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About This Report

The Workforce Intelligence Network for Southeast Michigan (WIN) partnership is a collaboration of six Michigan Works! Agencies (MWAs) and ten community colleges across a 16-county region in Michigan. The counties in the WIN partnership include: Genesee, Hillsdale, Huron, Jackson, Lapeer, Lenawee, Livingston, Macomb, Monroe, Oakland, Saint Clair, Sanilac, Shiawassee, Tuscola, Washtenaw, and Wayne, along with the City of Detroit.

This report highlights labor market information and real-time job posting data for the state of Michigan. A workforce overview is provided within identifying key components of the area's labor market including labor force status, demographic, and commuting data. WIN's analysis of online job postings, a proxy for employer demand, is a pioneering method for tracking the health of the labor market. This data is used to provide a real-time demand overview, detailing posting related findings for both employers and job seekers. WIN's data and research team analyzes job posting data at the occupation level within eleven customized occupation groups built using specific Standard Occupational Classification (SOC) codes to provide more contextualized information. Occupation groups combine data for jobs with similar skillsets, educational attainment, and experience requirements, which provides a more in-depth snapshot of the current labor market when compared to traditional industry data based upon North American Industry Classification System (NAICS) codes. Occupation outlook sections utilize these metrics to identify and display the top in-demand jobs, their entry requirements, and their earning potential.

This report analyzes data from 2018 in Michigan and includes summative data for each month of 2018.

For more information pertaining to the labor market in Michigan, the custom occupation groups within this report, or any other workforce-related data projects, please visit www.WINintelligence.org or contact the data and research team directly at research@WINintelligence.org.



State of the Labor Market in the State of Michigan

During 2018, the labor force figures increased in Michigan and employment continued to grow. With this simultaneous rise in both labor force and employment, the number of unemployed individuals decreased in the region. This caused the unemployment rate to drop from the 4.5 percent annual rate in 2017 to a 2018 annual rate of 4.2 percent. Employer demand for most occupation groups analyzed by WIN also increased during Q4 2018. The customer service occupation group reported the highest demand with over 81,000 job postings during the quarter. Other occupation groups also offer great job opportunities for active job seekers: Health care postings grew by 22 percent from Q2 2018, and 24 percent of postings were open to entry-level applicants.

Annual Labor Market Information

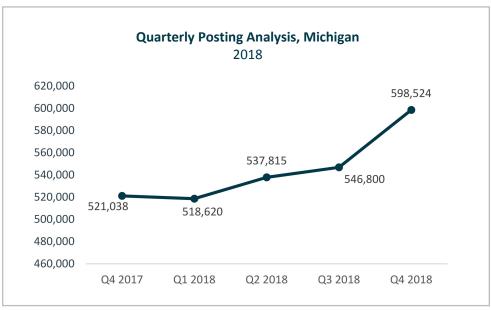
Moving into a ten-year high, the labor force in Michigan rose by 13,831 individuals between 2017 and 2018. Employment also grew by 33,529 workers, between 2017 and 2018. With employment increasing more than the labor force, the unemployment rate fell by 0.4 percentage points from the annual figures in 2017 to a 2018 annual unemployment rate of 4.2 percent in Michigan.

Annual Labor Force, Employment, Unemployment Rate 2010-2018 5,000,000 700.000 4.897.646 4,883,815 4,900,000 4,800,000 4,753,625 4.751.23 4,723,944 4,672,696 500.000 4,700,000 4.657.272 4,685,164 400.000 4,500,000 300,000 4,400,000 4,300,000 200,000 4,198,34 4.200.000 100.000 4,100,000 4.000.000 2010 2011 2013 2014 2015 2017 2018 2012 2016 Labor Force -Employment

Data: BLS | Analysis: Workforce Intelligence Network

Quarterly Employer Demand Overview

Data from 2018, including posting information from each month in the year, showed continued employer demand growth throughout Michigan. There were 77,486 more postings during Q4 2018 compared to the 521,038 postings made during Q4 2017 for a total of 598,524,705 postings. Moving into 2019, employer demand may be even stronger throughout the next year as postings continue to grow.

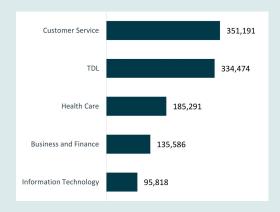


Data: Emsi | Analysis: Workforce Intelligence Network

Employer demand surges with 1,564,981 jobs posted during 2018, with most occupation groups analyzed by WIN experiencing increases in online job postings between 2017 and 2018.

During 2018, there were 1,564,981 jobs posted, 126,875 more than the 1,438,106 jobs posted during 2017 in Michigan. Most of the occupation groups analyzed by WIN experienced an increase in postings during 2018. Online job postings made by employers in the education occupation group were up by 49 percent from 2017. Customer service related postings grew by nearly 65,000 from last year. For more information about Customer Service and Education job postings, see pages 24 and 28.

Top 5 Posting Occupation Groups2018

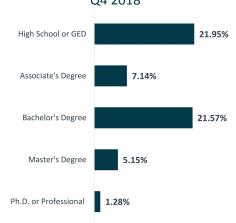


Data: Emsi | Analysis: Workforce Intelligence Network

Job postings made by employers in Michigan indicate a high school diploma or equivalent as the most indemand minimum education level during 2018.

Over a fifth (22.0 percent) of the 343,587 job postings in Michigan indicated the need for candidates with a high school diploma or GED. Another 21.6 percent of these postings were seeking applicants with a bachelor's degree. Higher education attainment tends to lead to more lucrative opportunities, but entry-level opportunities exist for each educational attainment level. As only 57 percent of job postings identified a minimum education level, educational requirements may vary somewhat across all job openings in the state.

Education Levels In-Demand Q4 2018



Data: Emsi | Analysis: Workforce Intelligence Network

The 2018 annual unemployment rate of 4.2 percent in Michigan was down 0.4 percentage points from 2017.

