtaining vocational and/or apprenticeship training, postsecondary degrees, occupational licenses, or other workforce credentials. Of that number, 2,286 or 30 percent were individuals diagnosed with IDD. Additionally, TWC-VRD funds and manages several programs that do not provide certification but do help individuals with disabilities prepare for competitive, integrated employment such as Project SEARCH™ and the Summer Earn and Learn (SEAL) program.

TWC's workforce programs, delivered through Boards and their contracted service providers and community partners, place a great deal of importance on supporting

and developing a well-trained workforce for Texas employers. These programs provide training and retraining programs for job seekers with a focus on programs that promote the growth of a skilled labor force in occupations and industries that support the high demands of employers across Texas. Boards fulfill an important role in determining the types of training programs that will be offered in their respective local workforce development areas.

Boards analyze and assess a variety of factors relating to local workforce conditions, and the results of that analysis contribute to each Board's decision to include specific occupations on the Board's in-demand and target occupations lists. A Board's target occupations list also informs training providers of the types of occupational skills training that the local labor force and employers need most. A list of the most in-demand industries and occupations and industry projected growth through 2026, using TWC Labor Market and Career Information data, can be found in Appendix C.

Workforce Solutions Office staff members who are knowledgeable of the training needs of the local labor force strive to identify eligible job seekers with skills gaps who can benefit from training directed toward the Board's target occupations. Additionally, staff offers customers enrollment in appropriate training to improve job seekers' employability in the local economy.

Training programs offered by eligible training providers for TWC's workforce programs are listed on the Statewide List of Certified Training Providers that can be found at <https://twc.texas.gov/partners/eligible-training-providers>. Eligibility for training providers is determined by a variety of factors, one of which requires a direct relationship between the training program offered and the occupations on the Board's target occupations list.

In FY'19, one or more individuals with a cognitive or intellectual disability graduated from the following TWC Workforce Programs funded training programs:

- Range Science and Management
- Nurse/Nursing Assistant/Aide and Patient Care Assistant
- Machine Tool Technology/Machinist
- Information Resources Management/CIO Training
- Computer Systems Networking and Telecommunications
- Computer/Information Technology Services Administration and Management, Other
- Legal Assistant/Paralegal
- Heating, Air Conditioning, Ventilation, and Refrigeration Maintenance Technology/Technician (HAC, HACR, HVAC, HVACR)

- Welding Technology/Welder
- Truck and Bus Driver/Commercial Vehicle Operation
- Health Information/Medical Records Technology/Technician
- Pharmacy Technician/Assistant
- Licensed Practical/Vocational Nurse Training (LPN, LVN, Certificate, Diploma, AAS)
- Administrative Assistant and Secretarial Science, General

The requirements for postsecondary certification, occupational licenses, or other workforce credential programs vary widely. In 2018, 19 percent of the Texas workforce held occupational licenses and 4.99 percent were certified.<sup>1</sup> There are no national standards for credentialing, so each state differs in cost and time to obtain a certificate or license and the number of exams needed to pass. Variations in occupational licensing can be significant from state to state. For instance, in Texas, it takes much longer to become a cosmetologist or barber than it does to become an emergency medical technician (approximately 350 days or 1,500 hours of education versus approximately 35 days or 150 hours).

The most valuable credential is a required licensure or certification needed for advanced or higher-skilled career positions. An individual with IDD who goes through a credentialing or licensure process may receive ancillary benefits including socialization and development of soft and executive skills in addition to specific occupational training that might increase his or her ability to obtain competitive, integrated employment.

An alternative to an occupational license or formal certificate to consider for the IDD population, and specifically for some individuals diagnosed with ID, is a voluntary certificate of completion in a specified occupation. Examples of these alternatives include the PATHS and E4 Texas programs at Texas A&M University and the Texas Center for Disability Studies at the University of Texas, respectively. Both programs assist individuals with IDD by offering:

- training in independent living;
- skills training in certain direct support professional positions;
- a certificate of completion that is not a formal occupational certificate or license; and

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<sup>1</sup> Morris M. Kleiner, PhD and Evgeny S. Vorotnikov, PhD, "At What Cost? State and National Estimates of the Economic Costs of Occupational Licensing" (Institute for Justice November 2018)

- assistance in finding employment.

PATHS and E4 Texas are two of 15 programs in Texas modeled after the US Department of Education's Transition and Postsecondary Programs for Students with Intellectual Disabilities grant program. Appendix D provides a list and a short description of Texas' 15 postsecondary programs that currently provide services to individuals with disabilities.

The Texas Higher Education Coordinating Board (THECB) was previously required to update its inventory of postsecondary educational programs and services provided for individuals with IDD every two years. SB 1017, 86th Texas Legislature, Regular Session (2019), changed this to an annual update. This inventory can be used to see which colleges in Texas offer certificates to individuals with IDD that could be used to gain employment. The list with detailed information about each program can be found on the 60x30TX website: <http://www.thecb.state.tx.us/apps/IDD/IDDTexas.cfm>.

TWC will post the THECB list on the TWC website so that individuals with IDD, their families, and other partners and stakeholders may access it from a variety of locations. TWC will also publish fact sheets on the TWC website for TWC-VRD funded programs that would be appropriate for some individuals with IDD, such as Project Search™, SEAL, and Advise TX for students with disabilities.

Project SEARCH™ is a joint initiative of TWC-VR and the Texas Education Agency (TEA). An international initiative that supports partnerships among businesses (employers), local independent school districts (ISDs), and other entities that serve individuals with disabilities, including IDD, Project SEARCH™ promotes the successful long-term employment of TWC-VRD customers in jobs that are stable, meaningful, integrated, and competitively compensated. TWC-VRD and its ISDs and employer partners currently have 28 active Project SEARCH™ sites across Texas.

Project SEARCH™ programs take place in a business setting like a hospital or bank, where total immersion in the workplace facilitates teaching and learning and enables enrolled customers to develop marketable work skills and increase their employability. Each customer may participate in three internships to explore a variety of career paths. The customer works with a team that includes family and partnering agencies. The team helps the customer create an employment goal and supports the transition from school to work.

Project SEARCH™ is a well-established, nationally recognized model that consistently achieves successful outcomes for students with disabilities. TWC has identified opportunities to build on this model to develop similar programs for other target

populations. For example, these programs may include internships, other work-based learning opportunities, and skills training for in-school and out-of-school youth, young adults, or adults who require job skills training using this model. From the 2016–2017 school year to the 2018–2019 school year, Project SEARCH™ served 553 individuals .

WIOA's requirements regarding Pre-Employment Transition Services (Pre-ETS) include working with Boards, Workforce Solutions Offices, and employers to develop work opportunities for students age 14–22 with disabilities, including internships, summer employment, apprenticeships, and other employment opportunities available throughout the school year. As part of the Pathways to Careers (PCI) initiative, SEAL, a statewide work-based learning program conducted in partnership with TWC-VR and the 28 Boards and their employer partners, was implemented in 2017. More than 6,800 individuals have participated in SEAL since its inception.

The Advise TX Innovation and Opportunity initiative (Advise TX IO) is a partnership between TWC-VRD and THECB to enhance services to high school students with disabilities. Advisers in 114 high schools throughout the state will help students in grades 9–12 identify career goals and postsecondary educational options; complete college, university, and/or technical school applications; apply for financial aid; and provide the students with instruction in self-advocacy.

There are numerous national certificate programs for credentialing and licensing for occupations like bartenders, food handlers, and janitors in which some individuals with IDD already participate. These credentialing programs include the National Center for Construction Education and Research, SERV Safe, and OSHA.

TEA offers hundreds of classes that result in credentialing while students are in high school. The 2019–2020 Approved List of Industry-Based Certifications offered by TEA can be found at <https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/approved-cte-programs>.

In 2016, Governor Greg Abbott established the Tri-Agency Workforce Initiative, which assesses local economic activity, examines workforce challenges and opportunities, and considers innovative approaches to meeting the state's workforce goals. The Tri-Agency Workforce Initiative is led by the Commissioners of TEA, THECB, and TWC. TEA, TWC, and THECB collaborate on a variety of programs through the Tri-Agency Workforce Initiative. The Commissioners of TEA, TWC, and THECB are charged with organizing the combined resources of the three agencies to implement reforms adopted by the 86th Texas Legislature through the passage of House Bill 3, and to identify strategies to address long-term workforce development needs across the state.

The agencies partnered on a tri-agency report for the Office of the Texas Governor, “Prosperity Requires Being Bold: Progress Report” (February 2020),<sup>2</sup> which details numerous projects that help prepare Texas public school graduates, including some projects designed to serve underserved populations, such as IDD, for postsecondary education to meet the needs of Texas businesses.

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<sup>2</sup>[https://gov.texas.gov/uploads/files/press/Tri\\_Agency\\_Report\\_FINAL\\_SUBMITTED\\_TO\\_GOVERNOR\\_02.2020.pdf](https://gov.texas.gov/uploads/files/press/Tri_Agency_Report_FINAL_SUBMITTED_TO_GOVERNOR_02.2020.pdf)

## 2. Potential Funding Sources

TWC identified numerous funding sources for OST programs, including those targeted for individuals with disabilities, including IDD.

The following funding sources may be appropriate when designing new curriculum or programs for individuals with IDD:

**Workforce Innovation and Opportunity Act I Title I Funds:** Through the US Department of Labor, these funds are designed to help job seekers access employment, education, training, and support services to succeed in the labor market and to match employers with the skilled workers they need to compete in the global economy. In Texas, the WIOA Title I funds are administered by TWC (<https://twc.texas.gov/programs/workforce-innovation-opportunity-act-wioa-program-overview>). For more information on the WIOA Title I funding, visit <https://www.dol.gov/agencies/eta/wioa/>.

**The Office of Career, Technical, and Adult Education's Adult Education & Literacy Program:** Through the US Department of Education, these funds provide English language, math, reading, and writing instruction to help students acquire the skills needed to succeed in the workforce, earn a high school equivalency, or enter college or career training. TWC administers the Adult Education and Literacy program in Texas (<https://twc.texas.gov/programs/adult-education-literacy-program-overview>). For more information on the Adult Education and Literacy program, visit <https://www2.ed.gov/about/offices/list/ovae/pi/AdultEd/index.html>.

**Skills Development Fund Program:** Administered by TWC, the Skills Development Fund program provides local customized training opportunities for Texas businesses and workers to increase the skill levels and wages of the workforce through collaboration among businesses, public community and technical colleges, Boards, and economic development partners. For more information on the TWC Skills Development Fund program, visit <https://twc.texas.gov/programs/skills-development-program-overview>.

**The Jobs and Education for Texans Grant Program:** The Jobs and Education for Texans (JET) grant program was allocated \$16 million for the FY'20-'21 biennium to provide grants to public community, state, and technical colleges, and to ISDs to purchase and install equipment necessary for the development of career and technical education courses or programs that lead to a license, certificate, or postsecondary degree in a high-demand occupation. Formerly under the direction of

the Texas Comptroller of Public Accounts, legislation passed by the 84th Texas Legislature transferred oversight of the state-funded program to TWC. For more information on JET, visit <https://twc.texas.gov/partners/jobs-education-texans-jet-grant-program>.

