Middle-Skill STEM Occupation Index

Texas Workforce Investment Council
November 2021

The Mission of the Texas Workforce Investment Council

Assisting the Governor and the Legislature with strategic planning for and evaluation of the Texas workforce system to promote the development of a well-educated, highly skilled workforce for Texas.

MIDDLE-SKILL STEM OCCUPATION INDEX

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COVID-19

This study was prepared prior to the COVID-19 outbreak and, as such, represents a snapshot in time before the pandemic. The authors are aware that the significant impacts of COVID-19 on the economy, workforce, etc., will not be reflected in this report. The data used to develop this report is regularly available two years behind the current year. Longitudinal analysis is planned for the coming years, and subsequent updates to this report will demonstrate the impacts of COVID-19 on the workforce.

Introduction

The skills gap is widening, and the skills that employers value and rely upon are changing. As occupations become more technical and specialized, employers throughout the U.S. are confronted with a decline in employees' basic skills (Kaiser, 2019) and often struggle to hire workers with the necessary skills and training. Also, in the current economy, technology continues to play a disruptive role (Rosenblum et al., 2014). According to a study by Rothwell (2013), half of all occupations in science, technology, engineering, and math (STEM) involve less than a four-year degree. Occupations with education and training above a high school diploma, but less than a four-year degree, are considered middle-skill occupations (National Science & Technology Council, 2018; West, 2011). Between 2014 to 2024, 50 percent of all job openings will be middle-skill jobs (National Skills Coalition, 2017). In Texas, middle-skill workers account for 56 percent of the labor market. However, only 42 percent of workers in Texas have the required middle-skill level of training.

Middle-skill STEM occupations are prevalent in every large metropolitan area (Rothwell, 2013). Strong STEM-oriented economies experience higher employment rates, job growth, and wages. According to Rothwell (2013), "the presence of sub-bachelor's degree STEM workers helps boost innovation and measures one-fourth to one-half as much as bachelor's degree STEM workers, holding other factors constant." This segment of the workforce is vital. Yet, classification of middle-skill STEM occupations remains a challenge (Chen, 2013). As industries continue to evolve, many occupations once considered non-STEM will require STEM-oriented skills and knowledge (West, 2011; Rosenblum et al., 2014; National Science & Technology Council, 2018). This has resulted in workforce studies on middle-skill STEM occupations with considerable variation (Ebersole, 2013). This report offers a framework for conducting research on middle-skill STEM occupations that minimizes variability.

The Texas Workforce Investment Council (Council) established a definition of middle-skill occupations and STEM occupations in 2015. This was the basis for the Council's first system initiative, which resulted in a 2018 report that identified third-party, industry-based certifications that are of value to Texas employers and that can positively affect employment outcomes in middle-skill STEM occupations. The index of occupations presented in this document is a companion to previous reports. The middle-skill STEM occupation index is unique in that it highlights the demographic, educational, and occupational characteristics of individuals currently in the middle-skill STEM workforce. The Council's 2020 publication, *Demographics of the Unemployed in Texas: A Snapshot Before the Pandemic,* is also a companion publication to this report and outlines important demographic information for the

unemployed population of Texas. The two reports, when viewed together, provide demographic and educational data for the Texas workforce.

The Texas Workforce Investment Council

The Texas Workforce Investment Council was created in 1993 by the 73rd Texas Legislature. As an advisory body to the Governor and the legislature, the Council assists with strategic planning for and evaluation of Texas' workforce system. The Council promotes the development of a well-educated, highly skilled workforce for Texas and advocates for a workforce system that provides quality workforce education and training opportunities. The 19-member Council includes representatives from business, labor, education, community-based organizations, and the Council's five member state agencies.

Statutory Directive

Under Texas Government Code, Section 2308.101, the Council is responsible for promoting the development of a well-educated, highly skilled workforce and advocating for the development of an integrated workforce development system to provide quality services addressing the needs of business and workers in Texas.

The Texas Workforce System Strategic Plan

The development of an integrated strategic plan for the workforce system is one of the Council's primary responsibilities. To sustain and increase economic growth, a well-trained labor supply must be available for employers seeking to establish, conduct, or expand business operations in Texas. The mission articulated in the Texas workforce system strategic plan (FY 2016–FY 2023) is to position Texas as a global economic leader by growing and sustaining a competitive workforce. For this to become reality, all Texans must be part of the critical pool of potential employees.

Scope of the Report

This report presents information about middle-skill STEM occupations in Texas. The first section of the report provides context with a review of literature on middle-skill STEM occupations. This section discusses STEM occupations and the changing American workforce, the role of community colleges in preparing workers for middle-skill employment, and previous Council research on middle-skill occupations in Texas. The second section provides an explanation of the detailed methods used to create the middle-skill STEM occupation index. This section includes an explanation of obtaining demographic data from Standard Occupational Classification system codes. The third section contains the index itself, along with a guide for the report's layout. Included at the end of the report are three appendices detailing the process for identifying middle-skill STEM occupations and guidance for the use of a crosswalk illustrating the steps used to extract demographic data from occupation codes.

Context of the Report

STEM education and training is the subject of much national interest and debate. This debate includes questions on what defines a STEM occupation and on the ability of educators to prepare workers to

meet industry demands (Rosenblum et al., 2014; National Center for Science and Engineering Statistics, 2017). Many studies have focused on the positive economic outcomes for obtaining postsecondary STEM credentials (Backes et al., 2015; Carnevale et al., 2011; Owen et al., 2013; Rothwell, 2013; President's Council of Advisors on Science and Technology, 2012; Van Noy et al., 2010). Despite the focus on labor market outcomes and postsecondary STEM credentials, the research on this relationship has focused on four-year colleges and universities (Lundy-Wagner et al., 2016; Wang, 2014). In recent years, research on strengthening the STEM worker pipeline has shifted toward middle-skill STEM credentials (Olson et al., 2012; Rosenblum et al., 2014; Xu et al., in press; Bahr et al., 2015). However, a major obstacle in understanding this sector of the economy, as stated in Chen (2013) and Ebersole (2013), remains classification of STEM occupations.

A common definition of what constitutes STEM-related occupations does not exist. The National Science Foundation's definition corresponds to occupations requiring a bachelor's degree in science or engineering (2020). Other definitions, such as the one employed by the U.S. Bureau of Labor Statistics and the United States STEM Education Coalition (Kanadli, 2019), classify workers with competencies in STEM using a multidisciplinary, interconnected, and integrative approach. Generally, middle-skill occupations are described in terms of educational or training levels. In the United States, middle-skill occupations have been defined by the U.S. Department of Labor and Department of Commerce as jobs requiring workers with more than a high school diploma but less than a postsecondary degree (Perez & Pritzker, 2013). Teitelbaum (2014) recognizes that STEM fields are, "not occupations as such, as there are multiple fields of science and multiple fields of engineering, and they vary from one another over time and over places." As such, Siekmann et al. (2016) propose that an overarching definition of STEM, "establishes relationships between the four disciplines with the objective of expanding people's abilities by supporting technical and scientific education with a strong emphasis on critical and creative-thinking skills."

According to Holzer (2015), the economic recovery following the Great Recession presents significant challenges. Among them are an increase in the number of part-time workers and the long-term unemployed, and a decline in workforce participation (Hubbard, 2014; Madigan, 2015). A growing skills gap hastens demand for workers to develop necessary skills. Employers are aware of these trends. A survey of employers conducted by the Harvard Business School (2014) found that 46 percent of respondents from middle-sized companies found it difficult to locate workers with the necessary skills. In the same study, 34 percent had difficulty filling middle-skills positions. In a survey of human resources executives conducted by Chanmugam et al. (2014), 56 percent found middle-skill occupations difficult to fill. Additionally, over 70 percent of survey respondents with revenues greater than $2 billion indicated negative performance outcomes due to an inability to attract and keep middle-skill talent.

Studies by Abel et al. (2012), Autor (2010), Fogg et al. (2011), and Jaimovich et al. (2012) suggest that a gradual historical polarization of skills in the labor market is to blame for the lack of emphasis on middle-skill jobs. Researchers have observed that the polarization was driven by employment growth of high-skill, high-wage jobs in the 1980s, followed by a period from 1999 to 2007 that saw a marked increase in the demand for low-education, low-skill jobs (Cortes et al., 2014). During this time, Atherwood et al. (2019), Black et al. (2019), and Sharone et al. (2016) observed an increase in deskilling and mal-

employment.[1] Additionally, many employers have demonstrated a preference for alternative hiring practices, including investing in technology to perform work, outsourcing to vendors, and a preference for hiring part-time over full-time workers (Tüzemen et al., 2013). Reports from Osterman et al. (2011), Weil (2015), and the Committee on STEM Education (National Science & Technology Council, 2018) recommend that investment in skill-building for potential employees must come as a result of partnerships between private and public sector entities and educators.

The middle-skill labor market presents opportunities for efficiency and equity as well-prepared workers can strengthen regional economies and provide support for low-income, minority, and first-generation students (Moore et al., 2010; Hagerdorn et al., 2012; Jenkins et al., 2012; Sheets et al., 2015; Juszkiewicz, 2017; Pierce, 2017). These occupations are considered middle-skill because they require more than a high school diploma and less than a baccalaureate level of skill. According to Rosenblum et al. (2014), middle-skill occupations, "are critically important to America's Innovation Economy and the implementation of new advances that are entrepreneurial, science, and technology rich." They are also a growing source of opportunity for workers leaving high school and those in lower-income and low-skill employment (Belfield et al, 2011; Governor's STEM Advisory Council, 2013; McKinney et al., 2015; Romero, 2016). Middle-skill occupations are associated with a wide range of workforce credentials, from industry-based certifications to apprenticeships to college certificates and associate degrees. Many of these occupations have consistent or growing job opportunities, especially those that require substantial levels of science and math (Holzer et al., 2015).