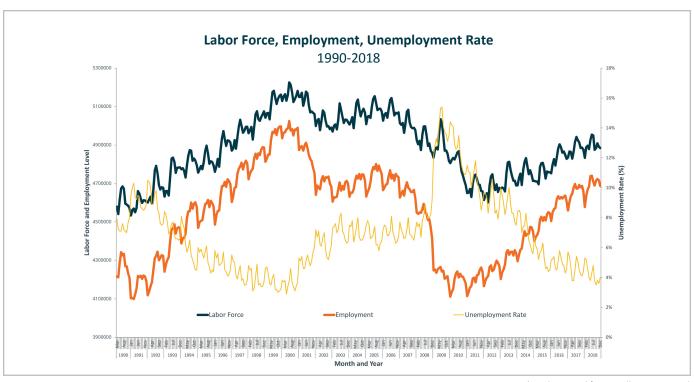
During 2018, both employment and the labor force grew compared to 2017. The growth in labor force participants combined with the even larger growth in employed workers caused the unemployment rate to drop from a 2017 annual rate of 4.6 percent, to a 2018 annual rate of 4.2 percent, as more people found work or started to look for work. The labor force and employment numbers in Michigan reached a nine year high during 2018, with 4,897,646 active labor force participants, 4,690,801 of which were employed. For more information about this year's unemployment rate and other labor market indicators, see page 4.

Annual Labor Market Data

	2017 Annual	2018 Annual	Change from 2017	Percent Change from 2017
Labor Force	4,883,815	4,897,646	13,831	0.3%
Employment	4,657,272	4,690,801	33,529	0.7%
Unemployment	226,543	206,845	-19,698	-8.7%
Unemployment Rate	4.6%	4.2%	-0.4%	na

Note: Monthly data averaged by quarter | Data: BLS

WORKFORCE OVERVIEW State of Michigan | Labor Market Information 2018



 ${\it Data: BLS \mid Analysis: Workforce\ Intelligence\ Network}$

Quarterly Labor Market Data Q4 2017 - Q4 2018

	4th Quarter 2017	1st Quarter 2018	2nd Quarter 2018	3rd Quarter 2018	4th Quarter 2018	Change from 3rd Quarter 2018	Percent Change from 3rd Quarter 2018	Change from 4th Quarter 2017	Percent Change from 4th Quarter 2017
Labor Force	4,882,448	4,860,782	4,919,733	4,903,245	4,894,848	-8,397	-0.2%	12,400	0.3%
Employment	4,675,465	4,606,209	4,721,478	4,705,250	4,709,146	3,896	0.1%	33,682	0.7%
Unemployment	206,983	254,573	198,255	197,995	185,702	-12,293	-6.2%	-21,281	-10.3%
Unemployment Rate	4.2%	5.2%	4.0%	4.0%	3.8%	-0.2%	na	-0.4%	na

Note: Monthly data averaged by quarter | Data: BLS

Labor Force, Employment, and Unemployment

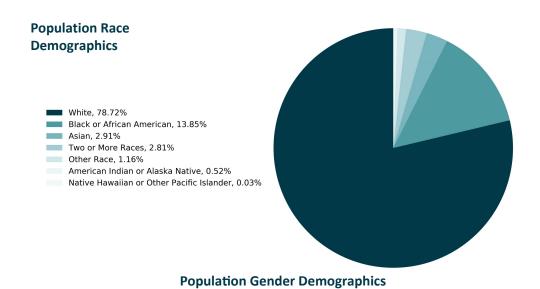
The labor market in Michigan has experienced relative stability since 2010. The labor force increased by 34,06 workers (0.7 percent) between Q1 2018 and Q4 2018. Employment in the state has increased from Q1 2018, by 102,937 workers (2.2 percent). With employment growing more than the labor force, the unemployment rate decreased quarterly: the quarterly unemployment rate decreased by 1.4 percentage points between Q1 2018 and Q4 2018 to 3.8 percent.

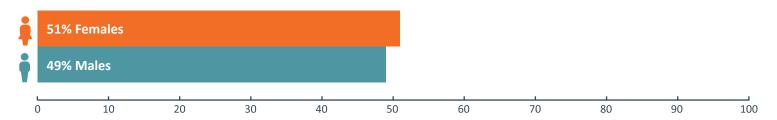
Population Demographics

According to the data from the most recent Census Bureau 2017 ACS Five Year estimates, the population in Michigan increased less than one percent between 2016 and 2017. During 2017, 9,925,568 people were living in the state. The sex of the populace was split almost evenly, with about 51 percent of the population identifying as female, and the other 49 percent identifying as male. The majority of the population identified as white (79 percent) with the second largest number of individuals identifying as black or African American (14 percent). The region as a whole is facing an aging population; 29.8 percent of population was over the age of 55, compared to 18.2 percent under the age of 24.



0.2% Increase from 2016





Population Age Demographics



2017 Labor Force, Employment, and Unemployment Demographics

Civilian Labor Force by Demographic Group									
	Civilian Labor	Total	Total	Unemployment					
Demographic Group	Force	Employment	Unemployment	Rate					
Total Population 16 +	4,887,376	4,528,010	361,666	7.4%					
Sex									
Male 16+	2,550,997	2,353,746	197,251	7.7%					
16-19	112,758	86,721	26,037	23.1%					
20-24	282,738	244,051	38,687	13.7%					
25-54	1,605,014	1,499,231	105,783	6.6%					
55-64	427,524	406,025	21,499	5.0%					
65 Plus	122,963	117,718	5,245	4.3%					
Female 16+	2,335,501	2,171,128	164,373	7.0%					
16-19	118,577	95,103	23,474	19.8%					
20-24	272,787	242,001	30,786	11.3%					
25-54	1,445,803	1,355,161	90,642	6.3%					
55-64	398,361	382,556	15,805	4.0%					
65 Plus	99,973	96,307	3,666	3.7%					
Race									
White	3,946,625	3,709,571	232,851	5.9%					
Black / African									
American	618,674	517,514	100,844	16.3%					
Native American	23,135	20,497	2,637	11.4%					
Asian	148,257	140,613	7,561	5.1%					
Native Hawaiian /									
Pacific Islander	1,571	1,456	83	5.3%					
Some Other Race	55,869	50,700	5,084	9.1%					
Two or More Races	97,346	85,059	12,266	12.6%					
Hispanic	219,532	199,133	20,197	9.2%					

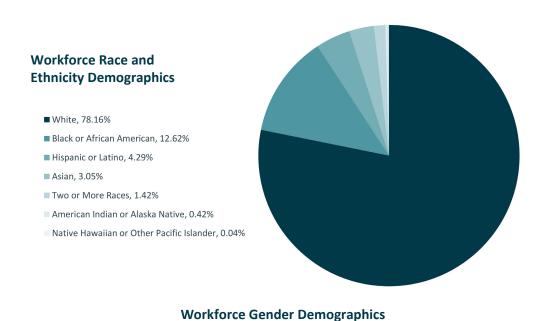
Data: American Community Survey 5-Year Estimates | Analysis: Workforce Intelligence Network