**Apprenticeships: Closing the Skills Gap:** This program engages employers nationwide in creating new apprenticeship opportunities across a wide range of occupations and industry sectors. Eligible grant applicants include, but are not limited to, nonprofit trade organizations, industry or employer associations, educational institutions (community colleges and four-year universities), labor unions, and/or labor management organizations. TWC manages apprenticeship grants in Texas (<https://twc.texas.gov/programs/apprenticeship-program-overview>). For more information on Apprenticeships: Closing the Skills Gap, visit <https://www.dol.gov/sites/dolgov/files/apprenticeship/files/Apprenticeship-Closing-The-Skills-Gap-Grant-Program-Summaries.pdf>.

**ApprenticeshipUSA State Expansion:** This program helps states to develop and implement comprehensive strategies to support apprenticeship expansion; engage industry and workforce intermediaries, employers, and other partners to expand and market apprenticeship to new sectors and underserved populations; enhance capacity to conduct outreach and work with employers to start new programs; and expand and diversify participation in apprenticeship through innovations, incentives, and system reforms. TWC administers ApprenticeshipTexas with funding from the US Department of Labor's ApprenticeshipUSA State Expansion (<https://twc.texas.gov/programs/apprenticeship-program-overview>). For more information on ApprenticeshipUSA State Expansion, visit <https://www.dol.gov/agencies/eta/apprenticeship/policy/tens-tegls>.

**The Strengthening Career and Technical Education for the 21st Century Act:** Through the US Department of Education, the Strengthening Career and Technical Education for the 21st Century Act (Perkins V) is a principal source of federal funding to states and discretionary grantees for the improvement of secondary and postsecondary career and technical education (CTE) programs across the nation. The funding from Perkins V provides state education agencies to expand opportunities for all students to explore, choose, and follow CTE programs of study and career pathways to earn credentials of value. The purpose of Perkins V is to develop more fully the academic, career, and technical skills of secondary and postsecondary students who elect to enroll in CTE programs. TEA is the primary grant holder of Perkins V funding. THECB is a subgrantee of Perkins V funding with responsibilities for postsecondary CTE education. For more information on Perkins V, visit

<https://blog.ed.gov/2018/08/strengthening-career-technical-education-21st-century-act-signed-law/>.

**Transition and Postsecondary Programs for Students with Intellectual Disabilities:** Transition and Postsecondary Programs for Students with Intellectual Disabilities (TPSID programs) are often launched with private donations or seed funding from the federal Higher Education Opportunity Act of 2008. TPSID programs allow students with ID to be eligible for Pell grants, Supplemental Educational Opportunity Grants, and the Federal Work-Study program. A best practice for TPSID programs is to immerse the students in campus life. This includes living in the residence halls, eating at campus dining facilities, and navigating typical demands of college students. Curriculum often mixes courses on socialization, self-help, and independence skills with individualized training in employment competencies. In most TPSID programs, the students audit one or more regular college courses each semester. These courses are selected and sometimes modified to meet the student's special needs. Another component offered by many TPSID programs is a practicum, job shadowing, or an internship in the community or on campus, where students improve practical work skills. Graduates typically receive a Certificate of Completion. Currently, no colleges in Texas have a TPSID grant. For more information on TPSID programs, visit <https://www2.ed.gov/programs/tpsid/index.html>.

**Disability Employment Initiative:** Disability Employment Initiative (DEI) expands the capacity of American Job Centers (called Texas Workforce Solutions Offices in Texas) to improve education, training, and employment outcomes of individuals with disabilities. The grants support extensive collaboration across multiple workforce and disability service systems in each state, including vocational rehabilitation, mental health, intellectual/developmental disability agencies, independent living centers, business leadership networks, and other community and nonprofit organizations. DEI expands the public workforce system's participation in the Social Security Administration's Ticket to Work program by requiring participating state workforce agencies or local workforce investment boards to become active employment networks. Texas does not currently participate in DEI. For more information on DEI, visit <https://www.dol.gov/agencies/odep/initiatives/disability-employment-initiative>.

**Comprehensive Transition Program:** Through the US Department of Education, the Comprehensive Transition Program (CTP) is a one-time, five-year grant designed to support individuals with ID who want to continue their academic and/or career training to prepare for employment. CTP allows students with ID to complete a degree, certificate, or non-degree program offered by a college or career program that is approved by the US Department of Education. Texas does not have a CTP

grant currently. For more information on CTP, visit <https://www2.ed.gov/programs/tpsid/index.html>.

**Pathways to Careers for Students with Disabilities Demonstration Grants:**

The US Department of Labor’s Office for Disability Employment Policy (ODEP) is currently providing funding to two community college demonstration model grants in Tennessee and New York to develop innovative practices in recruitment, retention, and credential attainment for youth and young adults with disabilities.

Pathways to Careers implements strategies that have been shown to improve access and opportunity for youth with disabilities.

ODEP shared the approaches of the Pathways to Careers grants with government and workforce agencies through webinars for Federal Partners in Transition and the Registered Apprenticeship College Consortium. For more information on the Pathways to Careers for Students with Disabilities Demonstration Grants, visit

<https://www2.ed.gov/programs/rscpid/index.html>.

**Grow Your Own Grant Program:** Administered by TEA, this program facilitates increased entry of qualified, diverse candidates into the teaching profession, particularly in rural and small school settings. For more information on the Grow Your Own Grant Program, visit <https://tea.texas.gov/texas-educators/educator-initiatives-and-performance/grow-your-own>.

**Texas College and Career Readiness School Models:** Through TEA, the College and Career Readiness School Models are a network of Texas Science, Technology, Engineering, and Math (T-STEM) Academies, Early College High Schools (ECHS), Pathways in Technology Early College High Schools (P-TECH), and Industry Cluster Innovative Academies (ICIA) that help historically underserved students develop technical skills, earn dual college credit, and pursue in-demand career paths. For more information on Texas College and Career Readiness School Models, visit <https://tea.texas.gov/academics/college-career-and-military-prep/texas-college-and-career-readiness-school-models-ccrsm>.

**The Texas Council for Developmental Disabilities:** The Texas Council for Developmental Disabilities (TCDD) funds projects that will help meet the goals and objectives in their five-year state plan. When funds are available, TCDD issues a Request for Applications in specific content areas. The amount of funding varies. For more information on the Texas Council for Developmental Disabilities grants, visit <https://tcdd.texas.gov/grants-rfas/>.

**The ARC of the Capital Area—Autism Assets @ Work:** The Arc of the Capital Area’s Autism Assets @ Work program is a two-week training program that prepares individuals on the autism spectrum to work in the information technology industry. At the end of the training, some participants may be offered paid internships that could lead to full-time employment.

The Arc of the Capital Area partners with TWC-VR and Dell Technologies on the Autism Assets @ Work program. The purpose of the program is to enhance participants’ skills and networks and build a résumé. Participants are trained in soft skills that include social communication, collaboration, and managing emotions. They will also engage in team projects that will be presented to staff and executives at Dell Computer Technology in Round Rock, Texas. For more information on Autism Assets @ Work, visit <https://www.arcaustin.org/assets/>.

**Private Grants:** There are numerous private foundations that provide grants to support employment for individuals with disabilities. Examples include the following:

- **The Kessler Foundation (<https://kesslerfoundation.org>):** Kessler’s 2020 Signature Employment Grants focus on projects that use benefit planning, workforce incentives, and part-time employment to help individuals with disabilities obtain employment or reenter the job market following injury. However, all submitted innovative grant concepts on any topic are eligible for funding.
- **The J. Willard and Alice S. Marriott Foundation (<https://www.marriottfoundation.org>):** This foundation supports nonprofit organizations that provide civic and human services, foster educational achievement, expand opportunities for youth and adults, develop the next generation of hospitality leaders, and lead innovation in health and medicine.
- **The Doug Flutie Jr. Foundation for Autism (<https://www.flutiefoundation.org>):** This foundation provides grants to organizations providing critical, innovative, and responsive services to individuals with autism and their families and for expanding a school’s access to technology tools that improve learning outcomes.
- **The May and Stanley Smith Charitable Trust Grant Program (<https://smithct.org>):** The Adults & Transitioning Youth with Disabilities grants are awarded to projects for adults and transitioning youth with intellectual, developmental, or physical disabilities that will maximize their ability to live independently, secure employment, and engage in an inclusive community.
- **The Global Down Syndrome Foundation (<https://www.globaldownsyndrome.org>):** Grants are awarded to Down

syndrome organizations that are members of the Global Down Syndrome Foundation to host educational programs that are sustainable after grant funding ends for self-advocates, medical professionals, teachers, and parents.

- **The Growth through Opportunity Cadet Program** ([www.innovations.harvard.edu/growth-through-opportunity-cadet-program](http://www.innovations.harvard.edu/growth-through-opportunity-cadet-program) and <https://roanokecountyva.gov/1747>): Although not a grant, the Growth through Opportunity (GTO) cadet model is an innovative program for individuals with IDD. Participants volunteer for 16 weeks at law enforcement agencies where they receive career and life skills training. Each GTO cadet is given his or her own uniform and may work at the department for up to 12 hours per week. Officers work with candidates and their families to hone the volunteer experience specifically for their interests and goals, and cadets participate in this training program with the goal of transitioning into paid employment upon graduation. Currently, the GTO program operates in New Jersey and Virginia.
- **The Enterline Foundation** (<https://enterlinefoundation.org>): The Enterline Foundation's funding priority is for organizations providing services for the IDD population with a focus on those older than age 22. Amounts of funding vary depending on the project. One example is a four-year grant awarded to Hattie Larlham's Vocational Rehabilitation Public & Private Partnerships Program in Cleveland, Ohio. This program provides vocational training and employment opportunities to adults with developmental disabilities, including Doggie Day Care & Boarding, Hattie's Café & Gifts, as well as a program that involves a partnership with Little Tykes, a manufacturing company. The Enterline grant will provide employment opportunities to an estimated 150 individuals.

### 3. Potential Occupations

To identify occupations that may be appropriate for individuals with IDD, it is first important to understand what the term “IDD” encompasses. IDD is used to describe hundreds of distinct conditions. IDD is often used to describe situations in which an ID and other disabilities are present.

RightDiagnosis.com, one of the world’s leading providers of online medical health information, lists 822 types of common IDDs. There is a separate, lengthy list of rare types of IDD.<sup>3</sup>

An ID is a disability characterized by significant limitations in both intellectual functioning (reasoning, learning, and problem-solving) and adaptive behavior (everyday social and practical skills). ID is just one of many developmental disabilities. To meet the clinical definition of ID, there must be evidence of the disability during the developmental period of life, which, in the United States, is before age 18.<sup>4</sup> Most individuals with an ID are born with the disability.

Typically, ID is divided into four categories: mild, moderate, severe, and profound. These categories describe the degree of cognitive impairment and are defined by an IQ score and the amount and types of supports needed in abstract thinking, social interactions, and practical life skills such as self-care and care of the individual’s surroundings.<sup>5</sup> Characteristics of the four categories of ID can be found in Appendix B.