Consistent and accurate research on middle-skill STEM occupations remains limited. Trends on middle-skill STEM occupations over the last two decades show that jobs have expanded faster in both high-skill and low-skill positions. Despite competing perspectives on the decline of available middle-skill jobs, these occupations represent a larger share of new openings and replacements compared to low and high-skill occupations (Backes et al., 2015; National Skills Coalition, 2014). To help illustrate this issue, Council staff developed a framework for evaluating middle-skill occupations. In 2015, Council staff conducted extensive research to provide a clear definition of middle-skill STEM occupations. This process entailed classifying workers and STEM occupations, followed by identifying and evaluating middle-skill STEM occupations relevant to Texas. Selected occupations were evaluated to understand their importance to the state's economy. These occupations form the basis of the index presented in this report.

Data and Methodology

Occupational information has long been collected as part of the national census. However, a thorough effort to collect more accurate occupational data did not occur until the Standard Occupational Classification (SOC) system was created in the late 1970s. The SOC system was created to replicate the occupational structure of the nation, and as such, does not include every available individual job title.

[1] According to Fogg et al. (2011), mal-employment "is a variant of the problem of underemployment in the labor market. Underemployment represents a job that is substandard in some way. The precise type of underemployment that occurs in the labor market is based upon the standard or referent against which the job is compared."

The SOC system organizes and classifies occupations based on similar job duties, skills, education, and training. Therefore, while the SOC system includes fewer detailed occupation codes compared to the total number of possible jobs, in general, the system identifies the broadest list of occupations for pay or profit in the national economy.

The SOC system serves as a statistical tool for numerous entities across the nation to efficiently analyze, identify, and organize workforce data. For instance, the U.S. Bureau of Labor Statistics (BLS) and the U.S. Census Bureau are charged with gathering and publishing information on national employment figures for SOC occupations. The SOC system organizes and codes jobs into 867 detailed occupations, aggregated into 459 broad occupations. In turn, the SOC system combines these 459 broad occupations into 98 minor groups and 23 major groups. The SOC system has been revised and updated periodically to accurately reflect the economy and workforce system. The 2018 SOC system is the latest revision of SOC since 2010.

Using SOC detailed occupation codes, previous Council research identified STEM-classified occupations from 11 different sources from nine federal, state, and industry organizations. Each source considered a different number of occupations as STEM occupations. Based on the identified STEM occupations, a list of middle-skill STEM occupations was constructed using federal BLS designations regarding typical education and training levels. From the list of occupations identified as STEM, 85 were identified as middle-skill STEM occupations. The final step in this research generated a list of middle-skill STEM occupations important to the Texas economy. In addition to the 85 middle-skill STEM occupations previously identified, 12 middle-skill classified jobs were also identified and incorporated into the list. While these additional occupations were not considered STEM by any of the original sources, they required substantial STEM-related skills and knowledge. Therefore, an initial total of 97 middle-skill STEM occupations were identified for the state of Texas.

The basis for the research in this report was the list of 97 middle-skill STEM occupations identified in the Council's 2015 report, *Defining Middle-Skill STEM Occupations in Texas*. This initial list relied on the 2010 SOC system. However, in 2018, the SOC system underwent significant revisions. According to the U.S. Bureau of Labor Statistics (2018), "multiple codes contained in the 2010 SOC will no longer appear in the 2018 SOC due to structural changes stemming from the merging, breaking out, or collapsing of detailed occupations." Occupational areas with significant revisions and additions included information technology and healthcare. To account for these changes, a crosswalk was developed for this report. The crosswalk outlines the process by which changes from 2010 to 2018 were reconciled and how demographic data was extracted using SOC codes. This crosswalk is presented in detail in Appendix C. The crosswalk details a three-tier translation process in which the 97 middle-skill STEM occupations identified by Council staff were updated under the 2018 SOC system, resulting in 93 total middle-skill STEM occupations, and then translated for use with the 2018 American Community Survey (ACS) Public Use Microdata Sample (PUMS) file Occupation Code List.

In order to maintain respondent anonymity, the Census Bureau does not report occupational data with too few responses. Instead, responses are either reported at the broad SOC level or individual occupations are combined and reported as broader occupation clusters. These occupation clusters

generally combine two or more detailed-level SOC occupations within the same set of broad-level SOC occupations. For example, the PUMS occupation data combines Dietetic Technicians (SOC 29-2051) with Ophthalmic Medical Technicians (SOC 29-2057), which are both included in the broad-level Health Practitioner Support Technologists and Technicians (SOC 29-2050) category. When taking account of these combinations, the original list of 93 middle-skill STEM occupations was condensed into 69 occupations. Not all of the PUMS occupation data are clusters of multiple SOC codes; for example, Dental Assistants (SOC 31-9091) are reported on their own. Both the index and the crosswalk in this report detail which SOC codes are contained within the broad-level SOC occupation or occupation cluster.

The outcomes of interest for this report were demographic, educational, and occupational characteristics for each middle-skill STEM occupation, as defined by the Council. Demographic and educational data came from the ACS public-use microdata series for 2018. The ACS is a demographic, housing, and workforce survey conducted by the U.S. Census Bureau on a national random sample of the U.S. population. Sherone et al. (2019) state that labor market studies often use the U.S. Department of Labor's Current Population Survey (CPS); however, ACS is a larger survey and for this reason is more reliable. According to Webster Jr. (2007) and Kromer et al. (2011), slight differences between ACS and CPS exist in the way samples are defined, workforce questions are worded, and participants selected. Analysis for this report was restricted to noninstitutionalized civilians, between the ages of 16 to 92. ACS sample respondents are weighted to approximate the demographic characteristics of the entire population.

In this report, ACS data supports analyses at the state level. Demographic characteristics include sex, age, and race/ethnicity. The sex variable corresponds to male and female respondents. The age variable consists of four age groups: 16-44, 45-64, 65-84, 85+. The race/ethnicity variable includes five levels: White, Black, Asian, Hispanic, and Other. Levels of educational attainment were operationalized at four levels: less than a high school diploma, high school graduate (includes equivalency), some college or associate’s degree, and bachelor’s degree or higher.

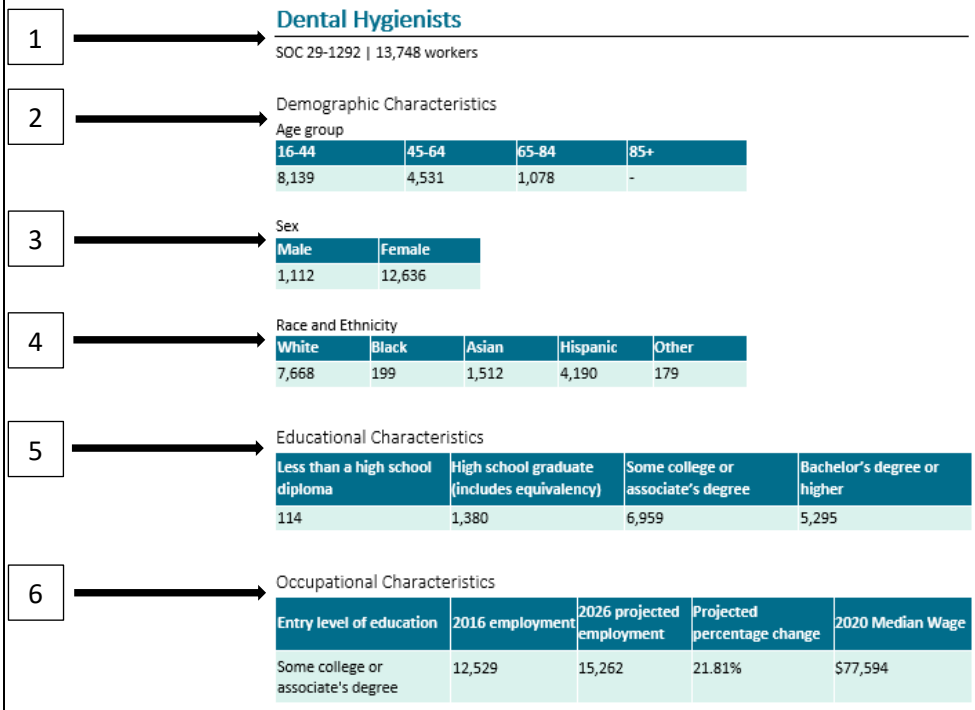
BLS produces occupational employment projections in a product called the National Employment Matrix. BLS presents data on historical and projected employment, employment change, occupational openings, education, training, and wages for each National Employment Matrix occupation. These occupations are based on the structure used by BLS on its Occupational Employment Statistics program, which includes detailed occupations from the SOC system. These data provide a base-year and a projected-year, which is ten years in the future. The occupational employment projections also include labor market information (LMI) on the numerical and percentage change in employment, median annual wages, education, work experience, and training. Texas-specific occupation projections and wage data are hosted by the Texas Workforce Commission (TWC) and available through TexasLMI.com. The data available on TexasLMI is provided by BLS, TWC, and the program areas within the TWC Labor Market and Career Information department. This report includes projections for Texas through 2026 and annual median wage information for 2020. These figures represent the latest available Texas data for these categories. Because the latest projections data for Texas through LMI have a base-year of 2016, they do not reflect changes to the SOC system that occurred in 2018. As a result, projections for individual

occupations were combined (if necessary) to create the same occupational clusters reported in the ACS data.

Middle-Skill STEM Occupation Index

The following section includes an index of middle-skill STEM occupations in Texas. Each page features one set of occupations and corresponding demographic, educational, and occupational data for workers in the occupation. The diagram below further explains the information presented in the occupation pages. Occupations are listed in alphabetical order.

Middle-Skill STEM Occupation Page Example



Legend

1. PUMS occupation title, Standard Occupational Classification (SOC) code(s), and total number of workers in the occupation
2. Demographic characteristics of workers by age group
3. Demographic characteristics of workers by sex
4. Demographic characteristics of workers by race and ethnicity
5. Educational characteristics of workers by educational attainment
6. Occupational characteristics of workers by level of education, estimated employment in 2016, projected employment for 2026, projected percentage change in employment from 2016 to 2026, and median wage for the occupation in 2020

For detailed information on the data and sources used in the index, please refer to the Data and Methodology section and Appendix A of this report.