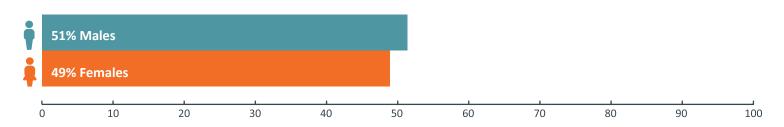
Labor Market Demographics

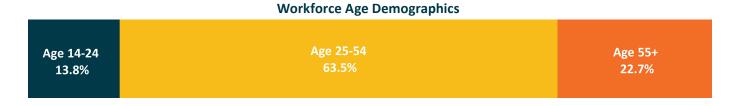
During 2017, the most recent census year, there were about 4.89 million people in the labor force, meaning they were either working or looking for work, in Michigan. Slightly less than half of the population, or 4,887,376 individuals (49.2 percent), living in the state were participating in the labor force. The highest unemployment rates were seen in those aged 24 years old or younger. Males under the age of 19 face an unemployment rate of 23.1 percent. Black or African American job seekers also have a difficult time finding employment, facing an unemployment rate of 16.3 percent.

Current Workforce Demographics

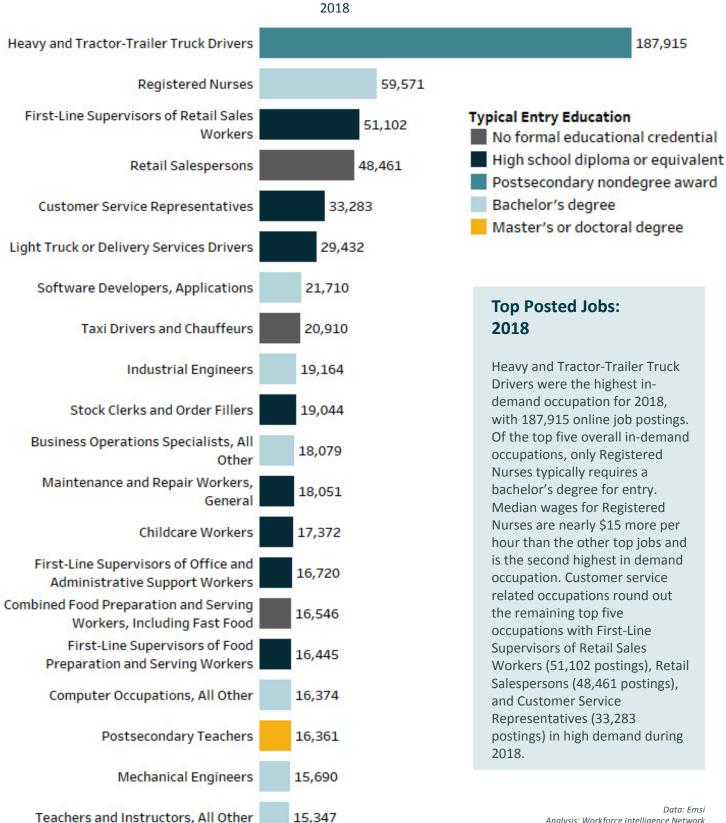
While the Census Bureau data is lagged by about two years, Emsi uses predictive modeling to estimate workforce information for the previous year, allowing for more current analysis. During 2018, there were a total of 4,704,127 individuals working in Michigan. A slight majority (51 percent or 2,414,645 workers) were male, while 49 percent (2,289,481 workers) of the workforce was female. Most of those working in the region were white, accounting for 78.2 percent of the workforce, while African American or black workers accounted for 12.6 percent of the workforce. Those identifying as having a Hispanic or Latino ethnicity accounted for 4.3 percent. Eighty-six percent of the workforce was 25 years or older. Only 14 percent of those under the age of 25 were working, indicating an aging workforce in Michigan.





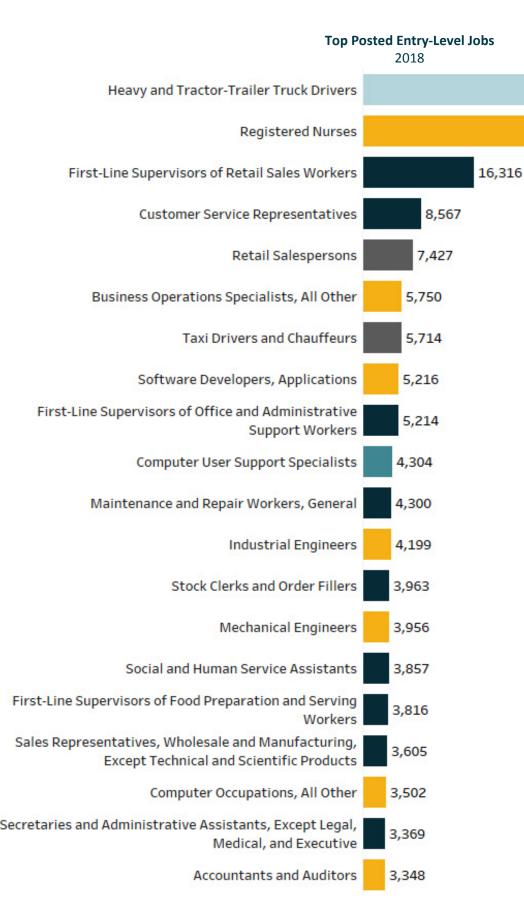


REAL-TIME DEMAND OVERVIEW State of Michigan | Top Posted Jobs | 2018



Top Posted Jobs

REAL-TIME DEMAND OVERVIEW State of Michigan | Top Posted Entry-Level Jobs | Q4 2018



Typical Entry Education

28,155

- No formal educational credential
- High school diploma or equivalent

43,689

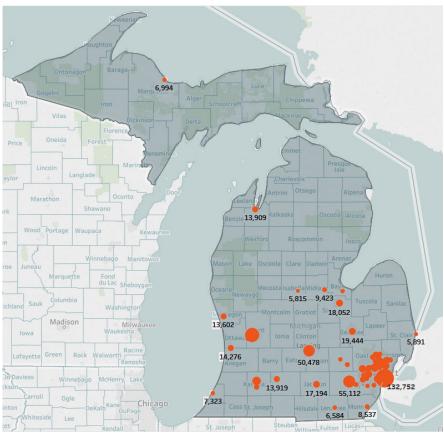
- Some college, no degree
- Postsecondary nondegree award
- Bachelor's degree

Top Posted Entry-Level Jobs: 2018

These entry-level jobs represent the top posted occupations requiring zero to two years of previous work experience. Many of these occupations (45 percent) require at least some training, some college, or an associate degree. Those who enter the workforce with a bachelor's degree can expect entry wages nearly double those with fewer years of education. Heavy and **Tractor-Trailer Truck Drivers** were the top posted entrylevel job with over 43,689 postings in 2018.