Identification of specific occupations in high-demand industries in Texas for which some type of workforce credential is required and may be appropriate for individuals with IDD is dependent on the individual’s skills, abilities, and career goals. There are any number of high-demand occupations an individual with IDD could pursue. For example, the US Department of Labor (DOL) provides grants for apprenticeships that combine paid on-the-job training with classroom instruction to prepare workers for highly skilled careers. Workers benefit from apprenticeships by receiving a skills-

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<sup>3</sup> 2014 Health Grades Inc. August 13, 2015. <https://www.rightdiagnosis.com/crtop/>

<sup>4</sup> 2019 American Association on Intellectual and Developmental Disabilities

<sup>5</sup> <https://www.healthyplace.com/neurodevelopmental-disorders/intellectual-disability/mild-moderate-severe-intellectual-disability-differences>

based education that prepares them for good-paying jobs. DOL's nine Industry-Recognized Apprenticeship Programs include the following high-demand apprenticeship occupations.

### **1. Advanced Manufacturing**

- CNC Set-Up Programmer—Milling and Turning; Machinist, Precision; Industrial Maintenance Repairer; Mold Maker, Die Casting, and Plastic Molding; Plastics Fabricator; Tool and Die Maker

### **2. Construction**

- Bricklayer; Carpenter; Electrician; Elevator Constructor Mechanic; Pipe Fitter; Plumber

### **3. Energy**

- Electrician, Powerhouse; Gas Utility Worker; Line Maintenance; Instrumentation Technician; Refinery Operator; Substation Operator

### **4. Financial Services**

- Bank Teller; Claims Adjuster; Insurance Underwriter; Credit Coordinator

### **5. Health Care**

- Dental Assistant; Emergency Medical Technician; Health Care Sanitary Technician; Nurse Aide; Paramedic; Pharmacist Assistant

### **6. Hospitality**

- Baker; Cook; Housekeeper

### **7. Information Technology**

- Computer Operator; Computer Peripheral Equipment Operator; Computer Programmer; Information Management; Telecommunications Technician

### **8. Telecommunications**

- Telecommunications Tower Technician; Wireless Technician; Telecommunications Antenna & Line Lead; Telecommunications Antenna and Line Foreperson; Telecommunications Construction Lead; Telecommunications Construction Foreperson; Fiber Optic Technician

### **9. Transportation**

- Diesel Mechanic; Electronic Systems Technician; Heavy Equipment Mechanic; Ship Fitter; Truck Driver

Appendix C identifies high-demand industries in Texas through 2026 for which a postsecondary certification, occupational license, or other workforce credential may be required.

Appendix E provides a list of 112 top occupations for which a high school diploma or equivalent and short-term or moderate job training would be required.

Appendix F provides a list of 80 top occupations in high-demand industries for which an associate's degree, postsecondary nondegree award, or some college but no degree would be required.

The occupation with the most expected job growth through 2026 in Texas that requires a certificate or postsecondary training is wind turbine technician. This occupation is expected to increase in terms of the numbers of jobs added by more than 108 percent by 2026. The job requires communication skills, comfort with heights, fast thinking, teamwork, ability to follow directions, physical conditioning, and attention to safety. Like all occupations on the list of high-growth jobs, someone with an IDD may be an excellent wind turbine technician depending on his or her physical and cognitive abilities.

The occupation with the most expected job growth through 2026 in Texas that requires a high school degree or equivalent is home health aides (expected increase of close to 43 percent), followed closely by personal care aides (expected increase of close to 40 percent). Texas offers certification in these industries to individuals with IDD through Texas A&M's PATHS and the University of Texas' E4Texas programs. The PATHS program was established in 2010 and E4Texas in 2017.

There are numerous states that have similar programs to certify individuals with IDD to become certified nursing assistants, personal care attendants, child care workers, and direct support professionals. Expanding these programs to other campuses across the state could be beneficial for individuals with IDD who want to pursue a career in these fields.

## 4. Conclusion

Regardless of disability, anyone may apply, and, if accepted, participate in any postsecondary certification, occupational license, or other workforce credential training programs that currently exist. Having a certificate or license can assist an individual in obtaining employment but will not guarantee a position or help him or her maintain a job. An individual's ability to do the job and acclimate to the workplace culture is how anyone, regardless of their abilities, maintains employment. Individualized educational supports, such as adjusted eligibility criteria, personal assistants, and attendants or notetakers, could make participation in any OST program accessible to individuals with IDD.

There are a variety of funding sources that could be used to design a certification training program in high-demand industries for individuals with IDD. These funding sources include state and federal funding available through state and federal agencies, as well as private-sector funding available through multiple organizations.

To make existing programs related to skills training for individuals with IDD more accessible, TWC will post the THECB list on the TWC website. Additionally, TWC will publish fact sheets on the TWC website about programs that TWC-VRD funds and manages that provide employment opportunities for individuals with IDD, such as Project Search™, SEAL, and Advise TX for students with disabilities.

Expansion of the current college and university-based programs in Texas that provide training, certificates, and/or credentialing for individuals with disabilities funded through multiple sources and supported by partners, including TWC, could provide the array of education, services, and supports needed for individuals with IDD to achieve competitive, integrated employment at a living wage.

## Appendix A. Categories of Occupational Regulation in the United States

Registration, certification, or licensing for an occupation may be required by federal, state, city, or county regulation. Cities or counties may impose stricter requirements for a credential than the state.

Occupational regulation in the United States is usually divided into three distinct categories:

1. **Registration** is the least restrictive form of occupational regulation. To become registered, an individual files his or her name, address, and qualifications with a government agency before practicing the occupation. The registration process may include posting a bond or filing a fee. Examples of occupations for which an individual needs to register include domestic and commercial cleaners and warehouse workers.
2. **Certification** permits an individual who has achieved the level of skill and knowledge needed for a specific profession to perform the tasks of a job. Certification is obtained through an examination administered by a government or private nonprofit agency. Successful completion of the examination results in a certification in a specific industry. Examples of occupations for which certification is needed include car mechanics and travel agents.
3. **Occupational Licensure**, often referred to as “the right to practice,” involves a federal, state, or local government identifying legal qualifications required to work in a specific profession. Once the government has made that determination, only individuals with occupational licenses can earn income doing the tasks of the job.

Occupational licensing is usually designed to ensure high quality of service and to protect customers from adverse outcomes by eliminating individuals who are unable to do the job.

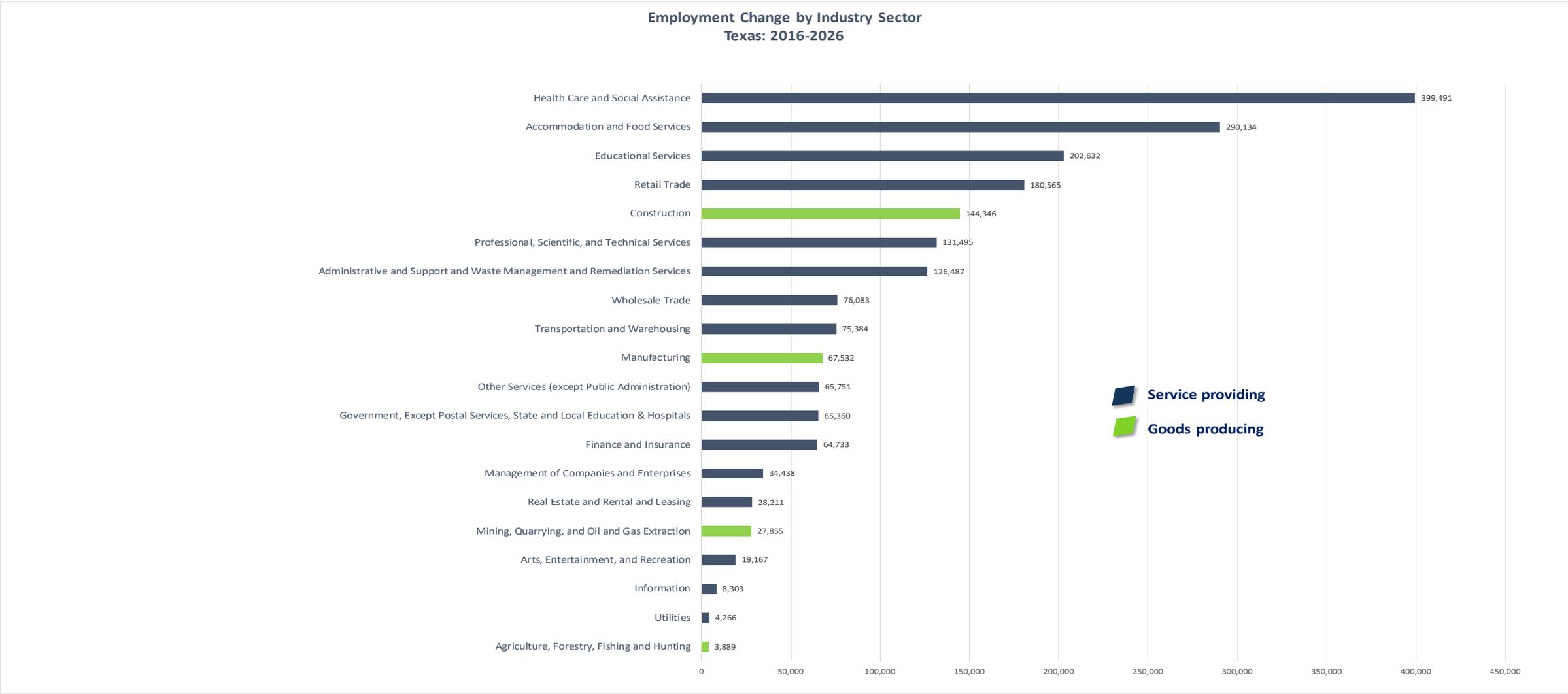
Common occupational licenses that are required in most of the United States include hairdressers, nurses, teachers, and electricians.

Appendix B. Characteristics of an Intellectual Disability from *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*

Definitions in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* for intellectual disability (ID) include the following characteristics:

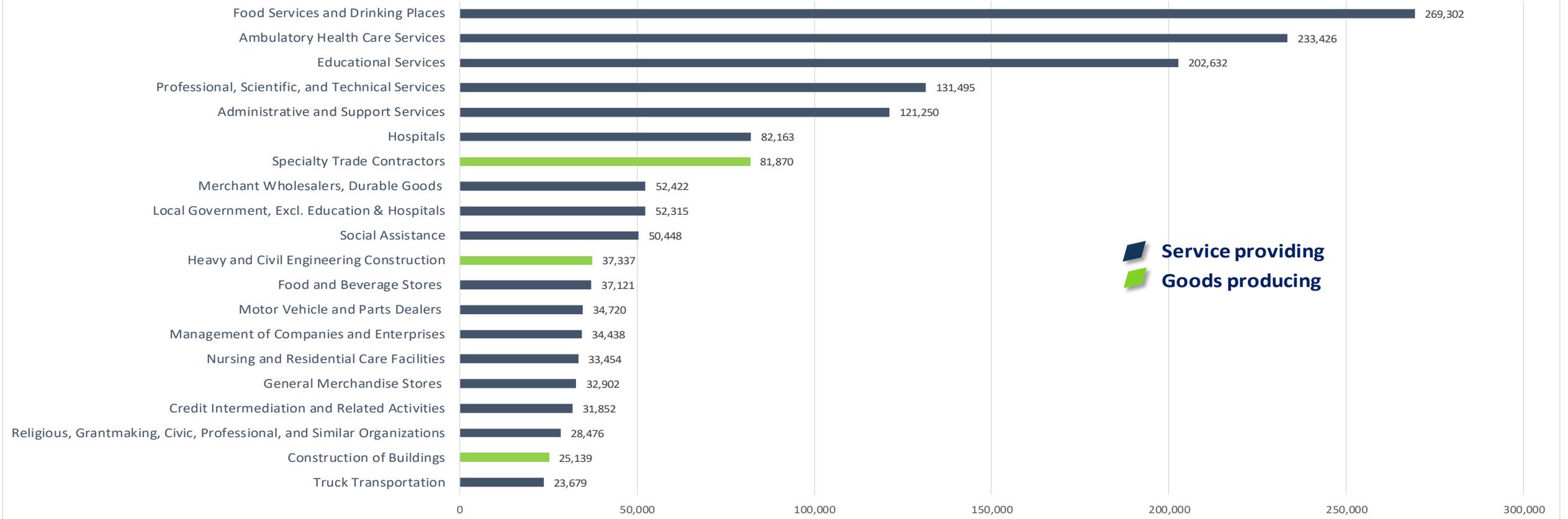
1. Mild ID: An IQ of 50–70; slower developmentally in all areas of life; can learn practical life skills; can read and write on a third to sixth grade level; can function daily in society. It is estimated that 85 percent of all individuals diagnosed as ID can be labeled as “mild.”
2. Moderate ID: An IQ of 35–49; has apparent developmental delays in areas such as speech and motor skills; may have a physical impairment; is able to learn basic safety skills and do basic self-care. It is estimated that 10 percent of all individuals diagnosed as ID can be labeled as “moderate.”
3. Severe ID: An IQ of 20–34; apparent and severe delays in development; little ability to communicate; may be able to learn simple self-care and daily routines but may need assistance; will need direct supervision and support in social situations. It is estimated that 3–4 percent of all individuals diagnosed as ID can be labeled as “severe.”
4. Profound ID: An IQ of less than 20; significant developmental delays in all areas of life; one or more obvious physical impairments; always requires close supervision; needs assistance with activities of daily living such as toileting, bathing, and feeding; not capable of living independently. It is estimated that 1–2 percent of all individuals diagnosed as ID can be labeled as “profound.”

Appendix C. Industry Projected Growth through 2026 in Texas



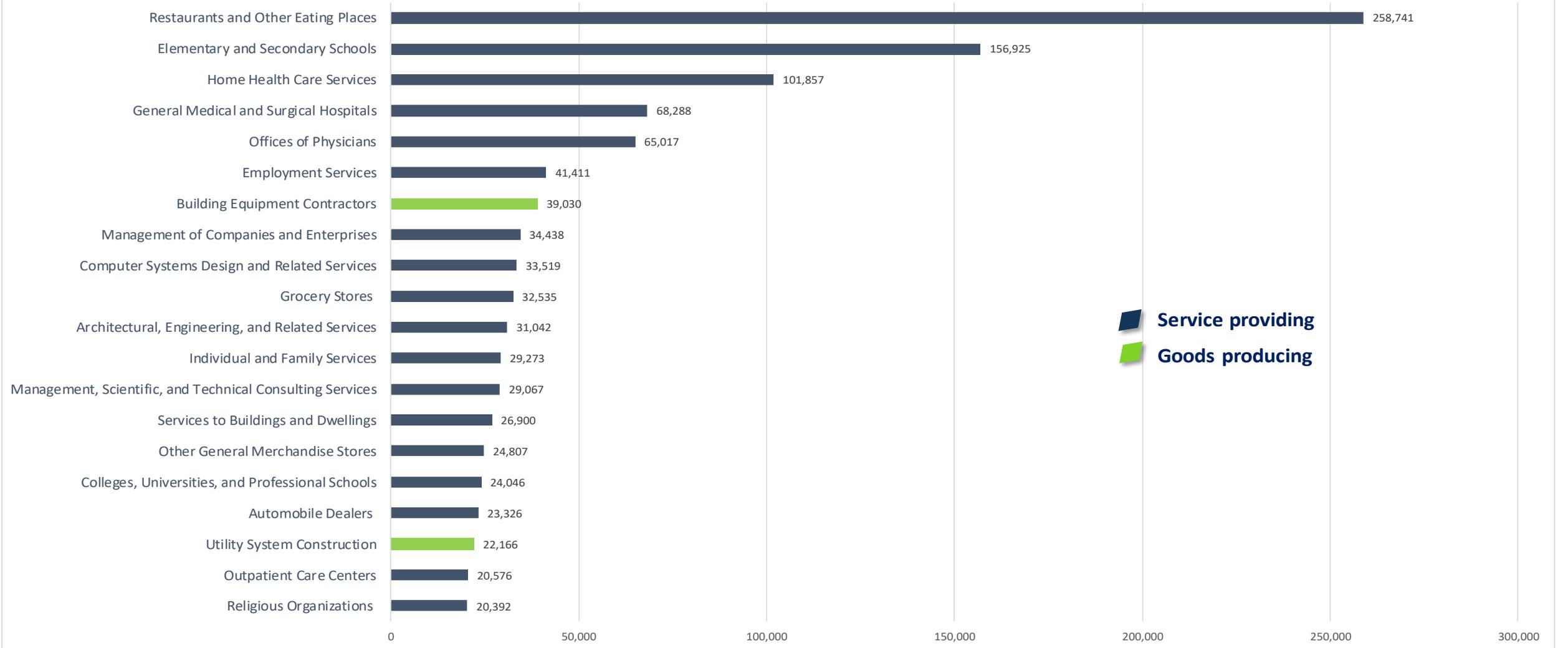
Industry Code	Industry Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Change 2016-2026
11	<b>Agriculture, Forestry, Fishing and Hunting</b>	59,589	63,478	3,889	6.5%
22	<b>Utilities</b>	49,152	53,418	4,266	8.7%
51	<b>Information</b>	194,246	202,549	8,303	4.3%
71	<b>Arts, Entertainment, and Recreation</b>	134,867	154,034	19,167	14.2%
21	<b>Mining, Quarrying, and Oil and Gas Extraction</b>	211,033	238,888	27,855	13.2%
53	<b>Real Estate and Rental and Leasing</b>	201,210	229,421	28,211	14.0%
55	<b>Management of Companies and Enterprises</b>	115,959	150,397	34,438	29.7%
52	<b>Finance and Insurance</b>	508,213	572,946	64,733	12.7%
999000	<b>Government, except Postal Services, State and Local Education &amp; Hospitals</b>	697,288	762,648	65,360	9.4%
81	<b>Other Services (except Public Administration)</b>	465,682	531,433	65,751	14.1%
31-33	<b>Manufacturing</b>	840,935	908,467	67,532	8.0%
48-49	<b>Transportation and Warehousing</b>	499,787	575,171	75,384	15.1%
42	<b>Wholesale Trade</b>	533,072	609,155	76,083	14.3%
56	<b>Administrative and Support and Waste Management and Remediation Services</b>	734,684	861,171	126,487	17.2%
54	<b>Professional, Scientific, and Technical Services</b>	678,032	809,527	131,495	19.4%
23	<b>Construction</b>	681,234	825,580	144,346	21.2%
44-45	<b>Retail Trade</b>	1,310,231	1,490,796	180,565	13.8%
61	<b>Educational Services</b>	1,239,466	1,442,098	202,632	16.3%
72	<b>Accommodation and Food Services</b>	1,149,208	1,439,342	290,134	25.2%
62	<b>Health Care and Social Assistance</b>	1,529,821	1,929,312	399,491	26.1%

## Employment Change by Industry Sector Texas: 2016-2026



Industry Code	Industry Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Change 2016-2026
484	Truck Transportation	133,826	157,505	23,679	17.7%
236	Construction of Buildings	155,969	181,108	25,139	16.1%
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	207,321	235,797	28,476	13.7%
522	Credit Intermediation and Related Activities	252,173	284,025	31,852	12.6%
452	General Merchandise Stores	296,471	329,373	32,902	11.1%
623	Nursing and Residential Care Facilities	183,003	216,457	33,454	18.3%
551	Management of Companies and Enterprises	115,959	150,397	34,438	29.7%
441	Motor Vehicle and Parts Dealers	182,670	217,390	34,720	19.0%
445	Food and Beverage Stores	235,218	272,339	37,121	15.8%
237	Heavy and Civil Engineering Construction	138,818	176,155	37,337	26.9%
624	Social Assistance	227,606	278,054	50,448	22.2%
930000	Local Government, Excl. Education & Hospitals	388,036	440,351	52,315	13.5%
423	Merchant Wholesalers, Durable Goods	310,056	362,478	52,422	16.9%
238	Specialty Trade Contractors	386,447	468,317	81,870	21.2%
622	Hospitals	420,638	502,801	82,163	19.5%
561	Administrative and Support Services	703,073	824,323	121,250	17.2%
541	Professional, Scientific, and Technical Services	678,032	809,527	131,495	19.4%
611	Educational Services	1,239,466	1,442,098	202,632	16.3%
621	Ambulatory Health Care Services	698,574	932,000	233,426	33.4%
722	Food Services and Drinking Places	1,029,886	1,299,188	269,302	26.1%

## Employment Change by Industry Sector Texas: 2016-2026



Industry Code	Industry Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Change 2016-2026
8131	Religious Organizations	143,091	163,483	20,392	14.3%
6214	Outpatient Care Centers	47,488	68,064	20,576	43.3%
2371	Utility System Construction	82,444	104,610	22,166	26.9%
4411	Automobile Dealers	118,708	142,034	23,326	19.6%
6113	Colleges, Universities, and Professional Schools	261,312	285,358	24,046	9.2%
4529	Other General Merchandise Stores	177,748	202,555	24,807	14.0%
5617	Services to Buildings and Dwellings	157,567	184,467	26,900	17.1%
5416	Management, Scientific, and Technical Consulting Services	121,561	150,628	29,067	23.9%
6241	Individual and Family Services	98,400	127,673	29,273	29.7%
5413	Architectural, Engineering, and Related Services	142,216	173,258	31,042	21.8%
4451	Grocery Stores	208,799	241,334	32,535	15.6%
5415	Computer Systems Design and Related Services	143,675	177,194	33,519	23.3%
5511	Management of Companies and Enterprises	115,959	150,397	34,438	29.7%
2382	Building Equipment Contractors	178,431	217,461	39,030	21.9%
5613	Employment Services	260,533	301,944	41,411	15.9%
6211	Offices of Physicians	215,692	280,709	65,017	30.1%
6221	General Medical and Surgical Hospitals	364,015	432,303	68,288	18.8%
6216	Home Health Care Services	258,176	360,033	101,857	39.5%
6111	Elementary and Secondary Schools	843,078	1,000,003	156,925	18.6%
7225	Restaurants and Other Eating Places	948,437	1,207,178	258,741	27.3%

## Appendix D. Postsecondary Programs for Students with Intellectual and Developmental Disabilities Funded through the US Department of Education

For more information on the programs listed in this appendix, see <http://www.theccb.state.tx.us/apps/IDD/IDDTexas.cfm>.

### **1. Project Access: Alamo Community College's Palo Alto College, San Antonio, Texas**

Project Access is designed to support students with IDD to access postsecondary education developing skills for gainful employment. The General Office Certificate is the first level of training for working in the administrative support field and can lead to an associate of applied science degree in Administrative Assistant. The program prepares the students to gain comprehensive skills and assume responsibilities in the workplace. Students will have advanced training with computer technology to prepare for the constantly changing and increasingly automated business environment. This is a cohort-based program with a limited number of seats available per semester.