Agricultural and Food Science Technicians

SOCs 19-4012; 19-4013 | 2,639 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
1,500	912	227	-

Sex

Male	Female
1,499	1,140

Race and Ethnicity

White	Black	Asian	Hispanic	Other
653	-	112	1,791	83

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
570	737	346	986

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	4,456	4,846	8.75%	$40,417

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Aircraft Mechanics and Service Technicians

SOC 49-3011 | 20,477 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
9,588	10,090	799	0

Sex

Male	Female
19,353	1,124

Race and Ethnicity

White	Black	Asian	Hispanic	Other
11,199	1,705	725	6,216	632

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
603	5,307	11,429	3,138

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	16,821	18,407	9.43%	$68,463

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Architectural and Civil Drafters

SOC 17-3011 | 4,372 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
2,956	1,105	213	98

Sex

Male	Female
3,086	1,286

Race and Ethnicity

White	Black	Asian	Hispanic	Other
2,431	265	339	1,337	-

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
-	426	2,306	1,640

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	11,457	13,783	20.30%	$56,347

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Audiovisual Equipment Installers and Repairers

SOC 49-2097 | 3,357 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
1,482	1,488	387	-

Sex

Male	Female
3,357	-

Race and Ethnicity

White	Black	Asian	Hispanic	Other
1,292	519	213	1,096	237

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
369	1,380	1,047	561

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	2,185	2,541	16.29%	$40,486

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Automotive Service Technicians and Mechanics

SOC 49-3023 | 92,232 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
55,678	32,383	4,171	-

Sex

Male	Female
90,528	1,704

Race and Ethnicity

White	Black	Asian	Hispanic	Other
34,829	4,825	1,472	50,236	870

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
24,141	33,528	30,243	4,320

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	54,144	61,823	14.18%	$47,504

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Avionics Technicians

SOC 49-2091 | 1,759 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
1,191	441	120	7

Sex

Male	Female
1,759	-

Race and Ethnicity

White	Black	Asian	Hispanic	Other
772	-	63	924	-

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
64	420	1,202	73

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	1,856	2,031	9.43%	$66,289

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Business Operations Specialists, All Other

SOC 13-1199 | 31,406 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
17,858	11,439	2,109	-

Sex

Male	Female
14,850	16,556

Race and Ethnicity

White	Black	Asian	Hispanic	Other
15,692	3,534	3,170	7,808	1,202

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
983	2,986	11,047	16,390

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Bachelor's degree or higher	69,491	80,043	15.18%	$85,866

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Cardiovascular Technologists and Technicians

SOC 29-2031 | 4,140 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
2,194	1,578	368	-

Sex

Male	Female
1,610	2,530

Race and Ethnicity

White	Black	Asian	Hispanic	Other
1,849	1,327	195	677	92

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
-	1,234	1,245	1,661

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	5,204	6,293	20.93%	$57,927

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Chemical Processing Machine Setters, Operators, and Tenders

SOCs 51-9011; 51-9012 | 5,166 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
3,389	1,557	220	-

Sex

Male	Female
4,694	472

Race and Ethnicity

White	Black	Asian	Hispanic	Other
3,533	412	-	1,101	120

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
234	1,288	2,556	1,088

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	17,224	18,224	5.81%	$44,454-$61,252

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Chemical Technicians

SOC 19-4031 | 7,880 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
4,638	2,904	338	-

Sex

Male	Female
5,293	2,587

Race and Ethnicity

White	Black	Asian	Hispanic	Other
3,788	494	379	3,019	200

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
228	1,320	3,508	2,824

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	6,284	7,075	12.59%	$62,067

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Clinical Laboratory Technologists and Technicians

SOCs 29-2011; 29-2012 | 29,365 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
19,262	8,258	1,845	-

Sex

Male	Female
9,850	19,515

Race and Ethnicity

White	Black	Asian	Hispanic	Other
12,286	3,847	3,589	9,243	400

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
1,037	3,527	12,132	12,669

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	24,391	29,334	20.27%	$52,496

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Computer, Automated Teller, and Office Machine Repairers

SOC 49-2011 | 18,511 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
10,450	7,260	801	-

Sex

Male	Female
17,245	1,266

Race and Ethnicity

White	Black	Asian	Hispanic	Other
9,513	1,562	2,047	4,890	499

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
516	3,847	10,782	3,366

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	14,045	16,356	16.45%	$38,660

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Computer Numerically Controlled Tool Operators and Programmers

SOCs 51-9161; 51-9162 | 5,987 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
3,774	1,976	237	-

Sex

Male	Female
5,892	95

Race and Ethnicity

White	Black	Asian	Hispanic	Other
2,627	760	479	1,948	173

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
1,223	1,813	2,240	711

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	12,251	14,387	17.44%	$43,861-$59,685

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Computer Support Specialists

SOCs 15-1231; 15-1232 | 66,962 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
39,462	22,911	4,540	49

Sex

Male	Female
53,245	13,717

Race and Ethnicity

White	Black	Asian	Hispanic	Other
33,813	10,022	7,651	12,416	3,060

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
470	7,314	29,991	29,187

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	74,016	86,822	17.30%	$50,649-$76,951

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Construction Equipment Operators

SOCs 47-2071; 47-2072; 47-2073 | 47,391 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
26,504	16,907	3,960	20

Sex

Male	Female
45,949	1,442

Race and Ethnicity

White	Black	Asian	Hispanic	Other
18,570	3,876	230	24,044	671

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
17,454	21,845	7,125	967

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	42,225	51,121	21.07%	$39,931-$66,565

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Dental and Ophthalmic Laboratory Technicians and Medical Appliance Technicians

SOCs 51-9081; 51-9082; 51-9083 | 6,235 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
3,884	1,516	835	-

Sex

Male	Female
2,729	3,506

Race and Ethnicity

White	Black	Asian	Hispanic	Other
2,703	-	628	2,831	73

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
786	1,259	3,390	800

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	5,469	6,510	19.03%	$32,578-$44,785

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Dental Assistants

SOC 31-9091 | 32,277 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
24,680	6,313	1,166	118

Sex

Male	Female
4,748	27,529

Race and Ethnicity

White	Black	Asian	Hispanic	Other
14,245	3,006	1,343	13,060	623

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
121	11,247	17,893	3,016

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	28,418	34,673	22.01%	$39,683

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Dental Hygienists

SOC 29-1292 | 13,748 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
8,139	4,531	1,078	-

Sex

Male	Female
1,112	12,636

Race and Ethnicity

White	Black	Asian	Hispanic	Other
7,668	199	1,512	4,190	179

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
114	1,380	6,959	5,295

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	12,529	15,262	21.81%	$77,594

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Diagnostic Medical Sonographers

SOC 29-2032 | 6,747 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
3,820	2,814	113	-

Sex

Male	Female
1,830	4,917

Race and Ethnicity

White	Black	Asian	Hispanic	Other
3,268	718	812	1,890	59

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
-	116	3,691	2,940

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	5,228	7,039	34.64%	$72,020

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Dietetic Technicians and Ophthalmic Medical Technicians

SOCs 29-2051; 29-2057 | 5,021 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
3,018	1,909	94	-

Sex

Male	Female
949	4,072

Race and Ethnicity

White	Black	Asian	Hispanic	Other
1,847	778	620	1,640	136

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
504	1,456	1,871	1,190

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	7,113	8,657	21.71%	$30,836-$34,392

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Electrical and Electronic Engineering Technologists and Technicians

SOC 17-3023 | 6,411 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
2,748	2,664	999	-

Sex

Male	Female
6,255	156

Race and Ethnicity

White	Black	Asian	Hispanic	Other
3,573	312	310	2097	119

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
-	763	4,380	1,268

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	15,108	16,803	11.22%	$70,085

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Electrical, Electronics, and Electromechanical Assemblers

SOCs 51-2021; 51-2022; 51-2023 | 11,478 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
5,811	4,958	709	-

Sex

Male	Female
6,132	5,346

Race and Ethnicity

White	Black	Asian	Hispanic	Other
1,963	1,316	4,557	3,545	97

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
2,992	4,948	2,615	923

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	23,240	28,482	22.56%	$41,063

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Electricians

SOC 47-2111 | 79,438 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
49,170	26,488	3,780	-

Sex

Male	Female
78,546	892

Race and Ethnicity

White	Black	Asian	Hispanic	Other
33,229	3,764	838	41,091	516

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
13,821	30,724	29,744	5,149

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	61,475	72,113	17.30%	$51,351

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Emergency Medical Technicians and Paramedics

SOCs 29-2042; 29-2043 | 18,845 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
14,214	4,334	297	-

Sex

Male	Female
13,507	5,338

Race and Ethnicity

White	Black	Asian	Hispanic	Other
11,149	1,902	300	4,953	541

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
507	1,763	13,209	3,366

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	18,716	22,398	19.67%	$37,550

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Environmental Science and Geoscience Technicians, and Nuclear Technicians

SOCs 19-4042; 19-4043; 19-4044; 19-4051 | 5,038 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
2,530	1,901	607	-

Sex

Male	Female
3,561	1,477

Race and Ethnicity

White	Black	Asian	Hispanic	Other
3,015	153	764	919	187

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
140	611	1,734	2,553

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	15,644	18,411	17.69%	$49,246-$80,575

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Farmers, Ranchers, and Other Agricultural Managers

SOC 11-9013 | 44,901 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
13,475	18,330	12,312	784

Sex

Male	Female
38,216	6,685

Race and Ethnicity

White	Black	Asian	Hispanic	Other
36,062	660	253	7,088	838

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
6,025	12,037	12,093	14,746

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	259,104	269,495	4.01%	$85,882

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

First-Line Supervisors of Farming, Fishing, and Forestry Workers

SOC 45-1011 | 6,344 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
1,842	3,581	921	-