REAL-TIME DEMAND OVERVIEW State of Michigan | Job Postings by City | 2018

Job Postings by City 2018



Map based on Longitude (generated) and Latitude (generated). Color shows sum of Postings/ hiring intensity. Size shows sum of Unique Postings (2018). Details are shown for City.

Top In-Demand Qualifications

- Commercial Driver's License (CDL)
- Licensed Practical Nurse
- Certified Nursing Assistant
- Nurse Practitioner
- CompTIA Security+
- Advanced Practice Registered Nurse
- Critical Care Registered Nurse (CCRN)
- CNOR Certification
- Patient Care Technician
- Certified Public Accountant

Top In-Demand Skills

- Merchandising
- Selling Techniques
- Restaurant Operation
- Nursing
- Accounting
- Customer Satisfaction
- Customer Experience
- Purchasing
- Cash Register
- Warehousing

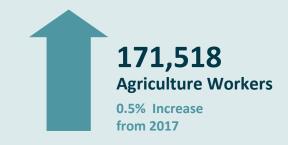
Top Posting Employers*

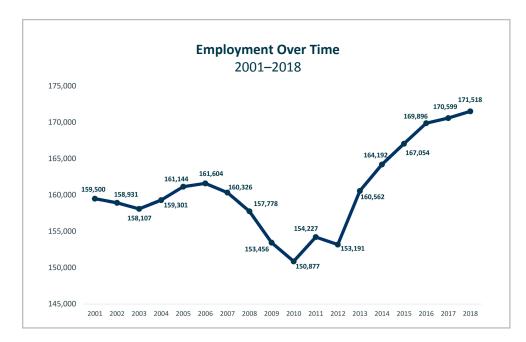
- CRST International, Inc.
- Lyft, Inc.
- C.R. England, Inc.
- Dollar General Corporation
- University of Michigan
- Tutree, Inc.
- McDonald's Corporation
- Henry Ford Health System
- The Home Depot Inc
- Shipt LLC

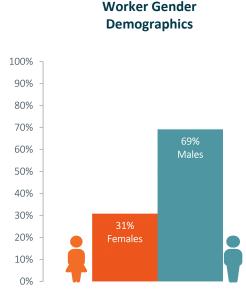
^{*}Employer names are listed as they appear in online job postings.

Introduction

WIN's agriculture occupation group brings together occupations that require knowledge of the farming, livestock, the environment, and natural sciences. Occupations range from Farm Workers, to Environmental Engineers, to Meat Butchers, to Recreation Workers.







Agriculture Worker Demographics

According to the most recent Emsi data set available (2018), the 171,518 workers in the agriculture occupation group are not very diverse. A large majority of workers are white males between the ages of 25 and 54. Only 31 percent of agriculture workers identify as female, and only 14 percent of workers were under the age of 24.

Race and Ethnicity Demographics

80.1% White | 7.6% Black or African American | 2.2% Asian

Worker Age Demographic





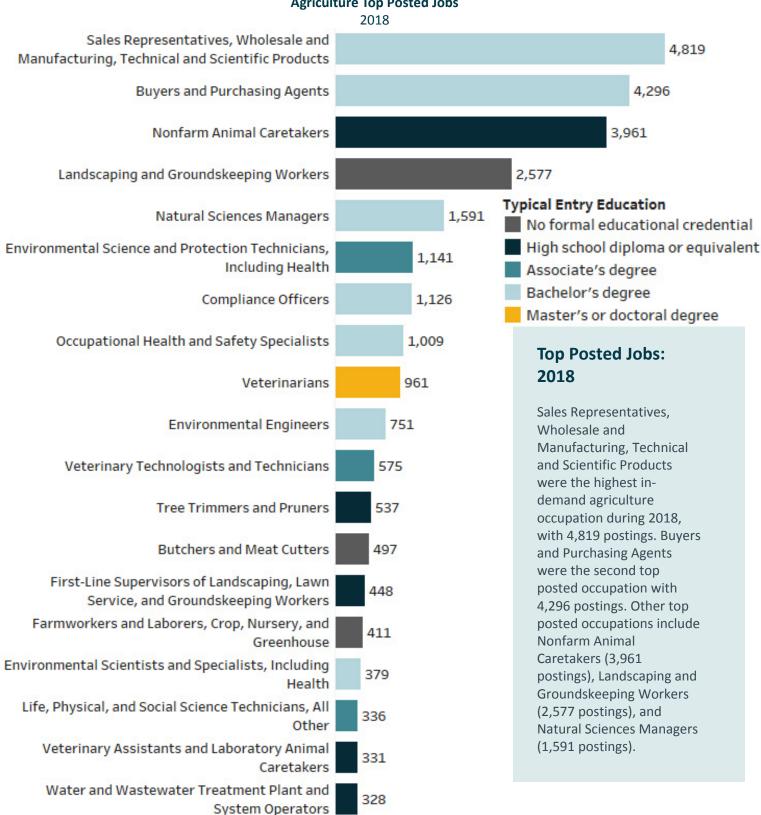


29,029 Agriculture Postings: 4,644 more than in 2017



Bachelors Degree Required for Most Agriculture Jobs





Pest Control Workers

286

Sales Representatives, Manufacturing, Technical and Scientific Products occupation during 2018, with 4,819 postings. Buyers and Purchasing Agents posted occupation with 4,296 postings. Other top posted occupations include postings), Landscaping and **Groundskeeping Workers Natural Sciences Managers**



High Earning Potential for **Natural Science Managers**



In-Demand Agriculture Certification: Vet Tech

Agriculture Wage Overview

Of the top posted agriculture-related jobs, seven of the ten offer median wages of over \$30 per hour according to the Bureau of Labor Statistics (BLS). The top posted job, Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products offers median hourly earnings of \$36.95, which translates to annual earnings of approximately \$77,000.