### **2. ACC STEPS: Austin Community College, Austin, Texas**

ACC's STEPS is a two-year program for adults with IDD interested in gaining skills to enter the workforce or continue to develop their education. STEPS provides support to help adults achieve their individualized goals. In partnership with schools and agencies such as Texas Workforce Solutions–Vocational Rehabilitation Services, STEPS provides comprehensive supports for two years leading to increased independence and employability.

### **3. Aggie ACHIEVE: Texas A&M University, College Station, Texas**

Aggie ACHIEVE is a four-year inclusive higher education program for young adults with IDD to expand their interests and prepare for inclusive employment in the community. Aggie ACHIEVE students live on campus, participate in Texas A&M University (TAMU) classes, join clubs and organizations, prepare for inclusive employment, and integrate fully into student life at TAMU.

### **4. The Moving On/Next Step Program for Special Populations: Dallas County Community College's El Centro College, Dallas, Texas**

The Moving On/Next Step program is a two- to four-semester program designed for students with certain types of learning disabilities and intended to prepare students for the workplace by teaching interpersonal skills and basic work-related academic and computer skills along with essential career awareness and job search skills needed to become independent, proactive, and productive members of their community.

**5. E4Texas Educate. Empower. Employ. Excel: The University of Texas at Austin, Austin, Texas**

E4Texas is a postsecondary opportunity for individuals with or without a disability who are older than age 18, who have a high school diploma, and who are employment focused. The E4Texas three-semester experience combines classroom instruction with practical career-building experiences, independent living skills, and self-determination. During the course, students will learn the main aspects of independent living, will receive their caretaker certification, and will be supported as they find jobs in their final semester.

**6. Project HIGHER: El Paso Community College District, El Paso, Texas**

Project HIGHER assists individuals with IDD (ages 18–25) to complete a level-one certificate and find employment in their area of study. Project HIGHER is a unique supported educational model based on supported employment models, which include collaboration among the El Paso Community College District (EPCC), Texas Workforce Solutions–Vocational Rehabilitation Services, CSD, Master of Rehabilitation Counseling Program at the University of Texas at El Paso, Volar Center for Independent Living, Education Service Center—Region 19, and other community partners to help participants succeed in postsecondary education and, ultimately, achieve employment. The program uses an educational coach who works one-on-one with the student in and out of the classroom and gradually reduces the time spent with the student as he or she becomes better adjusted and more independent.

**7. lifePATH® Montgomery: Lone Star College Montgomery, Conroe, Texas**

lifePATH®, a four-year comprehensive model of postsecondary educational opportunities for students who have disabilities that affect executive functioning, focuses on academic readiness, social expectations, and career exploration. Students are selected as part of a cohort the first two years and take classes together on the foundation path. After two years, students can exit the cohort and pursue other certificate or degree programs offered at Lone Star College with wraparound supports by choosing the academic path. Students who remain in the cohort will spend the last two years earning the Business Operations Certificate.

**8. lifePATH® Tomball: Lone Star College–Tomball, Tomball, Texas**

lifePATH® Tomball is a two- to four-year comprehensive model of postsecondary educational opportunities for students with disabilities that affect executive functioning. Students are selected as part of a cohort, and each cohort remains together for all classes during the first two years. Students earn various Lone Star

College certificates in Occupational Studies, complete ACT® WorkKeys® Assessments, and receive the ACT® National Career Readiness Certification. Students can choose to earn college credit in general Lone Star College credit courses. After two years, students can exit lifePATH®, receiving a Lone Star College Certificate in Foundational Occupational Studies. Students who stay for the four-year program continue to take lifePATH® classes as a cohort.

#### **9. The Elevate Program: Navarro College, Corsicana, Texas**

The Elevate Program serves students with cognitive and learning disabilities, ages 18–21 and who are enrolled in local K–12 schools. Students spend half a day attending classes at Navarro College and half a day on a jobsite (all or part of a week). During their time on campus at Navarro College, students take courses that focus on improving work-related reading and communication skills; learn basic computer skills; and develop employment and job search skills. A Continuing Education Certificate of Completion for Marketable Skills is awarded.

#### **10. Postsecondary Access and Training in Human Services: Texas A&M University, College Station, Texas**

The Postsecondary Access and Training in Human Services (PATHS) program is a three-semester certificate program offered at the Center on Disability and Development at Texas A&M University. The program prepares graduates for careers supporting individuals with disabilities, older adults, teachers, and children to live in their communities. Students work toward certificates such as Direct Support Paraprofessionals, Direct Support Professional General, and Child Care Professional.

#### **11. STRIVE: Alvin Community College, Alvin, Texas**

STRIVE is a two-year college program for adults with IDD providing vocational training with the end goal of the student obtaining a job. STRIVE is not an accredited college degree program, although students receive certificates of completion and can also attend Alvin Community College graduation ceremonies.

#### **12. Tarrant County College District, Fort Worth, Texas**

Tarrant County College District offers six programs for individuals with IDD.

- A Step Above & A Step Beyond is a transitional program for students with intellectual and developmental disabilities.
- STEPS Skills, Training & Enrichment for Promoting Courses is a program for individuals with IDD to enhance academic, employability, social, and self-sufficiency skills for meeting life's goals.

- Autism Spectrum Disorder Program is designed to assist autism students with navigating college. It also focuses on self-sufficiency and study skills.
- The First Choice Program on Southeast Campus provides the tools that individuals with disabilities need to confront the challenges of transitioning from dependency to independent living. Additionally, the program provides specialized training and education to enhance employment without taking standard college courses.
- STAR (Student Trained and Ready) provides life and work skills training to postsecondary students with mild to moderate disabilities by concentrated instruction in skills needed to for success in life. Most skills are taught or reinforced in community settings.
- College Exploration creates a forum where individuals with disabilities meet with hiring managers, employment specialists, educators, and social services specialists to gain information about job opportunities and related resources for individuals with disabilities; learn techniques to help in the job search process and discover current communication techniques and suggested ways to disclose disabilities; and learn ways to help promote themselves during the job search.

### **13. UT Informal Classes: The University of Texas at Austin, Austin, Texas**

The University of Texas (UT) offers continuing education classes that are designed for students with IDD. Time in each class includes meeting with other UT students. Students may also be supported to participate in more than 100 additional continuing education courses. Program length varies base on each individual's needs.

### **14. VAST Academy: Houston Community College, Houston, Texas**

The VAST Academy provides postsecondary transition programs and comprehensive support services that lead to credentials, employment, and independence for individuals with IDD on three campuses of Houston Community College. Opportunities include vocational certificates, pre-college and freshman success "bridge" courses, career readiness credentials, internships, and employment assistance. There is access to special housing options off campus through a partnering community-based organization for students with ID.

### **15. Where the Learning Continues: West Texas A&M University, Canyon, Texas**

Where the Learning Continues is an eight-semester program for young adults with ID provided by the West Texas A&M Canyon and Amarillo campuses during the fall and spring semesters. After completion, students earn a certificate of completion

and participate in West Texas A&M University commencement ceremonies. This program does not offer academic credit.

Appendix E.112 Top Occupations for which a High School Diploma or Equivalent and Short-term or Moderate Job Training would be Required