Sex

Male	Female
5,822	522

Race and Ethnicity

White	Black	Asian	Hispanic	Other
3,330	-	174	2,761	79

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
1,777	1,800	1,690	1,077

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	2,324	2,477	6.58%	$50,137

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

First-Line Supervisors of Food Preparation and Serving Workers

SOC 35-1012 | 65,532 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
43,057	19,150	3,325	-

Sex

Male	Female
24,637	40,895

Race and Ethnicity

White	Black	Asian	Hispanic	Other
25,243	9,788	1,757	26,888	1,856

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
8,992	24,620	25,696	6,224

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	81,842	102,680	25.46%	$36,310

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Food Batchmakers

SOC 51-3092 | 11,633 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
6,594	3,588	1,436	15

Sex

Male	Female
2,765	8,868

Race and Ethnicity

White	Black	Asian	Hispanic	Other
3,260	1,231	156	6,836	150

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
3,342	4,248	2,920	1,123

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	8,667	9,780	12.84%	$32,015

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Forest and Conservation Workers

SOC 45-4011 | 925 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
925	-	-	-

Sex

Male	Female
815	110

Race and Ethnicity

White	Black	Asian	Hispanic	Other
460	21	-	444	-

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
483	21	311	110

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	238	244	2.52%	$40,932

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Hazardous Materials Removal Workers

SOC 47-4041 | 3,158 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
1,587	1,125	446	-

Sex

Male	Female
2,521	637

Race and Ethnicity

White	Black	Asian	Hispanic	Other
776	862	-	1,520	-

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
1,306	728	967	157

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	4,255	5,137	20.73%	$43,186

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Licensed Practical and Licensed Vocational Nurses

SOC 29-2061 | 101,437 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
55,581	37,025	8,690	141

Sex

Male	Female
13,747	87,690

Race and Ethnicity

White	Black	Asian	Hispanic	Other
36,159	25,983	4,398	32,071	2,826

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
2,728	21,876	72,129	4,704

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	71,428	85,033	19.05%	$48,382

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Logging Workers

SOCs 45-4021; 45-4022; 45-4023; 45-4029 | 2,013 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
1,182	542	289	-

Sex

Male	Female
1,977	36

Race and Ethnicity

White	Black	Asian	Hispanic	Other
1,686	293	-	18	16

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
343	1,104	535	31

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	1,006	987	-1.89%	$40,311

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Magnetic Resonance Imaging Technologists

SOC 29-2035 | 3,335 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
2,185	901	249	-

Sex

Male	Female
2,255	1,080

Race and Ethnicity

White	Black	Asian	Hispanic	Other
2,017	287	195	723	113

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
-	172	1,943	1,220

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	2,786	3,456	24.05%	$74,425

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Medical Assistants

SOC 31-9092 | 60,728 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
50,868	9,265	595	-

Sex

Male	Female
6,379	54,349

Race and Ethnicity

White	Black	Asian	Hispanic	Other
14,639	7,429	1,305	36,470	885

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
1,490	16,744	35,934	6,560

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	58,571	79,526	35.78%	$33,703

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Medical Records Specialists

SOC 29-2072 | 16,668 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
8,879	6,781	1,008	-

Sex

Male	Female
1,603	15,065

Race and Ethnicity

White	Black	Asian	Hispanic	Other
6,912	2,753	1,017	5,761	225

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
203	3,618	9,937	2,910

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	17,355	21,111	21.64%	$44,100

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Millwrights

SOC 49-9044 | 3,600 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
889	2,537	174	-

Sex

Male	Female
3,600	-

Race and Ethnicity

White	Black	Asian	Hispanic	Other
2,783	525	132	160	-

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
296	1,948	1,038	318

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	3,165	3,820	20.70%	$53,210

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Miscellaneous Health Technologists and Technicians

SOCs 29-2091; 29-2092; 29-2099 | 14,406 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
9,947	3,524	935	-

Sex

Male	Female
5,373	9,033

Race and Ethnicity

White	Black	Asian	Hispanic	Other
6,604	788	1,585	4,998	431

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
67	2,930	6,032	5,377

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	11,169	13,993	25.28%	$44,100-$66,880

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Miscellaneous Plant and System Operators

SOCs 51-8091; 51-8092; 51-8093; 51-8099 | 10,716 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
5,680	4,631	405	-

Sex

Male	Female
10,247	469

Race and Ethnicity

White	Black	Asian	Hispanic	Other
5,289	1,605	-	3,744	78

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
2,210	2,386	5,234	886

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	18,185	18,919	4.04%	$49,340-$81,893

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Nuclear Medicine Technologists and Medical Dosimetrists

SOCs 29-2033; 29-2036 | 2,501 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
1,148	1,134	219	-

Sex

Male	Female
1,079	1,422

Race and Ethnicity

White	Black	Asian	Hispanic	Other
1,327	368	206	600	-

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
78	-	849	1,574

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	1,346	1,636	21.55%	$78,454

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Occupational Health and Safety Specialists and Technicians

SOCs 19-5011; 19-5012 | 10,845 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
6,738	3,588	519	-

Sex

Male	Female
8,344	2,501

Race and Ethnicity

White	Black	Asian	Hispanic	Other
4,872	896	269	4,202	606

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
425	2,994	3,584	3,842

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	15,207	17,903	17.73%	$50,217-$77,142

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Occupational Therapy Assistants and Aides

SOCs 31-2011; 31-2012 | 3,847 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
1,979	1,684	184	-

Sex

Male	Female
539	3,308

Race and Ethnicity

White	Black	Asian	Hispanic	Other
2,542	328	126	727	124

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
77	599	2,448	723

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	4,165	5,647	35.58%	$30,229-$69,419

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Opticians, Dispensing

SOC 29-2081 | 4,867 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
3,688	786	298	95

Sex

Male	Female
824	4,043

Race and Ethnicity

White	Black	Asian	Hispanic	Other
2,983	-	96	1,460	328

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
611	1,139	2,022	1,095

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	6,701	7,924	18.25%	$36,018

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Other Agricultural Workers

SOCs 45-2021; 45-2091; 45-2092; 45-2093; 45-2099 | 68,152 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
35,004	25,015	7,751	382

Sex

Male	Female
53,121	15,031

Race and Ethnicity

White	Black	Asian	Hispanic	Other
23,459	1,410	754	42,179	350

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
31,330	22,100	9,423	5,299

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Less than a high school diploma	160,310	170,565	6.40%	$25,740-$29,155

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Other Drafters

SOCs 17-3012; 17-3013; 17-3019 | 12,055 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
7,351	3,956	748	-

Sex

Male	Female
8,830	3,225

Race and Ethnicity

White	Black	Asian	Hispanic	Other
6,643	707	470	4,235	-

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
130	554	8,035	3,336

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	9,507	11,240	18.23%	$50,382-$62,815

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Other Electrical and Electronic Equipment Mechanics, Installers, and Repairers

SOCs 49-2093; 49-2094; 49-2095; 49-2096 | 1,879 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
1,242	610	27	-

Sex

Male	Female
1,770	109

Race and Ethnicity

White	Black	Asian	Hispanic	Other
1,180	109	108	482	-

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
81	409	972	417

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	12,108	13,286	9.73%	$39,904-$70,866

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Other Engineering Technologists and Technicians, Except Drafters

SOCs 17-3021; 17-3022; 17-3024; 17-3025; 17-3026; 17-3027; 17-3028; 17-3029 | 41,388 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
22,230	16,438	2,720	-

Sex

Male	Female
34,533	6,855

Race and Ethnicity

White	Black	Asian	Hispanic	Other
19,157	2,998	2,873	15,047	1,313

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
2,179	6,551	22,904	9,754

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	37,143	42,646	14.82%	$48,251-$69,439

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Other Healthcare Practitioners and Technical Occupations

SOCs 29-9021; 29-9091; 29-9092; 29-9093; 29-9099 | 11,859 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
6,936	4,164	689	70

Sex

Male	Female
3,494	8,365

Race and Ethnicity

White	Black	Asian	Hispanic	Other
6,266	1,218	728	3,374	273

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
511	1,463	1,799	8,086

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	7,950	9,710	22.14%	$57,948-$89,897

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Other Installation, Maintenance, and Repair Workers

SOCs 49-9081; 49-9092; 49-9095 | 29,972 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
19,897	8,845	1,230	-

Sex

Male	Female
28,315	1,657

Race and Ethnicity

White	Black	Asian	Hispanic	Other
14,617	3,101	155	11,705	394

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
5,564	12,772	9,607	2,029

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	2,359	4,201	78.08%	$36,132-$60,032

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Other Life, Physical, and Social Science Technicians

SOCs 19-4061; 19-4071; 19-4092; 19-4099 | 21,066 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
15,297	4,187	1,582	-

Sex

Male	Female
10,681	10,385

Race and Ethnicity

White	Black	Asian	Hispanic	Other
10,277	1,470	3,359	5,088	872

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
963	2,506	10,210	7,387

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	10,804	12,804	18.51%	$38,346-$61,121

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Other Media and Communication Equipment Workers

SOCs 27-4011; 27-4012; 27-4014; 27-4015; 27-4099 | 8,212 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
4,684	2,959	569	-

Sex

Male	Female
7,217	995

Race and Ethnicity

White	Black	Asian	Hispanic	Other
4,199	864	595	2,480	74

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
305	1,027	4,036	2,844

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	9,605	11,008	14.61%	$40,301-$75,990

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Other Transportation Workers

SOCs 53-6011; 53-6041; 53-6099 | 3,391 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
1,766	1,493	132	-

Sex

Male	Female
2,948	443

Race and Ethnicity

White	Black	Asian	Hispanic	Other
1,047	416	73	1,309	546

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
99	1,526	954	812

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	3,686	4,092	11.01%	$48,955

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Pharmacy Technicians

SOC 29-2052 | 35,826 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
27,487	7,533	806	-

Sex

Male	Female
8,782	27,044

Race and Ethnicity

White	Black	Asian	Hispanic	Other
12,076	6,396	4,000	12,785	569

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
525	7,162	21,504	6,635

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	32,899	39,903	21.29%	$37,005

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Physical Therapist Assistants and Aides