Wage Overview for Top Posted Agriculture Jobs in 2018

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	\$19.94	\$26.86	\$36.95	\$53.69	\$72.59
13-1028	Buyers and Purchasing Agents	\$17.07	\$22.97	\$29.50	\$39.58	\$52.40
39-2021	Nonfarm Animal Caretakers	\$9.15	\$9.57	\$10.70	\$11.93	\$14.90
37-3011	Landscaping and Groundskeeping Workers	\$9.25	\$9.69	\$11.61	\$14.30	\$18.00
11-9121	Natural Sciences Managers	\$32.30	\$38.50	\$44.24	\$57.90	\$82.77
19-4091	Environmental Science and Protection Technicians, Including Health	\$14.27	\$17.01	\$22.04	\$27.69	\$31.27
13-1041	Compliance Officers	\$20.30	\$26.39	\$33.31	\$42.93	\$47.88
29-9011	Occupational Health and Safety Specialists	\$21.11	\$26.79	\$34.31	\$42.30	\$50.14
29-1131	Veterinarians	\$22.19	\$31.23	\$36.90	\$47.09	\$59.76
17-2081	Environmental Engineers	\$28.95	\$34.97	\$42.37	\$54.10	\$63.13

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills

- Purchasing
- Selling Techniques
- Landscaping
- Procurement
- Veterinary Medicine

- **In-Demand Foundational Skills** Management
 - Communications
 - Sales
 - Operations
 - Leadership

In-Demand Education Level*

• High School Diploma: 18.5% • Associate Degree: 5.6% • Bachelor's Degree: 32.0%

• Master's Degree: 6.8%

*Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent

In-Demand Certifications

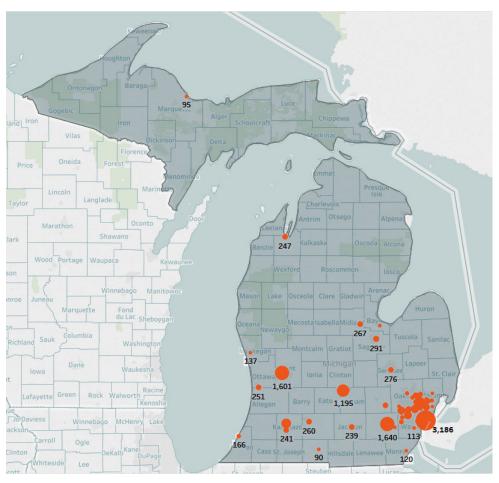
- Commercial Driver's License (CDL)
- Certified Veterinary Technician
- Registered Vascular Technologist
- Licensed Practical Nurse
- Professional Engineer



Top Employers of Agriculture-related Workers: Veterinarian Hospitals



Purchasing Skills are in High Demand



Map based on Longitude (generated) and Latitude (generated). Size shows sum of Unique Postings (2018). Details are shown for City.

Top Posting Employers*

- Rover Inc
- Banfield Pet Hospital
- University of Michigan
- Petsmart, Inc.
- Petco Inc
- Oracle Corporation
- The Pet Sitter
- The Davey Tree Expert Company
- State of Michigan
- Spartannash Company

Job Postings by City

1. Detroit, MI: 3,186 Postings

2. Ann Arbor, MI: 1,640 Postings

3. Grand Rapids, MI: 1,601 Postings

4. Lansing, MI: 1,195 Postings

5. Troy, MI: 1,110 Postings

^{*}Employer names are listed as they appear in online job postings.

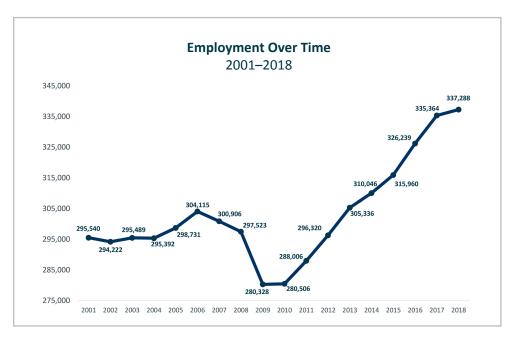


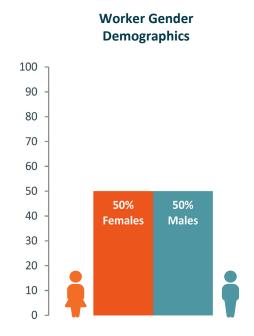
BUSINESS AND FINANCE OCCUPATION GROUP State of Michigan | 2018

Introduction

Jobs in the business and finance occupation group can be found in nearly every type of establishment/firm throughout the region. These workers need strong mathematical and accounting abilities along with project management and planning skills. Workers in this occupation group are in high demand in Michigan.







Business and Finance Worker Demographics

According to the most recent Emsi data set available (2018), the business and finance occupation group is a relatively diverse occupation group, given its over 337,000 workers. Half the working population identify as female (50 percent). The majority of workers (84 percent) identified as white, while Black or African American workers (nine percent) represented the second largest group of workers. Only five percent of the working population is under the age of 25, indicating a large aging population of business and finance workers.