1	Occ Cod	Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Change 2016-2026	Annual Exits from Workforce	Annual Transfers from Occupation	Annual Change in Employment (Growth)	Total Annual Openings	Typical Education Needed for Entry into Occupation	Work Experience in a Related Occupation	Typical on-the-job Training	2018 Mean Hourly Wage	2018 Me Annual Wage
2	39-9021	Personal Care Aides	205,219	282,766	77,547	37.8%	19,473	14,669	7,755	41,897	High school diploma or equivalent	None	Short-term on-the-job training	\$9.60	\$19,960.
3	43-4051	Customer Service Representatives	251,965	287,813	35,848	14.2%	13,797	20,247	3,585	37,629	High school diploma or equivalent	None	Short-term on-the-job training	\$16.24	\$33,772.
4	31-1011	Home Health Aides	72,258	103,141	30,883	42.7%	5,328	4,432	3,088	12,848	High school diploma or equivalent	None	Short-term on-the-job training	\$10.53	\$21,908.
5	43-6013	Medical Secretaries	98,011	126,878	28,867	29.5%	6,057	5,892	2,887	14,836	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.42	\$34,150.
6	43-5081	Stock Clerks and Order Fillers	163,073	189,131	26,058	16.0%	9,615	12,546	2,606	24,767	High school diploma or equivalent	None	Short-term on-the-job training	\$13.76	\$28,611.
7	43-9061	Office Clerks, General	369,945	394,613	24,668	6.7%	22,432	21,859	2,467	46,758	High school diploma or equivalent	None	Short-term on-the-job training	\$17.41	\$36,214.
8	49-9071	Maintenance and Repair Workers, General	113,445	133,575	20,130	17.7%	5,032	6,868	2,013	13,913	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.25	\$37,970.
9	41-3099	Sales Representatives, Services, All Other	107,621	127,378	19,757	18.4%	3,716	10,143	1,976	15,835	High school diploma or equivalent	None	Moderate-term on-the-job training	\$29.36	\$61,061.
10	41-4012	Sales Rep., Wholesale & Manufacturing, Except Tech. & Scientific Product	115,285	133,438	18,153	15.7%	4,104	8,330	1,815	14,249	High school diploma or equivalent	None	Moderate-term on-the-job training	\$33.65	\$69,992.
11	39-9011	Childcare Workers	113,329	131,457	18,128	16.0%	9,991	7,580	1,813	19,384	High school diploma or equivalent	None	Short-term on-the-job training	\$10.65	\$22,146.
12	33-9032	Security Guards	86,055	99,482	13,427	15.6%	5,501	6,544	1,343	13,388	High school diploma or equivalent	None	Short-term on-the-job training	\$14.46	\$30,085.
13	53-3033	Light Truck or Delivery Services Drivers	70,573	82,656	12,083	17.1%	3,248	4,813	1,208	9,269	High school diploma or equivalent	None	Short-term on-the-job training	\$18.07	\$37,588.
14	51-9198	Helpers--Production Workers	42,383	53,009	10,626	25.1%	2,557	4,542	1,063	8,162	High school diploma or equivalent	None	Short-term on-the-job training	\$13.82	\$28,748.
15	33-3051	Police and Sheriff's Patrol Officers	63,666	74,116	10,450	16.4%	1,664	2,684	1,045	5,393	High school diploma or equivalent	None	Moderate-term on-the-job training	\$29.74	\$61,866.
16	51-4121	Welders, Cutters, Solderers, and Brazers	54,410	64,155	9,745	17.9%	1,579	4,630	974	7,183	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.18	\$46,140.
17	43-3021	Billing and Posting Clerks	41,798	50,760	8,962	21.4%	1,979	2,548	896	5,423	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.08	\$37,616.
18	47-2073	Operating Engineers and Other Construction Equipment Operators	36,831	44,453	7,622	20.7%	1,552	2,850	762	5,164	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.06	\$41,731.
19	29-2052	Pharmacy Technicians	32,899	39,903	7,004	21.3%	1,182	1,613	700	3,495	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.48	\$34,285.
20	43-4171	Receptionists and Information Clerks	56,722	63,351	6,629	11.7%	3,733	3,985	663	8,381	High school diploma or equivalent	None	Short-term on-the-job training	\$13.17	\$27,396.
21	43-5071	Shipping, Receiving, and Traffic Clerks	62,981	69,379	6,398	10.2%	2,584	3,941	640	7,165	High school diploma or equivalent	None	Short-term on-the-job training	\$15.74	\$32,745.
22	43-9041	Insurance Claims and Policy Processing Clerks	35,043	41,356	6,313	18.0%	1,632	2,145	631	4,408	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.21	\$39,949.
23	41-9022	Real Estate Sales Agents	36,446	42,659	6,213	17.0%	2,025	1,542	621	4,188	High school diploma or equivalent	None	Moderate-term on-the-job training	\$33.90	\$70,515.
24	41-3021	Insurance Sales Agents	39,088	44,970	5,882	15.0%	1,708	2,261	588	4,557	High school diploma or equivalent	None	Moderate-term on-the-job training	\$30.17	\$62,759.
25	39-2021	Nonfarm Animal Caretakers	17,842	23,237	5,395	30.2%	1,403	1,656	540	3,599	High school diploma or equivalent	None	Short-term on-the-job training	\$11.26	\$23,419.
26	43-4131	Loan Interviewers and Clerks	26,761	32,126	5,365	20.0%	1,058	1,701	536	3,295	High school diploma or equivalent	None	Short-term on-the-job training	\$21.25	\$44,192.
27	53-3031	Driver/Sales Workers	51,797	56,718	4,921	9.5%	2,300	3,408	492	6,200	High school diploma or equivalent	None	Short-term on-the-job training	\$13.83	\$28,777.
28	43-5061	Production, Planning, and Expediting Clerks	32,116	37,005	4,889	15.2%	1,200	2,243	489	3,932	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.71	\$49,307.
29	39-9032	Recreation Workers	23,546	27,773	4,227	18.0%	1,679	2,566	423	4,668	High school diploma or equivalent	None	Short-term on-the-job training	\$12.09	\$25,152.
30	43-4081	Hotel, Motel, and Resort Desk Clerks	20,743	24,770	4,027	19.4%	1,258	2,250	403	3,911	High school diploma or equivalent	None	Short-term on-the-job training	\$10.85	\$22,572.
31	53-3022	Bus Drivers, School or Special Client	34,850	38,851	4,001	11.5%	2,891	1,505	400	4,796	High school diploma or equivalent	None	Short-term on-the-job training	\$13.73	\$28,551.
32	43-3071	Tellers	48,928	52,646	3,718	7.6%	2,602	3,263	372	6,237	High school diploma or equivalent	None	Short-term on-the-job training	\$13.80	\$28,711.
33	21-1093	Social and Human Service Assistants	20,083	23,793	3,710	18.5%	980	1,569	371	2,920	High school diploma or equivalent	None	Short-term on-the-job training	\$17.31	\$36,000.
34	51-2022	Electrical and Electronic Equipment Assemblers	15,425	19,093	3,668	23.8%	875	1,128	367	2,370	High school diploma or equivalent	None	Moderate-term on-the-job training	-	-
35	49-9098	Helpers--Installation, Maintenance, and Repair Workers	16,565	19,934	3,369	20.3%	875	1,380	337	2,592	High school diploma or equivalent	None	Short-term on-the-job training	\$15.00	\$31,191.
36	39-9031	Fitness Trainers and Aerobics Instructors	16,964	19,760	2,796	16.5%	1,202	1,837	280	3,319	High school diploma or equivalent	None	Short-term on-the-job training	\$18.58	\$38,648.
37	51-9111	Packaging and Filling Machine Operators & Tenders	21,834	24,544	2,710	12.4%	1,096	1,540	271	2,907	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.70	\$30,569.
38	53-2031	Flight Attendants	15,420	17,965	2,545	16.5%	826	945	254	2,025	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	-	\$58,815.
39	43-5032	Dispatchers, Except Police, Fire, and Ambulance	19,793	22,233	2,440	12.3%	742	1,132	244	2,118	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.92	\$41,439.
40	49-3093	Tire Repairers and Changers	12,106	14,414	2,308	19.1%	491	1,138	231	1,860	High school diploma or equivalent	None	Short-term on-the-job training	\$14.05	\$29,229.

41	Occ Code	Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Change 2016-2026	Annual Exits from Workforce	Annual Transfers from Occupation	Annual Change in Employment (Growth)	Total Annual Openings	Typical Education Needed for Entry into Occupation	Work Experience in a Related Occupation	Typical on-the-job Training	2018 Mean Hourly Wage	2018 Mean Annual Wage
42	53-3021	Bus Drivers, Transit and Intercity	12,931	15,190	2,259	17.5%	1,103	574	226	1,903	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.75	\$39,004.00
43	27-1026	Merchandise Displayers and Window Trimmers	15,322	17,571	2,249	14.7%	581	924	225	1,730	High school diploma or equivalent	None	Short-term on-the-job training	\$13.82	\$28,737.00
44	49-9099	Installation, Maintenance & Repair Workers, Other	12,816	15,058	2,242	17.5%	512	800	224	1,536	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.87	\$41,320.00
45	43-5011	Cargo and Freight Agents	11,590	13,807	2,217	19.1%	395	631	222	1,248	High school diploma or equivalent	None	Short-term on-the-job training	\$22.06	\$45,892.00
46	51-2099	Assemblers and Fabricators, All Other	11,430	13,608	2,178	19.1%	535	907	218	1,660	High school diploma or equivalent	None	Moderate-term on-the-job training	-	-
47	47-3015	Helpers--Pipefitters, Plumbers, Pipefitters, and Steamfitters	8,992	11,099	2,107	23.4%	424	970	211	1,605	High school diploma or equivalent	None	Short-term on-the-job training	\$15.76	\$32,775.00
48	43-5052	Postal Service Mail Carriers	23,229	25,153	1,924	8.3%	934	682	192	1,808	High school diploma or equivalent	None	Short-term on-the-job training	\$24.82	\$51,621.00
49	33-9099	Protective Service Workers, All Other	8,703	10,602	1,899	21.8%	1,337	1,018	190	2,545	High school diploma or equivalent	None	Short-term on-the-job training	\$13.01	\$27,067.00
50	43-4199	Information and Record Clerks, All Other	13,319	15,214	1,895	14.2%	693	893	190	1,776	High school diploma or equivalent	None	Short-term on-the-job training	\$17.78	\$36,991.00
51	17-3031	Surveying and Mapping Technicians	8,213	10,059	1,846	22.5%	302	649	185	1,136	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.55	\$42,737.00
52	13-2082	Tax Preparers	8,904	10,716	1,812	20.4%	531	485	181	1,197	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.92	\$49,745.00
53	49-2098	Security and Fire Alarm Systems Installers	7,932	9,738	1,806	22.8%	288	662	181	1,131	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.37	\$46,520.00
54	51-2041	Structural Metal Fabricators and Fitters	8,547	10,339	1,792	21.0%	326	690	179	1,195	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.01	\$41,618.00
55	33-3021	Detectives and Criminal Investigators	17,856	19,575	1,719	9.6%	499	654	172	1,325	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$38.44	\$79,949.00
56	43-4031	Court, Municipal, and License Clerks	10,316	12,020	1,704	16.5%	500	438	170	1,108	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.07	\$37,589.00
57	43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	14,978	16,636	1,658	11.1%	681	944	166	1,791	High school diploma or equivalent	None	Short-term on-the-job training	\$22.95	\$47,730.00
58	43-4061	Eligibility Interviewers, Government Programs	12,719	14,338	1,619	12.7%	538	636	162	1,336	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.83	\$41,237.00
59	31-1013	Psychiatric Aides	14,068	15,673	1,605	11.4%	903	752	160	1,815	High school diploma or equivalent	None	Short-term on-the-job training	\$13.39	\$27,845.00
60	51-2023	Electromechanical Equipment Assemblers	7,815	9,389	1,574	20.1%	436	562	157	1,155	High school diploma or equivalent	None	Moderate-term on-the-job training	-	-
61	51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	10,583	12,156	1,573	14.9%	314	797	157	1,268	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.98	\$41,556.00
62	53-7021	Crane and Tower Operators	8,066	9,627	1,561	19.4%	292	620	156	1,068	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$26.68	\$55,486.00
63	47-4011	Construction and Building Inspectors	7,991	9,546	1,555	19.5%	432	496	156	1,084	High school diploma or equivalent	5 years or more	Moderate-term on-the-job training	\$28.78	\$59,870.00
64	31-2022	Physical Therapist Aides	5,784	7,307	1,523	26.3%	287	482	152	921	High school diploma or equivalent	None	Short-term on-the-job training	\$12.89	\$26,809.00
65	51-7011	Cabinetmakers and Bench Carpenters	10,540	12,044	1,504	14.3%	527	626	150	1,303	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.31	\$31,851.00
66	47-3013	Helpers--Electricians	8,150	9,650	1,500	18.4%	376	859	150	1,385	High school diploma or equivalent	None	Short-term on-the-job training	\$15.76	\$32,790.00
67	53-7032	Excavating and Loading Machine and Dragline Operators	7,715	9,211	1,496	19.4%	310	606	150	1,066	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$18.99	\$39,496.00
68	43-5021	Couriers and Messengers	7,503	8,904	1,401	18.7%	377	357	140	874	High school diploma or equivalent	None	Short-term on-the-job training	\$13.17	\$27,391.00
69	49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	8,642	10,015	1,373	15.9%	230	463	137	830	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.46	\$42,564.00
70	39-9041	Residential Advisors	8,444	9,755	1,311	15.5%	604	902	131	1,637	High school diploma or equivalent	None	Short-term on-the-job training	\$12.66	\$26,336.00
71	43-5031	Police, Fire, and Ambulance Dispatchers	7,645	8,943	1,298	17.0%	293	447	130	870	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.62	\$38,735.00
72	47-4051	Highway Maintenance Workers	6,693	7,977	1,284	19.2%	310	421	128	859	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.13	\$37,700.00
73	31-9096	Veterinary Assistants & Lab. Animal Caretakers	5,107	6,381	1,274	24.9%	331	537	127	995	High school diploma or equivalent	None	Short-term on-the-job training	\$12.70	\$26,408.00
74	43-4151	Order Clerks	21,248	22,450	1,202	5.7%	1,014	1,429	120	2,563	High school diploma or equivalent	None	Short-term on-the-job training	\$17.46	\$36,321.00
75	47-2071	Paving, Surfacing, and Tamping Equipment Operators	5,005	6,202	1,197	23.9%	185	382	120	687	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.64	\$38,771.00
76	43-4111	Interviewers, Except Eligibility and Loan	11,069	12,186	1,117	10.1%	621	727	112	1,460	High school diploma or equivalent	None	Short-term on-the-job training	\$15.51	\$32,266.00
77	51-3092	Food Batchmakers	8,667	9,780	1,113	12.8%	507	771	111	1,389	High school diploma or equivalent	None	Moderate-term on-the-job training	\$13.95	\$29,012.00
78	51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	9,131	10,242	1,111	12.2%	349	726	111	1,186	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.95	\$35,255.00
79	43-9199	Office & Administrative Support Workers, All Other	8,423	9,523	1,100	13.1%	390	570	110	1,070	High school diploma or equivalent	None	Short-term on-the-job training	\$18.54	\$38,561.00
80	23-2093	Title Examiners, Abstractors, and Searchers	10,566	11,663	1,097	10.4%	392	509	110	1,011	High school diploma or equivalent	None	Moderate-term on-the-job training	\$27.86	\$57,943.00
81	51-9121	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	8,642	9,732	1,090	12.6%	262	687	109	1,058	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.21	\$39,967.00

			Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016- 2026	Percent Change 2016- 2026	Annual Exits from Workforce	Annual Transfers from Occupation	Annual Change in Employment (Growth)	Total Annual Openings	Typical Education Needed for Entry into Occupation	Work Experience in a Related Occupation	Typical on-the-job Training	2018 Mean Hourly Wage	2018 Mean Annual Wage
32	47-5081	Helpers--Extraction Workers	6,033	7,059	1,026	17.0%	194	602	103	899	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.27	\$35,913.00
34	43-3011	Bill and Account Collectors	29,029	30,045	1,016	3.5%	1,110	1,938	102	3,150	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.59	\$36,592.00
35	37-3013	Tree Trimmers and Pruners	5,503	6,496	993	18.0%	280	428	99	807	High school diploma or equivalent	None	Short-term on-the-job training	\$15.69	\$32,626.00
36	51-9199	Production Workers, All Other	6,497	7,486	989	15.2%	275	511	99	885	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.98	\$33,238.00
37	43-4121	Library Assistants, Clerical	5,835	6,817	982	16.8%	503	382	98	983	High school diploma or equivalent	None	Short-term on-the-job training	\$13.17	\$27,394.00
38	51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	8,589	9,472	883	10.3%	335	625	88	1,048	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.21	\$33,723.00
39	47-4041	Hazardous Materials Removal Workers	4,255	5,137	882	20.7%	187	368	88	643	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.04	\$39,607.00
40	43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	7,425	8,299	874	11.8%	312	450	87	849	High school diploma or equivalent	None	Short-term on-the-job training	\$15.82	\$32,910.00
41	51-9061	Inspectors, Testers, Sorters, Samplers & Weighers	49,403	50,260	857	1.7%	2,072	3,815	86	5,973	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.43	\$42,501.00
42	43-6014	Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	186,752	187,584	832	0.4%	10,083	9,808	83	19,974	High school diploma or equivalent	None	Short-term on-the-job training	\$17.09	\$35,550.00
43	53-2012	Commercial Pilots	5,271	6,087	816	15.5%	158	363	82	603	High school diploma or equivalent	None	Moderate-term on-the-job training	-	\$104,680.00
44	51-9011	Chemical Equipment Operators and Tenders	14,730	15,515	785	5.3%	415	1,186	78	1,679	High school diploma or equivalent	None	Moderate-term on-the-job training	\$28.58	\$59,447.00
45	21-1094	Community Health Workers	3,901	4,681	780	20.0%	194	318	78	590	High school diploma or equivalent	None	Short-term on-the-job training	\$20.02	\$41,637.00
46	51-9122	Painters, Transportation Equipment	5,268	6,045	777	14.7%	161	423	78	662	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.39	\$44,493.00
47	49-9096	Riggers	3,945	4,683	738	18.7%	133	288	74	495	High school diploma or equivalent	None	Moderate-term on-the-job training	\$24.03	\$49,985.00
48	31-1015	Orderlies	3,955	4,643	688	17.4%	261	217	69	547	High school diploma or equivalent	None	Short-term on-the-job training	\$11.83	\$24,616.00
49	31-9093	Medical Equipment Preparers	3,220	3,875	655	20.3%	222	211	66	499	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.31	\$33,918.00
50	51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	10,352	11,006	654	6.3%	247	802	65	1,114	High school diploma or equivalent	None	Moderate-term on-the-job training	\$34.91	\$72,616.00
51	51-9041	Extruding, Forming, Pressing & Compacting Machine Setters, Oper. & Tenders	5,673	6,326	653	11.5%	232	482	65	779	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.14	\$31,500.00
52	53-4011	Locomotive Engineers	5,462	6,098	636	11.6%	139	324	64	527	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$31.57	\$65,657.00
53	39-6012	Concierges	2,638	3,244	606	23.0%	140	258	61	459	High school diploma or equivalent	None	Moderate-term on-the-job training	\$13.90	\$28,909.00
54	29-9012	Occupational Health and Safety Technicians	3,299	3,889	590	17.9%	80	98	59	237	High school diploma or equivalent	None	Moderate-term on-the-job training	\$25.65	\$53,349.00
55	33-9021	Private Detectives and Investigators	3,339	3,927	588	17.6%	183	158	59	400	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$23.68	\$49,253.00
56	43-4011	Brokerage Clerks	4,495	5,077	582	12.9%	120	364	58	542	High school diploma or equivalent	None	Moderate-term on-the-job training	\$25.03	\$52,057.00
57	47-4061	Rail-Track Laying & Maintenance Equipment Operator	1,771	2,327	556	31.4%	65	130	56	251	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.36	\$48,589.00
58	53-7072	Pump Operators, Except Wellhead Pumps	3,564	4,109	545	15.3%	138	318	54	510	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.27	\$44,232.00
59	51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	3,816	4,357	541	14.2%	157	284	54	495	High school diploma or equivalent	None	Moderate-term on-the-job training	\$12.88	\$26,791.00
60	53-6051	Transportation Inspectors	3,734	4,271	537	14.4%	141	237	54	432	High school diploma or equivalent	None	Moderate-term on-the-job training	\$40.50	\$84,248.00
61	51-9083	Ophthalmic Laboratory Technicians	2,648	3,178	530	20.0%	126	194	53	373	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.93	\$31,050.00
62	53-7073	Wellhead Pumps	3,873	4,385	512	13.2%	148	342	51	541	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$26.29	\$54,688.00
63	53-4031	Railroad Conductors and Yardmasters	4,661	5,168	507	10.9%	118	328	51	497	High school diploma or equivalent	None	Moderate-term on-the-job training	\$33.44	\$69,555.00
64	47-4099	Construction and Related Workers, All Other	2,573	3,075	502	19.5%	112	182	50	344	High school diploma or equivalent	None	Moderate-term on-the-job training	-	-

Appendix F. Eighty Top Occupations in High-Demand Industries for Which an Associate's Degree, Postsecondary Nondegree Award, Some College but No Degree Would be Required

Occ Code	Occupational Title	Average Employment 2016	Average Employment 2026	Number Change 2016-2026	Percent Change 2016-2026	Annual Exits from Workforce	Transfers from Occupation	Annual Change in Employment (Growth)	Total Annual Openings	Typical Education Needed for Entry into Occupation	Experience in a Related Occupation	Typical on-the-job Training	Mean Hourly Wage	2018 Mean Annual Wage
53-3032	Heavy and Tractor-Trailer Truck Drivers	185,215	217,493	32,278	17.4%	8,537	12,649	3,228	24,414	Postsecondary nondegree award	None	Short-term on-the-job training	\$21.76	\$45,254.00
31-9092	Medical Assistants	58,571	79,526	20,955	35.8%	3,031	4,240	2,096	9,367	Postsecondary nondegree award	None	None	\$15.18	\$31,579.00
31-1014	Nursing Assistants	89,846	107,555	17,709	19.7%	5,996	4,988	1,771	12,755	Postsecondary nondegree award	None	None	\$12.99	\$27,026.00
25-9041	Teacher Assistants	85,106	102,025	16,919	19.9%	5,136	4,268	1,692	11,096	Some college, no degree	None	None	-	\$23,286.00
29-2061	Licensed Practical and Licensed Vocational Nurses	71,428	85,033	13,605	19.0%	2,758	2,718	1,360	6,836	Postsecondary nondegree award	None	None	\$22.59	\$46,992.00
47-2111	Electricians	61,475	72,113	10,638	17.3%	2,326	4,964	1,064	8,354	High school diploma or equivalent	None	Apprenticeship	\$24.51	\$50,977.00
47-2152	Plumbers, Pipefitters, and Steamfitters	45,354	55,727	10,373	22.9%	1,833	3,381	1,037	6,251	High school diploma or equivalent	None	Apprenticeship	\$23.65	\$49,182.00
15-1151	Computer User Support Specialists	56,367	66,644	10,277	18.2%	1,250	3,166	1,028	5,444	Some college, no degree	None	None	\$25.12	\$52,253.00
47-2031	Carpenters	54,205	63,770	9,565	17.6%	2,028	3,278	956	6,262	High school diploma or equivalent	None	Apprenticeship	\$19.41	\$40,367.00
43-3031	Bookkeeping, Accounting, and Auditing Clerks	131,299	140,549	9,250	7.0%	8,416	6,531	925	15,872	Some college, no degree	None	Moderate-term on-the-job training	\$19.90	\$41,392.00
49-3023	Automotive Service Technicians and Mechanics	54,144	61,823	7,679	14.2%	1,828	3,500	768	6,096	Postsecondary nondegree award	None	Short-term on-the-job training	\$21.28	\$44,255.00
39-5012	Hairdressers, Hairstylists, and Cosmetologists	39,998	47,477	7,479	18.7%	2,919	2,183	748	5,850	Postsecondary nondegree award	None	None	\$12.27	\$25,524.00
31-9091	Dental Assistants	28,418	34,673	6,255	22.0%	1,610	1,806	626	4,042	Postsecondary nondegree award	None	None	\$17.70	\$36,821.00
25-2011	Preschool Teachers, Except Special Education	32,667	38,909	6,242	19.1%	1,541	1,911	624	4,076	Associate's degree	None	None	\$16.81	\$34,960.00
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	26,371	32,562	6,191	23.5%	814	1,976	619	3,409	Postsecondary nondegree award	None	Long-term on-the-job training	\$22.15	\$46,070.00
49-3031	Bus & Truck Mechanics & Diesel Engine Specialists	27,895	33,484	5,589	20.0%	942	1,751	559	3,252	High school diploma or equivalent	None	Long-term on-the-job training	\$23.29	\$48,451.00
49-9041	Industrial Machinery Mechanics	30,067	35,493	5,426	18.0%	1,107	1,695	543	3,345	High school diploma or equivalent	None	Long-term on-the-job training	\$26.75	\$55,638.00
23-2011	Paralegals and Legal Assistants	22,460	27,445	4,985	22.2%	824	1,660	498	2,982	Associate's degree	None	None	\$27.05	\$56,267.00
33-2011	Firefighters	28,066	32,932	4,866	17.3%	684	1,292	487	2,463	Postsecondary nondegree award	None	Long-term on-the-job training	\$25.25	\$52,523.00
51-4041	Machinists	25,557	29,962	4,405	17.2%	964	1,808	440	3,212	High school diploma or equivalent	None	Long-term on-the-job training	\$22.52	\$46,848.00
29-1126	Respiratory Therapists	11,784	15,943	4,159	35.3%	326	314	416	1,056	Associate's degree	None	None	\$28.81	\$59,931.00
29-2071	Medical Records and Health Information Technicians	17,355	21,111	3,756	21.6%	564	573	376	1,513	Postsecondary nondegree award	None	None	\$20.17	\$41,950.00
29-2041	Emergency Medical Technicians and Paramedics	18,716	22,398	3,682	19.7%	358	845	368	1,571	Postsecondary nondegree award	None	None	\$17.61	\$36,622.00
29-2034	Radiologic Technologists	15,903	19,529	3,626	22.8%	458	442	363	1,263	Associate's degree	None	None	\$28.25	\$58,755.00
31-9011	Massage Therapists	11,356	14,954	3,598	31.7%	860	472	360	1,692	Postsecondary nondegree award	None	None	\$23.61	\$49,104.00
31-9097	Phlebotomists	9,234	12,087	2,853	30.9%	460	615	285	1,360	Postsecondary nondegree award	None	None	\$15.87	\$33,000.00
29-2021	Dental Hygienists	12,529	15,262	2,733	21.8%	502	312	273	1,087	Associate's degree	None	None	\$36.20	\$75,297.00
29-2099	Health Technologists and Technicians, All Other	9,076	11,635	2,559	28.2%	287	342	256	885	Postsecondary nondegree award	None	None	\$21.15	\$43,988.00
31-2021	Physical Therapist Assistants	6,845	9,395	2,550	37.3%	356	598	255	1,209	Associate's degree	None	None	\$33.60	\$69,894.00
15-1152	Computer Network Support Specialists	17,649	20,178	2,529	14.3%	384	974	253	1,611	Associate's degree	None	None	\$35.31	\$73,441.00
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	13,474	15,956	2,482	18.4%	458	927	248	1,633	High school diploma or equivalent	None	Long-term on-the-job training	\$23.85	\$49,617.00
29-2012	Medical and Clinical Laboratory Technicians	11,894	14,323	2,429	20.4%	397	396	243	1,036	Associate's degree	None	None	-	-
29-2056	Veterinary Technologists and Technicians	9,285	11,649	2,364	25.5%	340	464	236	1,040	Associate's degree	None	None	\$14.91	\$31,011.00
17-3011	Architectural and Civil Drafters	11,457	13,783	2,326	20.3%	372	682	233	1,287	Associate's degree	None	None	\$26.98	\$56,115.00
49-2011	Computer, Automated Teller, and Office Machine Repairers	14,045	16,356	2,311	16.5%	498	966	231	1,695	Some college, no degree	None	Short-term on-the-job training	\$18.32	\$38,096.00