SOCs 31-2021; 31-2022 | 7,431 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
5,298	2,114	19	-

Sex

Male	Female
2,116	5,315

Race and Ethnicity

White	Black	Asian	Hispanic	Other
3,836	683	254	2,412	246

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
154	144	4,712	2,421

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	12,629	16,702	32.25%	$27,593-$69,905

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Power Plant Operators, Distributors, and Dispatchers

SOCs 51-8011; 51-8012; 51-8013 | 3,545 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
1,889	1,201	455	-

Sex

Male	Female
2,841	704

Race and Ethnicity

White	Black	Asian	Hispanic	Other
1,953	448	107	803	234

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
107	1,754	1,436	248

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	3,797	4,110	8.24%	$79,927

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Precision Instrument and Equipment Repairers

SOCs 49-9061; 49-9062; 49-9063; 49-9064; 49-9069 | 8,908 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
2,877	4,666	1,365	-

Sex

Male	Female
8,064	844

Race and Ethnicity

White	Black	Asian	Hispanic	Other
4,827	950	345	2,458	328

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
321	903	6,422	1,262

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	4,967	5,757	15.90%	$42,089-$59,706

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Prepress Technicians and Workers

SOC 51-5111 | 976 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
453	523	-	-

Sex

Male	Female
506	470

Race and Ethnicity

White	Black	Asian	Hispanic	Other
333	-	205	438	-

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
-	242	463	271

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	1,988	1,810	-8.95%	$38,300

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Radiation Therapists

SOC 29-1124 | 1,487 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
868	534	85	-

Sex

Male	Female
512	975

Race and Ethnicity

White	Black	Asian	Hispanic	Other
990	351	-	146	-

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
-	-	941	546

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	1,458	1,816	24.55%	$93,037

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Radio and Telecommunications Equipment Installers and Repairers

SOCs 49-2021; 49-2022 | 22,596 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
11,957	8,669	1,970	-

Sex

Male	Female
19,721	2,875

Race and Ethnicity

White	Black	Asian	Hispanic	Other
10,274	1,867	1,322	8,467	666

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
1,585	6,771	10,660	3,580

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	26,426	28,034	6.08%	$51,856-$57,853

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Radiologic Technologists

SOC 29-2034 | 18,672 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
11,988	6,084	600	-

Sex

Male	Female
7,599	11,073

Race and Ethnicity

White	Black	Asian	Hispanic	Other
8,918	1,324	1,178	6,470	782

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
128	987	13,727	3,830

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	15,903	19,529	22.80%	$60,680

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Registered Nurses

SOC 29-1141 | 292,276 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
155,058	114,061	22,415	742

Sex

Male	Female
40,105	252,171

Race and Ethnicity

White	Black	Asian	Hispanic	Other
150,079	46,972	32,955	54,465	7,805

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
1,432	2,058	104,176	184,610

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Bachelor's degree or higher	210,775	261,607	24.12%	$76,800

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Respiratory Therapists

SOC 29-1126 | 12,137 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
5,024	6,187	926	-

Sex

Male	Female
4,916	7,221

Race and Ethnicity

White	Black	Asian	Hispanic	Other
4,958	1,928	488	4,763	-

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
206	84	8,828	3,019

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	11,784	15,943	35.29%	$61,490

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Surgical Technologists

SOC 29-2055 | 9,296 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
5,015	3,626	655	-

Sex

Male	Female
3,344	5,952

Race and Ethnicity

White	Black	Asian	Hispanic	Other
5,230	836	128	3,071	31

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
156	1,651	5,937	1,552

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	10,870	13,129	20.78%	$49,855

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Surveying and Mapping Technicians

SOC 17-3031 | 7,699 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
5,271	2,000	398	30

Sex

Male	Female
6,767	932

Race and Ethnicity

White	Black	Asian	Hispanic	Other
4,929	-	-	2,636	134

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
972	2,883	3,156	688

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	8,213	10,059	22.48%	$44,065

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Tool and Die Makers

SOC 51-4111 | 2,052 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
149	1,620	283	-

Sex

Male	Female
2,021	31

Race and Ethnicity

White	Black	Asian	Hispanic	Other
1,148	-	226	529	149

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
494	473	1,054	31

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	1,861	2,027	8.92%	$49,963

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Transportation Inspectors

SOC 53-6051 | 7,121 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
3,471	2,760	890	-

Sex

Male	Female
6,166	955

Race and Ethnicity

White	Black	Asian	Hispanic	Other
3,837	1,096	-	2,170	18

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
739	1,630	3,707	1,045

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	3,734	4,271	14.38%	$85,528

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Veterinary Technologists and Technicians

SOC 29-2056 | 12,365 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
10,393	1,919	53	-

Sex

Male	Female
1,359	11,006

Race and Ethnicity

White	Black	Asian	Hispanic	Other
8,863	1,247	-	1,924	331

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
511	1,378	5,894	4,582

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	9,285	11,649	25.46%	$33,630

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Web Developers

SOC 15-1254 | 9,052 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
6,432	2,130	490	-

Sex

Male	Female
5,668	3,384

Race and Ethnicity

White	Black	Asian	Hispanic	Other
5,068	1,859	274	1,294	557

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
8	385	2,925	5,734

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
Some college or associate's degree	10,128	12,098	19.45%	$76,474

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Welding, Soldering, and Brazing Workers

SOCs 51-4121; 51-4122 | 101,562 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
65,273	30,942	5,264	83

Sex

Male	Female
96,220	5,342

Race and Ethnicity

White	Black	Asian	Hispanic	Other
30,106	7,061	2,940	59,854	1,601

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
30,744	43,800	25,748	1,270

Occupational Characteristics

Entry level of education	2016 employment	2026 projected employment	Projected percentage change	2020 Median Wage
High school graduate (includes equivalency)	57,206	66,938	17.01%	$38,071-$48,069

Sources:

Demographic and Educational Characteristics: U.S. Census Bureau American Community Survey, 2018

Occupational Characteristics: Texas Workforce Commission

Detailed Summary of Middle-Skill STEM Occupations

All Middle-Skill STEM Occupations in Texas

1,645,313 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
967,494	561,045	114,140	2,634

Sex

Male	Female
895,938	749,375

Race and Ethnicity

White	Black	Asian	Hispanic	Other
736,721	184,424	97,554	590,017	36,597

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
176,574	361,416	687,277	420,046

Source: U.S. Census Bureau American Community Survey, 2018

Detailed Summary for All Other Occupations

All Other Non-Middle-Skill STEM Occupations in Texas

14,863,106 workers

Demographic Characteristics

Age group

16-44	45-64	65-84	85+
8,704,403	5,012,632	1,123,147	22,924

Sex

Male	Female
7,855,432	7,007,674

Race and Ethnicity

White	Black	Asian	Hispanic	Other
6,593,198	1,803,937	759,407	5,423,966	282,598

Educational Characteristics

Less than a high school diploma	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree or higher
2,094,605	3,707,428	4,474,705	4,586,368

Source: U.S. Census Bureau American Community Survey, 2018

Conclusion

The evolution of the American workforce poses significant challenges to employers seeking to attract high-quality, high-skilled employees that meet the changing needs of industry. As technological advances across all industries continue to increase, the need for further workplace specialization creates several challenges for workers and employers. The current skills gap is widening, and employers are looking to middle-skill workers to fill this gap, especially in STEM occupations.

This report examines the middle-skill workforce of Texas. The objective of this research was to compile current demographic and occupational data for middle-skill STEM occupations in Texas and produce educational and economic benchmarks to understand their function within the Texas workforce system. The data may be useful for workforce system stakeholders to address relevant statewide issues. Additionally, this report serves as a companion piece to *Demographics of the Unemployed in Texas: A Snapshot Before the Pandemic,* a report that looks at the effects on the Texas economy as a result of the prolonged period of low unemployment in finding and retaining workers.

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Appendix A: Detailed Methodology

This section describes the process used to develop and classify the list of middle-skill STEM occupations in this report. Because the industry and classifications have changed over time, crosswalks have been developed to facilitate analysis of data across classification systems. The process, which can be replicated using the instructions detailed in this section, involved four separate steps:

1. Identify middle-skill STEM occupations.
2. Update the list of middle-skill STEM occupations using the 2018 Standard Occupational Classification (SOC) system via a crosswalk.
3. Identify and classify middle-skill STEM occupations using the 2018 American Community Survey Public Use Microdata Sample (PUMS) file Occupation Code List.
4. Conduct demographic analysis using variables identified from the 2018 PUMS Data Dictionary and Code List.

Each step in the process is described in further detail below.

1. Identify middle-skill STEM occupations.

The first step in developing a list of middle-skill STEM occupations was to identify national organizations that classify occupations as STEM occupations. After examining various federal, state, and independent organizations, nine different organizations were identified for analysis. The nine organizations identified include:

1. Bureau of Labor Statistics (BLS)/Occupational Employment Statistics
2. U.S. Census Bureau (Census)
3. Center on Education and the Workforce
4. U.S. Department of Commerce
5. Florida Department of Economic Opportunity
6. National Science Foundation
7. Occupational Information Network STEM Career Cluster and STEM Discipline
8. Standard Occupational Classification Policy Committee (SOCPC)
9. Texas Workforce Commission Strategic Workforce Assessment Program

Each organization identifies a different number of occupations as STEM occupations based on varying definitions and classification procedures. Cumulatively, the nine organizations generate 11 different lists of occupations considered STEM. For consistency and coding purposes, this report follows SOC detailed occupation code principles. A total of 257 SOC detailed occupations are identified as STEM by at least one of the 11 STEM occupation source lists.

After identifying the occupations classified as STEM from each of the 11 sources, a detailed spreadsheet cataloging each organization was developed. This spreadsheet is found in Appendix 2: Analysis of STEM Occupations by Source, from the Council report, *Defining Middle-Skill STEM Occupations in Texas* (2015). Corresponding SOC detailed occupation codes and titles were then matched to each of the 11 sources.