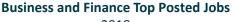




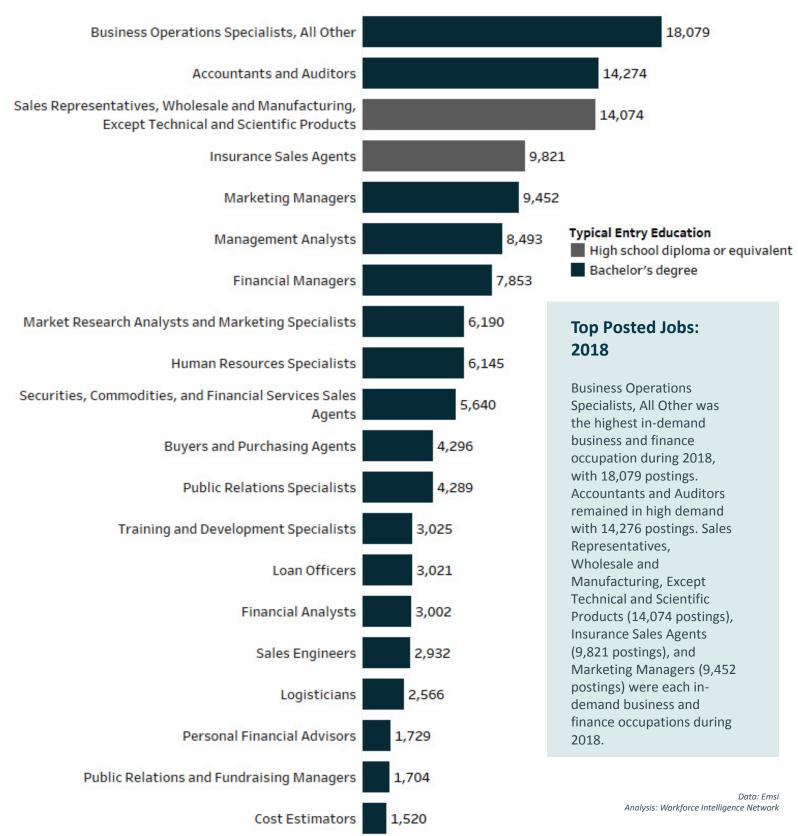


135,586 Business and Finance Postings: 24,375 More than in 2017

Bachelor's Degree Required for Most Business and Finance Jobs











CPA: In-Demand Business and Finance Certification

Business and Finance Wage Overview

Most business and finance related jobs offer high wages, providing a lucrative opportunity for job seekers willing to attain the necessary education. According to the Bureau of Labor Statistics (BLS), the top posted business and finance job, Business Operations Specialists, All Other, offers median hourly wages of \$31.32, translating to annual earnings of approximately \$65,000.

Wage Overview for Top Posted Business and Finance Jobs in 2018

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
13-1199	Business Operations Specialists, All Other	\$17.23	\$22.89	\$31.32	\$40.83	\$52.46
13-2011	Accountants and Auditors	\$20.18	\$24.56	\$30.76	\$40.38	\$54.86
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$13.73	\$19.40	\$28.07	\$42.30	\$58.48
41-3021	Insurance Sales Agents	\$13.15	\$17.61	\$24.21	\$36.02	\$56.05
11-2021	Marketing Managers	\$29.76	\$39.68	\$56.98	\$75.45	\$97.36
13-1111	Management Analysts	\$23.27	\$28.70	\$35.58	\$46.69	\$67.14
11-3031	Financial Managers	\$31.43	\$39.26	\$52.57	\$71.05	\$97.46
13-1161	Market Research Analysts and Marketing Specialists	\$15.63	\$21.27	\$28.94	\$39.58	\$55.16
13-1071	Human Resources Specialists	\$16.98	\$21.41	\$27.33	\$35.59	\$46.06
41-3031	Securities, Commodities, and Financial Services Sales Agents	\$15.40	\$18.09	\$26.44	\$41.94	\$72.98

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills

- Accounting
- Selling Techniques
- Auditing
- Business Development
- Financial Statements

In-Demand Education Level*

High School Diploma: 14.2%
Associate Degree: 5.6%
Bachelor's Degree: 45.2%

• Master's Degree: 10.1%

*Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent

In-Demand Foundational Skills

- Management
- Sales
- Communications
- Customer Service
- Operations

In-Demand Certifications

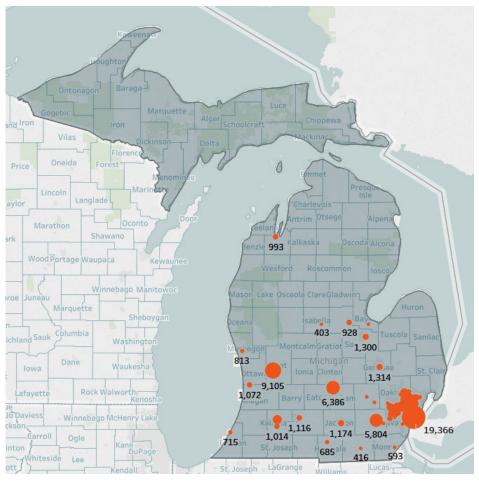
- Certified Public Accountant
- Series 7 General Securities Representative License (Stockbroker)
- Certified Financial Planner
- Certified Internal Auditor
- Series 6 Investment Company And Variable Contracts License (Mutual Funds/Variable Annuities)



Banks and Financial Institutions Seeking Business and Finance Workers



Accounting and Auditing Skills are in High Demand



Map based on Longitude (generated) and Latitude (generated). Size shows sum of Unique Postings (2018). Details are shown for City.

Top Job Posting Employers*

- Robert Half International Inc.
- H&R Block, Inc.
- Huntington Bancshares Incorporated
- Anthem, Inc.
- Co-Alliance, LLP
- Bank of America Corporation
- Deloitte LLP
- State Farm Insurance
- Oracle Corporation
- PNC

*Employer names are listed as they appear in online job postings.

Job Postings by City

- 1. Detroit, MI: 19,366 Postings
- 2. Grand Rapids, MI: 9,105 Postings
- 3. Troy, MI: 2,564 Postings
- 4. Lansing, MI: 6,386
- 5. Ann Arbor, MI: 5,804 Postings

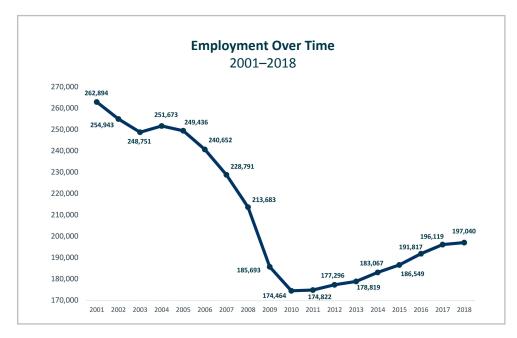
CONSTRUCTION OCCUPATION GROUP State of Michigan | 2018

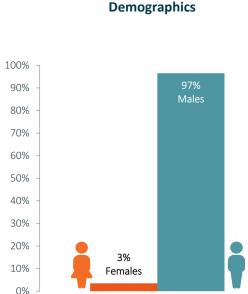
Introduction

Jobs in the WIN construction occupation group are associated with the skilled trades, engineering, management, and planning. Many construction employers are slowly adopting online job search methods, so online job ads may not provide a complete picture of demand for these workers. Even so, it is an important and in-demand occupation group for Michigan and posting data provides a glimpse into employer needs.