Occ Code	Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Change 2016-2026	Annual Exits from Workforce	Annual		Total Annual Openings	Typical Education Needed for Entry into Occupation	Work Experience in a Related Occupation	Typical on-the-job Training	2018	2018
							Transfers from Occupati	Change in Employmen t (Growth)					Mean Hourly Wage	Mean Annual Wage
29-2055	Surgical Technologists	10,870	13,129	2,259	20.8%	390	532	226	1,148	Postsecondary nondegree award	None	None	\$23.75	\$49,410.00
39-5011	Barbers	11,252	13,487	2,235	19.9%	561	551	224	1,336	Postsecondary nondegree award	None	None	\$15.38	\$31,991.00
47-2211	Sheet Metal Workers	11,112	13,204	2,092	18.8%	420	834	209	1,463	High school diploma or equivalent	None	Apprenticeship	\$19.64	\$40,861.00
15-1134	Web Developers	10,128	12,098	1,970	19.5%	208	563	197	968	Associate's degree	None	None	\$35.70	\$74,246.00
49-9051	Electrical Power-Line Installers and Repairers	10,580	12,535	1,955	18.5%	291	606	196	1,093	High school diploma or equivalent	None	Long-term on-the-job training	\$28.04	\$58,320.00
49-3021	Automotive Body and Related Repairers	12,137	14,034	1,897	15.6%	452	780	190	1,422	High school diploma or equivalent	None	Long-term on-the-job training	\$22.07	\$45,913.00
29-2032	Diagnostic Medical Sonographers	5,228	7,039	1,811	34.6%	159	153	181	493	Associate's degree	None	None	\$34.41	\$71,581.00
49-9043	Maintenance Workers, Machinery	10,269	12,071	1,802	17.5%	477	646	180	1,303	High school diploma or equivalent	None	Long-term on-the-job training	\$21.26	\$44,212.00
17-3022	Civil Engineering Technicians	11,924	13,722	1,798	15.1%	410	675	180	1,265	Associate's degree	None	None	\$24.91	\$51,813.00
49-9081	Wind Turbine Service Technicians	1,651	3,446	1,795	108.7%	94	146	180	420	Postsecondary nondegree award	None	Long-term on-the-job training	\$26.61	\$55,338.00
17-3023	Electrical and Electronic Engineering Technicians	15,108	16,803	1,695	11.2%	510	840	170	1,520	Associate's degree	None	None	\$32.63	\$67,866.00
49-3011	Aircraft Mechanics and Service Technicians	16,821	18,407	1,586	9.4%	550	779	159	1,488	Postsecondary nondegree award	None	None	\$30.70	\$63,859.00
19-4099	Life, Physical & Social Science Technicians, Other	7,830	9,409	1,579	20.2%	345	642	158	1,145	Associate's degree	None	None	\$26.10	\$54,293.00
47-2221	Structural Iron and Steel Workers	7,175	8,664	1,489	20.8%	228	596	149	973	High school diploma or equivalent	None	Apprenticeship	\$21.33	\$44,372.00
49-2022	Telecommunications Equipment Installers & Repairers, Exc. Line Insta	24,985	26,383	1,398	5.6%	852	1,815	140	2,807	Postsecondary nondegree award	None	Moderate-term on-the-job tra	\$24.69	\$51,356.00
31-2011	Occupational Therapy Assistants	3,762	5,120	1,358	36.1%	223	318	136	677	Associate's degree	None	None	\$35.89	\$74,647.00
29-2081	Opticians, Dispensing	6,701	7,924	1,223	18.3%	243	270	122	635	High school diploma or equivalent	None	Long-term on-the-job training	\$16.68	\$34,688.00
39-5094	Skincare Specialists	6,133	7,347	1,214	19.8%	405	343	121	869	Postsecondary nondegree award	None	None	\$13.75	\$28,596.00
27-4011	Audio and Video Equipment Technicians	5,781	6,933	1,152	19.9%	179	392	115	686	Postsecondary nondegree award	None	Short-term on-the-job training	\$20.04	\$41,684.00
49-9052	Telecommunications Line Installers and Repairers	10,616	11,751	1,135	10.7%	273	828	114	1,215	High school diploma or equivalent	None	Long-term on-the-job training	\$25.10	\$52,216.00
29-2031	Cardiovascular Technologists and Technicians	5,204	6,293	1,089	20.9%	149	143	109	401	Associate's degree	None	None	\$26.23	\$54,554.00
29-2057	Ophthalmic Medical Technicians	4,237	5,301	1,064	25.1%	155	211	106	472	Postsecondary nondegree award	None	None	\$16.00	\$33,288.00
47-2021	Brickmasons and Blockmasons	5,317	6,355	1,038	19.5%	189	323	104	596	High school diploma or equivalent	None	Apprenticeship	\$22.31	\$46,414.00
47-2121	Glaziers	4,774	5,812	1,038	21.7%	192	404	104	700	High school diploma or equivalent	None	Apprenticeship	\$17.00	\$35,356.00
17-3029	Engineering Technicians, Except Drafters, AD	6,902	7,925	1,023	14.8%	237	390	102	729	Associate's degree	None	None	\$32.03	\$66,628.00
19-4041	Geological and Petroleum Technicians	5,892	6,914	1,022	17.3%	177	461	102	740	Associate's degree	None	Moderate-term on-the-job tra	\$32.10	\$66,760.00
17-3013	Mechanical Drafters	4,748	5,642	894	18.8%	153	280	89	522	Associate's degree	None	None	\$29.70	\$61,774.00
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equip	6,512	7,386	874	13.4%	173	423	87	683	Postsecondary nondegree award	None	Long-term on-the-job training	\$27.64	\$57,498.00

Occ Code	Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Change 2016-2026	Annual Exits from Workforce	Annual Transfers from Occupation	Annual Change in Employment (Growth)	Total Annual Openings	Typical Education Needed for Entry into Occupation	Work Experience in a Related Occupation	Typical on-the-job Training	2018	2018
													Hourly Wage	Mean Annual Wage
17-3027	Mechanical Engineering Technicians	4,861	5,709	848	17.4%	169	278	85	532	Associate's degree	None	None	\$32.57	\$67,737.00
47-2171	Reinforcing Iron and Rebar Workers	4,054	4,868	814	20.1%	113	340	81	534	High school diploma or equivalent	None	Apprenticeship	\$23.73	\$49,364.00
19-4031	Chemical Technicians	6,284	7,075	791	12.6%	221	393	79	633	Associate's degree	None	Moderate-term on-the-job training	\$28.68	\$59,663.00
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	11,615	12,326	711	6.1%	505	803	71	1,379	Associate's degree	None	None	\$19.27	\$40,079.00
19-4091	Environmental Science and Protection Technicians, Including Health	3,588	4,283	695	19.4%	158	293	70	521	Associate's degree	None	None	\$22.29	\$46,370.00
47-2132	Insulation Workers, Mechanical	3,565	4,247	682	19.1%	105	300	68	473	High school diploma or equivalent	None	Apprenticeship	\$19.93	\$41,445.00
13-1031	Claims Adjusters, Examiners, and Investigators	20,446	21,116	670	3.3%	521	1,157	67	1,745	High school diploma or equivalent	None	Long-term on-the-job training	\$33.44	\$69,557.00
29-2035	Magnetic Resonance Imaging Technologists	2,786	3,456	670	24.0%	81	78	67	226	Associate's degree	Less than 5 years	None	\$33.90	\$70,505.00
49-9044	Millwrights	3,165	3,820	655	20.7%	111	198	66	375	High school diploma or equivalent	None	Apprenticeship	\$25.41	\$52,849.00
25-4031	Library Technicians	3,918	4,549	631	16.1%	333	217	63	613	Postsecondary nondegree award	None	None	\$14.82	\$30,823.00
49-9062	Medical Equipment Repairers	3,362	3,993	631	18.8%	141	173	63	377	Associate's degree	None	Moderate-term on-the-job training	\$23.60	\$49,079.00
29-2053	Psychiatric Technicians	3,846	4,471	625	16.3%	135	184	62	381	Postsecondary nondegree award	Less than 5 years	Short-term on-the-job training	\$15.63	\$32,504.00
39-5092	Manicurists and Pedicurists	3,174	3,744	570	18.0%	208	176	57	441	Postsecondary nondegree award	None	None	\$11.63	\$24,186.00
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Die	1,668	2,231	563	33.8%	54	137	56	247	Postsecondary nondegree award	None	Moderate-term on-the-job training	\$28.20	\$58,660.00
49-3041	Farm Equipment Mechanics and Service Technicians	2,574	3,110	536	20.8%	88	179	54	321	High school diploma or equivalent	None	Long-term on-the-job training	\$21.09	\$43,875.00
51-8031	Water and Wastewater Treatment Plant and System Operators	10,320	10,838	518	5.0%	302	563	52	917	High school diploma or equivalent	None	Long-term on-the-job training	\$18.92	\$39,359.00
53-5021	Captains, Mates, and Pilots of Water Vessels	3,090	3,597	507	16.4%	112	223	51	386	Postsecondary nondegree award	Less than 5 years	None	\$49.98	\$103,951.00