The numbers in parentheses indicate total occupations classified as STEM by each source. The U.S. Census Bureau is the only source that distinguishes between STEM and STEM-related occupations. Occupations classified as STEM-related by the U.S. Census Bureau are indicated by an "X" mark. A total of 63 occupations are classified as STEM-related by the U.S. Census Bureau, primarily from the SOC major group of healthcare practitioners and technical occupations.

The STEM occupation list was then analyzed to determine classification similarities. Across all organizations, 18 of the 23 major occupation groups are represented. Of the 18 major groups, STEM occupations are concentrated around six SOC major groups. Identified in yellow, only 42 detailed occupations classified as STEM were matched across all sources. These occupations are found within the SOC major groups of computer and mathematical occupations; architecture and engineering occupations; and life, physical, and social science occupations. Most of the 42 detailed occupations matched across all sources require a four-year degree or higher.

After developing the list of STEM occupations, the next step in the process reduced the list down to only those occupations considered middle-skill STEM. The first objective was to determine the most comprehensive number of STEM occupations to be used for analysis. In all, 257 detailed occupations were considered STEM by at least one of the 11 sources.

The complete list of 257 identified STEM occupations were matched with BLS detailed occupation education and training assignments. The BLS education and training assignment identifies typical education levels needed for entry into every SOC occupation. As described in the report, middle-skill occupations are those that require more than a high school diploma but less than a postsecondary four-year degree. Of the original 257 occupations considered STEM by at least one of the 11 sources, 85 were classified as middle-skill.

Using BLS education and training assignments, every middle-skill occupation not included in the 85 middle-skill STEM occupations list was evaluated to locate possible STEM occupations critical to Texas based on job growth and salary data. Upon examination, 12 additional middle-skill classified occupations were identified.[2] While the 12 additional middle-skill occupations are not considered STEM by any of the 11 sources, they require significant STEM-related skills and knowledge. Thus, a total of 97 middle-skill STEM occupations were initially identified for the Texas economy.

2. Update the list of middle-skill STEM occupations using the 2018 SOC via a crosswalk.

The second step in developing a list of middle-skill STEM occupations with demographic data was to update the list of middle-skill STEM occupations. Following the update of the SOC system in 2018, some occupational areas received significant revisions. A summary of the changes is included below:

> The minor group, "Occupational Health and Safety Specialists and Technicians" (19-500) moved into a major group, "Life, Physical, and Social Science Occupations" (19-0000) from its former location as a broad occupation, "Occupational Health and Safety Specialists and Technicians"

[2] Please see Appendix 1 and Appendix 2 of *Defining Middle-Skill STEM Occupations in Texas,* located at https://gov.texas.gov/uploads/files/organization/twic/Middle-Skill_STEM_Occupations_in_TX.pdf

(29-9010 in the 2010 SOC) in the major group "Healthcare Practitioners and Technical Occupations" (29-0000). Four detailed occupations moved across minor groups: "Teaching Assistants, Postsecondary" (25-9044, formerly 25-1191), "Dental Hygienists" (29-1292, formerly 29-2021), "Computer Numerically Controlled Tool Operators" (51-9161, formerly 51-4011), and Computer Numerically Controlled Tool Programmers (51-9162, formerly 51-4012).

The minor group code for "Computer Occupations" (15-1200, formerly 15-1100) was changed to highlight the impact of the many changes made to the detailed occupations within that group on time series analysis. The minor group code and title, as well as the broad occupations included, changed with the creation of "Home Health and Personal Care Aides; and Nursing Assistants, Orderlies, and Psychiatric Aides" (31-1100, formerly 31-1000), which now includes "Personal Care Aides" (31-1122, formerly 39-9021).

Eleven 2018 SOC detailed occupations resulted from combinations of existing 2010 SOC detailed occupations, such as "Software Developers" (15-1252) which combined "Software Developers, Applications" (15-1132 in the 2010 SOC) and "Software Developers, Systems Software" (15-1133 in the 2010 SOC).

Multiple codes contained in the 2010 SOC no longer appear in the 2018 SOC due to structural changes stemming from the merging, breaking out, or collapsing of detailed occupations. A complete list of the codes deleted from the 2010 SOC is available at: https://www.bls.gov/soc/2018/home.htm.

As a result, some occupations from the original list of 97 middle-skill STEM occupations were either combined or removed. Additionally, in order to ensure that all occupations fit the definition of middle-skill, occupations that list a typical level of education that most workers need to enter this occupation as a bachelor's degree or higher have been removed from this list. The original list of 97 occupations has been reduced to 93. The occupations that were removed include:

- Fish and Game Wardens, 33-3031
- Managers, All Other, SOC 11-9199
- Psychiatric Technicians, SOC 29-2053
- Social Science Research Assistants, SOC 19-4061

A crosswalk was developed to record any changes from the 2010 SOC system to the 2018 SOC system that affect the list of middle-skill STEM occupations. This crosswalk is found in Appendix C. The crosswalk is divided into six columns:

1. PUMS Occupation Title
2. Middle-Skill STEM Occupation Title
3. 2010 SOC Code
4. 2018 SOC Code
5. 2018 SOC Codes included in PUMS Occupation
6. 2018 PUMS Occupation Code

For this section, columns two, three, and four columns were utilized. To identify any changes, a crosswalk provided by BLS was used.[3]

3. Identify and classify middle-skill STEM occupations using the 2018 American Community Survey PUMS Occupation Code List.

The third step in this research consisted of translating 2018 SOC codes for middle-skill STEM occupations in order to derive demographic data from them. This was achieved by translating the contents from column 4 of the crosswalk, 2018 SOC codes, into column 6, 2018 PUMS Occupation codes. This was achieved by taking the 2018 PUMS code list provided by the U.S. Census Bureau[4], the 2018 PUMS data dictionary, and the 2018 major groups SOC codes provided by BLS[5]. The PUMS occupation code can take on one of three value types. The 2018 detailed-SOC codes were translated into the PUMS occupation codes by performing one of the following steps:

1. If the PUMS occupation code was a single, detailed-level SOC code: no changes were necessary and no additional action was taken. The PUMS Occupation Title (column 1) is equivalent to the detailed-level SOC title.
2. If the PUMS occupation code was a single, broad-level SOC code: column 5 lists all of the detailed-level SOC codes nested within the broad-level SOC code. The PUMS Occupation Title (column 1) is equivalent to the broad-level SOC title.
3. If the PUMS occupation code was a combination of multiple detailed-level and/or broad-level SOC codes: column 5 lists all of the detailed-level SOC codes nested within the combination. The PUMS Occupation Title (column 1) is the title given to the combination in the PUMS data.

We include the PUMS occupation code in column 6 for information and data replication purpose. Following the steps above, all of the 2018 PUMS codes were nested within occupation groups reported in the ACS PUMS data. By nesting each of the detailed-level SOCs, duplicate analysis is removed from the Index. This nesting procedure is detailed in Appendix C. The result was a total of 69 middle-skill STEM occupation groups identified for demographic analysis.

4. Conduct demographic analysis using variables identified from the 2018 PUMS Data Dictionary and Code List.

Using the SOCP variable, demographic analysis was conducted using variables identified from the 2018 PUMS Data Dictionary and Code List. PUMS data is weighted, with each case representing multiple cases. The main population weight variables are as follows:

- Main population weight (PWGTP)
- Main household weight (WGTP)

[3] https://www.bls.gov/soc/2018/#crosswalks
[4] https://www.census.gov/programs-surveys/acs/technical-documentation/pums/documentation.html
[5] https://www.bls.gov/soc/2018/major_groups.htm

- Replication weights consisting of 80 unique variables for each type of weight (PWGTP1 through PWGTP80 for population weights and WGTP1 through WGTP80 for household)

Cross-tabulations were performed to determine frequencies using the SOCP variable and two or more categorical variables. The results of these cross-tabulations help to populate the values included in the All Other Non-Middle-Skill STEM Occupations list. Variables to use in this analysis include:

- AGEP – corresponds to ages under 1 year to 99 years (top-coded)
- SEX – corresponds to values male and female
- RAC1P – Recoded detailed race code:
    1. White alone
    2. Black or African American alone
    3. American Indian alone
    4. Alaska Native alone
    5. American Indian and Alaska Native tribes specified; or American Indian or Alaska Native, not specified and no other races
    6. Asian alone
    7. Native Hawaiian and Other Pacific Islander alone
    8. Some Other Race alone
    9. Two or more races
- HISP – Recoded detailed Hispanic Origin (please see the process below for parsing Hispanic ethnicity from HISP and RAC1P variables)
- SCHL – Educational attainment

The ACS race and ethnicity variables RAC1P and HISP were used to categorize racial/ethnic groups in this report.

RAC1P was coded following the process above. HISP was coded as follows:

1. Not Spanish/Hispanic/Latino
2. Mexican
3. Puerto Rican
4. Cuban
5. Dominican
6. Costa Rican
7. Guatemalan
8. Honduran
9. Nicaraguan
10. Panamanian
11. Salvadoran
12. Other Central American
13. Argentinean
14. Bolivian

15. Chilean
16. Colombian
17. Ecuadorian
18. Paraguayan
19. Peruvian
20. Uruguayan
21. Venezuelan
22. Other South American
23. Spaniard
24. All Other Spanish/Hispanic/Latino

The racial/ethnic groups discussed in this report are defined using the ACS PUMS data dictionary as follows: Asian: RAC1P=6. Asian alone; Black/African American: RAC1P=2. Black or African alone; Hispanic: HISP≠1. Do not fall into category "Not Spanish/Hispanic/Latino"; White: RAC1P=1 and HISP=1. White alone, not Hispanic; Other: All other left.