Worker Gender





Construction Worker Demographics

According to the most recent Emsi worker demographic data set available (2018), despite having over 197,000 workers, the construction occupation group is not very diverse. A large majority of workers are white males between the ages of 25 and 54. Only three percent of workers identified as female, and only 12 percent identified as a racial minority.

Race and Ethnicity Demographics

87.8% White | 5.3% Black or African American | 0.4% Asian

Worker Age Demographics



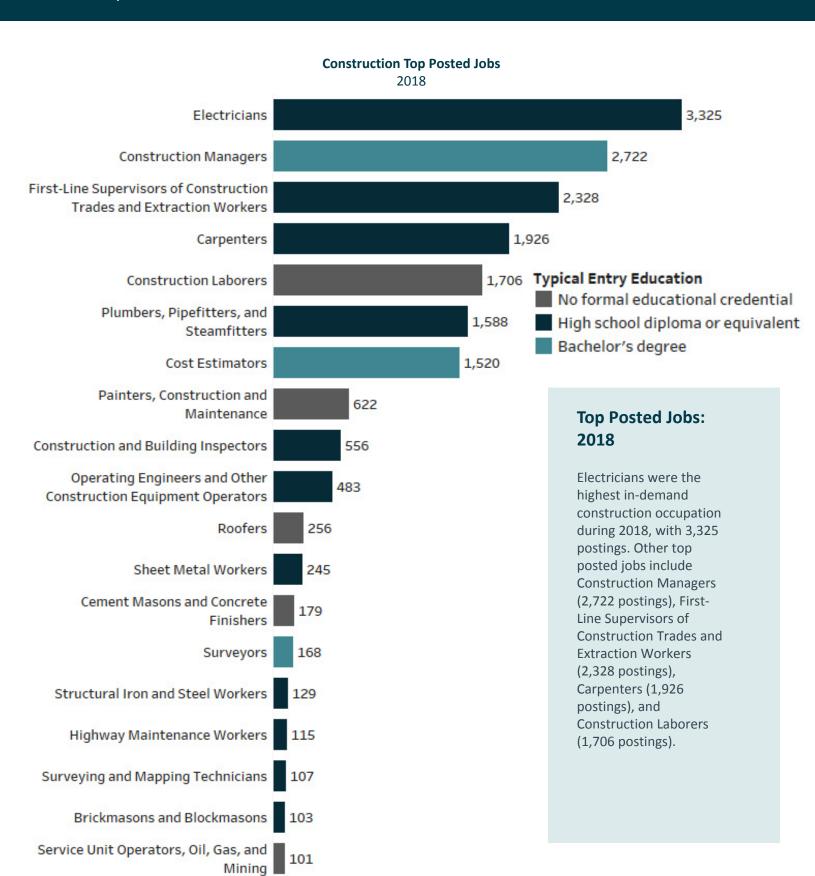




19,040 Construction Postings: 3,479 More than in 2017

Glaziers

Vocational Training Required for Most Construction Jobs









Professional Engineer: In-Demand Construction Certification

Construction Wage Overview

The top posted construction job, Electricians, offers a median wage of \$26.74 per hour or \$55,000 per year. According to the Bureau of Labor Statistics (BLS), those working in management positions or working in apprentice-able occupations can expect higher wage potential, such as Cost Estimators reporting a median wage of \$47.70 per hour or \$99,000 annually.

Wage Overview for Top Posted Construction Jobs in 2018

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
47-2111	Electricians	\$14.11	\$18.03	\$26.74	\$34.81	\$39.31
11-9021	Construction Managers	\$13.72	\$15.45	\$25.20	\$44.72	\$61.82
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$14.93	\$19.48	\$27.12	\$35.60	\$45.08
47-2031	Carpenters	\$12.38	\$13.92	\$16.52	\$24.23	\$31.32
47-2061	Construction Laborers	\$11.13	\$12.52	\$14.56	\$19.53	\$24.83
47-2152	Plumbers, Pipefitters, and Steamfitters	\$15.15	\$18.69	\$29.30	\$35.71	\$38.76
13-1051	Cost Estimators	\$16.36	\$21.06	\$28.73	\$38.40	\$47.70
47-2141	Painters, Construction and Maintenance	\$11.10	\$12.52	\$13.82	\$17.41	\$23.38
47-4011	Construction and Building Inspectors	\$14.63	\$20.64	\$26.89	\$31.69	\$36.78
47-2073	Operating Engineers and Other Construction Equipment Operators	\$15.65	\$18.53	\$23.12	\$28.24	\$32.33

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills

- Construction Management
- Carpentry
- Subcontracting
- Blueprinting
- Profit Sharing

In-Demand Foundational Skills

- Construction
- Management
- Operations
- Communications
- Troubleshooting

In-Demand Education Level*

• High School Diploma: 27.3%

• Associate Degree: 5.4%

Bachelor's Degree: 15.9%

Master's Degree: 1.5%

*Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent

In-Demand Certifications

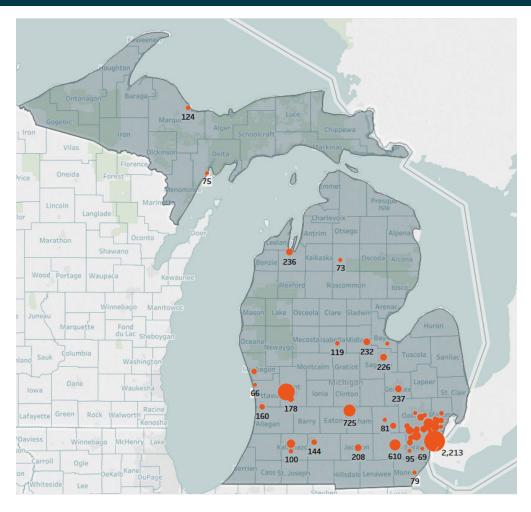
- Commercial Driver's License (CDL)
- Professional Engineer
- Project Management Professional (PMP) Certification
- Operator Certification
- Certified Welding Inspector



Entry-Level Electricians Needed Throughout Michigan



Construction Management Skills are in High Demand



Map based on Longitude (generated) and Latitude (generated). Size shows sum of Unique Postings (2018). Details are shown for City.