Race and ethnicity are treated as distinct concepts in the ACS. Hispanic ethnicity is treated as a binary condition. This means that a person is either coded to be Hispanic, or the person is not coded to be Hispanic. However, people who identify with any race group can also be considered Hispanic. Therefore, when describing the racial and ethnic composition of workers, the convention is to distinguish race from Hispanic ethnicity. For example, consider the number of middle-skill STEM workers who are White, non-Hispanic, or Asian, non-Hispanic. In contrast, workers who identify as Hispanic are allowed to be from any race group. Since race and ethnicity are distinguished when describing the racial and ethnic composition of workers, new variables need to be created:

- White, not Hispanic
- Black, or African American, not Hispanic
- Asian, not Hispanic
- Other race, not Hispanic (this includes all Native American groups, Native Hawaiian/Pacific Islander, and two or more races)
- Hispanic, any race

Using the RAC1P and HISP variables, the following calculations need to be performed:

* White alone, not Hispanic

White=1 if RAC1P=1 & HISP=1

* Black or African American alone, not Hispanic

Black=2 if RAC1P=2 & HISP=1

* Asian alone, not Hispanic

Asian=3 if RAC1P=6 & HISP=1

* Hispanic alone

Hispanic=4 if RAC1P=all & HISP=2-24

cumulative total will give user the Hispanic alone total

* Other alone, not Hispanic

Other=5 if RAC1P=3,4,5,7,8,9 & HISP=1

Once totals were obtained for all other occupations, the results were aggregated using the format and variables included in the middle-skill STEM occupation index in this report. For a brief explanation on the inclusion and limitations of occupational data used for the index, please refer to the Data and Methodology section of this report.

Appendix B: Non-Middle-Skill STEM Occupation Data Methodology

This section describes the process used to develop and classify the list of non-middle-skill STEM occupations in this report (also referred to as "All Other"). The process involved three separate steps:

1. Identify middle-skill STEM occupations using the crosswalk from Appendix C.
2. Produce a list of all other non-middle-skill STEM occupations.
3. Conduct demographic analysis using variables identified from the 2018 Public Use Microdata Sample (PUMS) Data Dictionary and Code List.

1. Identify middle-skill STEM occupations using the crosswalk from Appendix C.

The first step in developing a list of non-middle-skill STEM occupations was to identify the list of middle-skill STEM occupations. Following the steps described in Appendix A and using the crosswalk in Appendix C as a guide, staff arrived at a list of middle-skill STEM occupations. For demographic and education data to be produced, staff relied on the 2018 American Community Survey (ACS) PUMS file. As explained in Appendix A, Standard Occupational Classification (SOC) code conventions are followed by the U.S. Census Bureau; however, certain categories are either collapsed or enumerated differently from SOC. As a result, staff relied on the fourth column in the crosswalk to isolate variables corresponding to occupations using the Standard Occupational Classification Policy (SOCP) variable, referred to as the 2018 American Community Survey PUMS Occupation Code, as defined in the 2018 PUMS technical documentation. In total, the SOCP variable contains 530 unique SOCP values.

Using the 2018 1-year ACS PUMS file in conjunction with the list of occupation codes from column four of the crosswalk, the file was opened and the corresponding SOCP values were invoked.

2. Produce a list of all other non-middle-skill STEM occupations.

Once identified, 69 middle-skill STEM occupations from the PUMS dataset were removed from the dataset using the methods detailed in Appendix A. The remaining 459 values were isolated, leaving staff with a list for all other non-middle-skill STEM occupations.

3. Conduct demographic analysis using variables identified from the 2018 PUMS Data Dictionary and Code List.

Please refer to Appendix A, Step 4, for a detailed explanation on conducting demographic data analysis using 2018 1-year PUMS data. Once totals were obtained for all other occupations, the results were aggregated using the same format and variables used for the middle-skill STEM occupation index with one exception: occupational data points, including educational attainment required for an occupation and wage information, were not included in the summary table for this data set.

Appendix C: Middle-Skill STEM Crosswalk

The following crosswalk illustrates the process detailed in Appendix A to update the list of middle-skill STEM occupations used for this report.

PUMS Occupation Title	Middle-Skill STEM Occupation Title	2010 SOC Code	2018 SOC Code	2018 SOC Codes included in PUMS Occupation	2018 PUMS Occupation Code
Agricultural and Food Science Technicians	Agricultural and Food Science Technicians	19-4011	19-4010	19-4012: Agricultural Technicians; 19-4013: Food Science Technicians	194010
Aircraft Mechanics and Service Technicians	Aircraft Mechanics and Service Technicians	49-3011	49-3011		493011
Architectural and Civil Drafters	Architectural and Civil Drafters	17-3011	17-3011		173011
Audiovisual Equipment Installers and Repairers	Audiovisual Equipment Installers and Repairers	49-2097	49-2097		492097
Automotive Service Technicians and Mechanics	Automotive Service Technicians and Mechanics	49-3023	49-3023		493023
Avionics Technicians	Avionics Technicians	49-2091	49-2091		492091
Business Operations Specialists, All Other	Business Operations Specialists, All Other	13-1199	13-1199		131199
Cardiovascular Technologists and Technicians	Cardiovascular Technologists and Technicians	29-2031	29-2031		292031
Chemical Processing Machine Setters, Operators, and Tenders	Chemical Equipment Operators and Tenders	51-9011	51-9011	51-9011: Chemical Equipment Operators and Tenders; 51-9012: Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	519010
Chemical Technicians	Chemical Technicians	19-4031	19-4031		194031

PUMS Occupation Title	Middle-Skill STEM Occupation Title	2010 SOC Code	2018 SOC Code	2018 SOC Codes included in PUMS Occupation	2018 PUMS Occupation Code
Clinical Laboratory Technologists and Technicians	Medical and Clinical Laboratory Technicians	29-2012	29-2012	29-2011: Medical and Clinical Laboratory Technologists; 29-2012: Medical and Clinical Laboratory Technicians	292010
Computer, Automated Teller, and Office Machine Repairers	Computer, Automated Teller, and Office Machine Repairers	49-2011	49-2011		492011
Computer Numerically Controlled Tool Operators and Programmers	Computer Numerically Controlled Tool Operators;	51-4011	51-9161	51-9161: Computer Numerically Controlled Tool Operators; 51-9162: Computer Numerically Controlled Tool Programmers	519160
	Computer Numerically Controlled Tool Programmers	51-4012	51-9162		
Computer Support Specialists	Computer User Support Specialists;	15-1151	15-1232	15-1231: Computer Network Support Specialists; 15-1232: Computer User Support Specialists;	151230
	Computer Network Support Specialists	15-1152	15-1231		
Construction Equipment Operators	Operating Engineers and Other Construction Equipment Operators	47-2073	47-2073	47-2071: Paving, Surfacing, and Tamping Equipment Operators; 47-2072: Pile Driver Operators; 47-2073: Operating Engineers and Other Construction Equipment Operators	472070
Dental and Ophthalmic Laboratory Technicians and Medical Appliance Technicians	Dental Laboratory Technicians;	51-9081	51-9081	51-9081: Dental Laboratory Technicians; 51-9082: Medical Appliance Technicians; 51-9083: Ophthalmic Laboratory Technicians	519080
	Medical Appliance Technicians;	51-9082	51-9082		
	Ophthalmic Laboratory Technicians	51-9083	51-9083		
Dental Assistants	Dental Assistants	31-9091	31-9091		319091
Dental Hygienists	Dental Hygienists	29-2021	29-1292		291292

PUMS Occupation Title	Middle-Skill STEM Occupation Title	2010 SOC Code	2018 SOC Code	2018 SOC Codes included in PUMS Occupation	2018 PUMS Occupation Code
Diagnostic Medical Sonographers	Diagnostic Medical Sonographers	29-2032	29-2032		292032
Dietetic Technicians and Ophthalmic Medical Technicians	Dietetic Technicians;	29-2051	29-2051	29-2051: Dietetic Technicians; 29-2057: Ophthalmic Medical Technicians	29205X
	Ophthalmic Medical Technicians	29-2057	29-2057		
Electrical and Electronic Engineering Technologists and Technicians	Electrical and Electronic Engineering Technologists and Technicians	17-3023	17-3023		173023
Electrical, Electronics, and Electromechanical Assemblers	Electromechanical Equipment Assemblers	51-2023	51-2023	51-2021: Coil Winders, Tapers, and Finishers; 51-2022: Electrical and Electronic Assemblers; 51-2023: Electromechanical Equipment Assemblers	512020
Electricians	Electricians	47-2111	47-2111		472111
Emergency Medical Technicians and Paramedics	Emergency Medical Technicians and Paramedics	29-2041	29-2040	29-2042: Emergency Medical Technicians; 29-2043: Paramedics	292042
					292043
Environmental Science and Geoscience Technicians, and Nuclear Technicians	Environmental Science and Protection Technicians, Including Health;	19-4091	19-4042	19-4042: Environmental Science and Protection Technicians, Including Health; 19-4043: Geological Technicians, Except Hydrologic Technicians; 19-4044: Hydrologic Technicians; 19-4051: Nuclear Technicians	1940XX
	Geological Technicians, Except Hydrologic Technicians;	19-4041	19-4043		
	Hydrologic Technicians;	19-4041	19-4044		
	Nuclear Technicians	19-4051	19-4051		
Farmers, Ranchers, and Other Agricultural Managers	Farmers, Ranchers, and Other Agricultural Managers	11-9013	11-9013		119013

PUMS Occupation Title	Middle-Skill STEM Occupation Title	2010 SOC Code	2018 SOC Code	2018 SOC Codes included in PUMS Occupation	2018 PUMS Occupation Code
First-Line Supervisors of Farming, Fishing, and Forestry Workers	First-Line Supervisors of Farming, Fishing, and Forestry Workers	45-1011	45-1011		451011
First-Line Supervisors of Food Preparation and Serving Workers	First-Line Supervisors of Food Preparation and Serving Workers	35-1012	35-1012		351012
Food Batchmakers	Food Batchmakers	51-3092	51-3092		513092
Forest and Conservation Workers	Forest and Conservation Workers	45-4011	45-4011		454011
Hazardous Materials Removal Workers	Hazardous Materials Removal Workers	47-4041	47-4041		474041
Licensed Practical and Licensed Vocational Nurses	Licensed Practical and Licensed Vocational Nurses	29-2061	29-2061		292061
Logging Workers	Fallers;	45-4021	45-4021	45-4021: Fallers; 45-4022: Logging Equipment Operators; 45-4023: Log Graders and Scalers; 45-4029: Logging Workers, All Other	454020
	Logging Equipment Operators;	45-4022	45-4022		
	Log Graders and Scalers	45-4023	45-4023		
Magnetic Resonance Imaging Technologists	Magnetic Resonance Imaging Technologists	29-2035	29-2035		292035
Medical Assistants	Medical Assistants	31-9092	31-9092		319092
Medical Records Specialists	Medical Records Specialists	29-2071	29-2072		292072
Millwrights	Millwrights	49-9044	49-9044		499044
Miscellaneous Health Technologists and Technicians	Hearing Aid Specialists;	29-2092	29-2092	29-2091: Orthotists and Prosthetists; 29-2092: Hearing Aid Specialists; 29-2099: Health Technologists and Technicians, All Other	292090
	Health Technologists and Technicians, All Other	29-2099	29-2099		

PUMS Occupation Title	Middle-Skill STEM Occupation Title	2010 SOC Code	2018 SOC Code	2018 SOC Codes included in PUMS Occupation	2018 PUMS Occupation Code
Miscellaneous Plant and System Operators	Chemical Plant and System Operators;	51-8091	51-8091	51-8091: Chemical Plant and System Operators; 51-8092: Gas Plant Operators; 51-8093: Petroleum Pump System Operators, Refinery Operators, and Gaugers; 51-8099: Plant and System Operators, All Other	518090
	Gas Plant Operators	51-8092	51-8092		
Nuclear Medicine Technologists and Medical Dosimetrists	Nuclear Medicine Technologists	29-2033	29-2033	29-2033: Nuclear Medicine Technologists; 29-2036: Medical Dosimetrists	29203X
Occupational Health and Safety Specialists and Technicians	Occupational Health and Safety Technicians	29-9012	19-5012	19-5011: Occupational Health and Safety Specialists; 19-5012: Occupational Health and Safety Technicians	195010
Occupational Therapy Assistants and Aides	Occupational Therapy Assistants	31-2011	31-2011	31-2011: Occupational Therapy Assistants; 31-2012: Occupational Therapy Aides	312010
Opticians, Dispensing	Opticians, Dispensing	29-2081	29-2081		292081
Other Agricultural Workers	Animal Breeders	45-2021	45-2021	45-2021: Animal Breeders; 45-2091: Agricultural Equipment Operators; 45-2092: Farmworkers and Laborers, Crop, Nursery, and Greenhouse; 45-2093: Farmworkers, Farm, Ranch, and Aquacultural Animals; 45-2099: Agricultural Workers, All Other	4520XX

PUMS Occupation Title	Middle-Skill STEM Occupation Title	2010 SOC Code	2018 SOC Code	2018 SOC Codes included in PUMS Occupation	2018 PUMS Occupation Code
Other Drafters	Electrical and Electronics Drafters;	17-3012	17-3012	17-3012: Electrical and Electronics Drafters; 17-3013: Mechanical Drafters; 17-3019: Drafters, All Other	17301X
	Mechanical Drafters;	17-3013	17-3013		
	Drafters, All Other	17-3019	17-3019		
Other Electrical And Electronic Equipment Mechanics, Installers, and Repairers	Electrical and Electronics Repairers, Commercial and Industrial Equipment	49-2094	49-2094	49-2093: Electrical and Electronics Installers and Repairers, Transportation Equipment; 49-2094: Electrical and Electronics Repairers, Commercial and Industrial Equipment; 49-2095: Electrical and Electronics Repairers, Powerhouse, Substation, and Relay; 49-2096: Electronic Equipment Installers and Repairers, Motor Vehicles	49209X

PUMS Occupation Title	Middle-Skill STEM Occupation Title	2010 SOC Code	2018 SOC Code	PUMS occupation combines the 2018 SOC codes:	2018 PUMS Occupation Code
Other Engineering Technologists and Technicians, Except Drafters	Aerospace Engineering and Operations Technologists and Technicians;	17-3021	17-3021	17-3021: Aerospace Engineering and Operations Technologists and Technicians; 17-3022: Civil Engineering Technologists and Technicians; 17-3024: Electro-Mechanical and Mechatronics Technologists and Technicians; 17-3025: Environmental Engineering Technologists and Technicians; 17-3026: Industrial Engineering Technologists and Technicians; 17-3027: Mechanical Engineering Technologists and Technicians; 17-3028: Calibration Technologists and Technicians; 17-3029: Engineering Technologists and Technicians, Except Drafters, All Other	17302X
	Civil Engineering Technologists and Technicians;	17-3022	17-3022		
	Electro-Mechanical and Mechatronics Technologists and Technicians;	17-3024	17-3024		
	Environmental Engineering Technologists and Technicians;	17-3025	17-3025		
	Industrial Engineering Technologists and Technicians;	17-3026	17-3026		
	Mechanical Engineering Technologists and Technicians;	17-3027	17-3027		
	Engineering Technologists and Technicians, Except Drafters, All Other	17-3029	17-3029		
Other Healthcare Practitioners And Technical Occupations	Healthcare Practitioners and Technical Workers, All Other	29-9099	29-9099	29-9021: Health Information Technologists and Medical Registrars; 29-9091: Athletic Trainers; 29-9092: Genetic Counselors; 29-9093: Surgical Assistants; 29-9099: Healthcare Practitioners and Technical Workers, All Other	299000

PUMS Occupation Title	Middle-Skill STEM Occupation Title	2010 SOC Code	2018 SOC Code	PUMS occupation combines the 2018 SOC codes:	2018 PUMS Occupation Code
Other Installation, Maintenance, And Repair Workers	Wind Turbine Service Technicians	49-9081	49-9081	49-9081: Wind Turbine Service Technicians; 49-9092: Commercial Divers; 49-9095: Manufactured Building and Mobile Home Installers	4990XX
Other Life, Physical, and Social Science Technicians	Forest and Conservation Technicians;	19-4093	19-4071	19-4061 Social Science Research Assistants; 19-4071 Forest and Conservation Technicians; 19-4092: Forensic Science Technicians; 19-4099: Life, Physical, and Social Science Technicians, All Other	1940YY
	Life, Physical, and Social Science Technicians, All Other	19-4099	19-4099		
Other Media and Communication Equipment Workers	Broadcast Technicians;	27-4012	27-4012	27-4011: Audio and Video Technicians; 27-4012: Broadcast Technicians; 27-4014: Sound Engineering Technicians; 27-4015: Lighting Technicians; 27-4099: Media and Communication Equipment Workers, All Other	2740XX
	Sound Engineering Technicians	27-4014	27-4014		
Other Transportation Workers	Traffic Technicians	53-6041	53-6041	53-6011: Bridge and Lock Tenders; 53-6041: Traffic Technicians; 53-6099: Transportation Workers, All Other	5360XX
Pharmacy Technicians	Pharmacy Technicians	29-2052	29-2052		292052
Physical Therapist Assistants and Aides	Physical Therapist Assistants	31-2021	31-2021	31-2021: Physical Therapist Assistants; 31-2022: Physical Therapist Aides	312020

PUMS Occupation Title	Middle-Skill STEM Occupation Title	2010 SOC Code	2018 SOC Code	PUMS occupation combines the 2018 SOC codes:	2018 PUMS Occupation Code
Power Plant Operators, Distributors, and Dispatchers	Nuclear Power Reactor Operators;	51-8011	51-8011	51-8011: Nuclear Power Reactor Operators; 51-8012: Power Distributors and Dispatchers; 51-8013: Power Plant Operators	518010
	Power Plant Operators	51-8013	51-8013		
Precision Instrument and Equipment Repairers	Medical Equipment Repairers	49-9062	49-9062	49-9061: Camera and Photographic Equipment Repairers; 49-9062: Medical Equipment Repairers; 49-9063: Musical Instrument Repairers and Tuners; 49-9064: Watch and Clock Repairers; 49-9069: Precision Instrument and Equipment Repairers, All Other	499060
Prepress Technician and Workers	Prepress Technicians and Workers	51-5111	51-5111		515111
Radiation Therapists	Radiation Therapists	29-1124	29-1124		291124
Radio and Telecommunications Equipment Installers and Repairers	Radio, Cellular, and Tower Equipment Installers and Repairers	49-2021	49-2021	49-2021: Radio, Cellular, and Tower Equipment Installers and Repairers; 49-2022: Telecommunications Equipment Installers and Repairers, Except Line Installers	492020
Radiologic Technologists	Radiologic Technologists and Technicians	29-2034	29-2034		292034
Registered Nurses	Registered Nurses	29-1141	29-1141		291141
Respiratory Therapists	Respiratory Therapists	29-1126	29-1126		291126

PUMS Occupation Title	Middle-Skill STEM Occupation Title	2010 SOC Code	2018 SOC Code	PUMS occupation combines the 2018 SOC codes:	2018 PUMS Occupation Code
Surgical Technologists	Surgical Technologists	29-2055	29-2055		292055
Surveying and Mapping Technicians	Surveying and Mapping Technicians	17-3031	17-3031		173031
Tool and Die Makers	Tool and Die Makers	51-4111	51-4111		514111
Transportation Inspectors	Transportation Inspectors	53-6051	53-6051		536051
Veterinary Technologists and Technicians	Veterinary Technologists and Technicians	29-2056	29-2056		292056
Web Developers	Web Developers	15-1134	15-1254		151254
Welding, Soldering, and Brazing Workers	Welders, Cutters, Solderers, and Brazers	51-4121	51-4121	51-4121: Welders, Cutters, Solderers, and Brazers; 51-4122: Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	514120
	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	51-4122	51-4122		

Texas Workforce Investment Council

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Economic Development and Tourism
Texas Department of Criminal Justice
Texas Education Agency
Texas Health and Human Services Commission
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Texas Juvenile Justice Department
Texas Veterans Commission
Texas Workforce Commission

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Texas Workforce Investment Council
1100 San Jacinto, Suite 1.100
Austin, Texas 78701
https://gov.texas.gov/organization/twic