Top Posting Employers*

- Tradesmen International, Inc
- Homeadvisor, Inc.
- Cybercoders, Inc.
- Trillium Staffing
- Page Michael International Inc
- Aerotek, Inc.
- State of Michigan
- Concrete Placement, Inc.
- The Davey Tree Expert Company
- TEC Group Inc

Job Postings by City

1. Detroit, MI: 2,213 Postings

2. Grand Rapids, MI: 1,450 Postings

3. Lansing, MI: 725 Postings

4. Ann Arbor, MI: 610 Postings

5. Troy, MI: 480 Postings

^{*}Employer names are listed as they appear in online job postings.

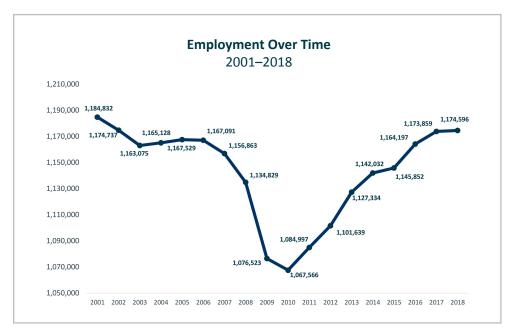


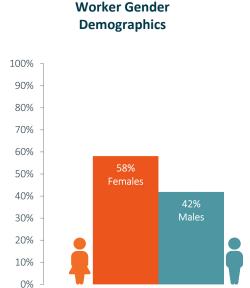
CUSTOMER SERVICE OCCUPATION GROUP State of Michigan | Q4 2018

Introduction

The customer service group is the largest occupation group that WIN analyzes, both in terms of employment and online job postings. This group is of very high importance to the region because it is the first to grow when the economy expands and the first to contract in a downturn: it is often a leading indicator. The large number of postings for this occupation group are due in part to the relatively high worker turnover. As defined by WIN, this group encompasses all customer service occupations, with skills transferrable across the retail sector, the hotel industry, food and beverage service industry, call centers, and other areas. These skills are also transferrable to public-facing positions in many other occupation groups.







Customer Service Worker Demographics

According to the most recent Emsi data set available (2018), with over 1,174,000 workers the customer service occupation group is more diverse than other occupation groups. During 2018, 58 percent of workers identified as female. Twenty-three percent of workers in customer service identified as a racial minority. A quarter of the workforce (25 percent) was under the age of 24, a much higher percentage than in other occupation groups.

Race and Ethnicity Demographics

77.4% White | 13.3% Black or African American | 2.4% Asian

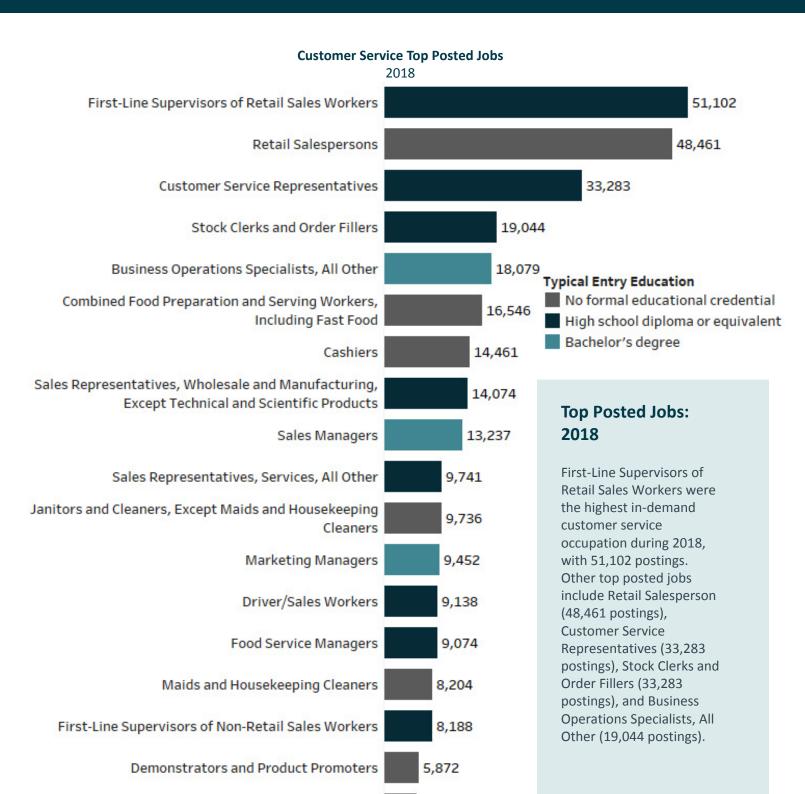
Worker Age Demographics





351,191 Customer Service Postings: 64,885 More than in 2017

High School Diploma Required for Most Customer Service Jobs



5,572

4,819

4,796

Waiters and Waitresses

Tellers

Technical and Scientific Products

Sales Representatives, Wholesale and Manufacturing,



High Earning Potential for Sales Managers



CDL: In-Demand Customer Service Certification

Customer Service Wage Overview

Despite being in high demand, most customer service related occupations offer relatively low wages according to the Bureau of Labor Statistics (BLS). However, six of the top ten posted occupations report median wages over \$15 per hour. The top posted job, First-Line Supervisors of Retail Sales Workers, offers a median hourly wage of \$17.26 or an annual salary of nearly \$36,000.

Wage Overview for Top Posted Customer Service Jobs in 2018

	Wage Overview for Top Posted Customer Service Jobs in 2018								
Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages			
41-1011	First-Line Supervisors of Retail Sales Workers	\$12.03	\$14.04	\$17.26	\$23.16	\$31.08			
41-2031	Retail Salespersons	\$9.05	\$9.30	\$10.65	\$13.59	\$18.25			
43-4051	Customer Service Representatives	\$9.94	\$12.38	\$15.60	\$20.04	\$26.35			
43-5081	Stock Clerks and Order Fillers	\$9.16	\$9.60	\$11.25	\$14.77	\$18.69			
13-1199	Business Operations Specialists, All Other	\$17.23	\$22.89	\$31.32	\$40.83	\$52.46			
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	\$9.00	\$9.14	\$9.43	\$10.46	\$12.12			
41-2011	Cashiers	\$9.01	\$9.18	\$9.60	\$11.41	\$14.00			
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$13.73	\$19.40	\$28.07	\$42.30	\$58.48			
11-2022	Sales Managers	\$30.41	\$42.32	\$59.25	\$76.17	\$110.82			
41-3099	Sales Representatives, Services, All Other	\$11.89	\$17.40	\$24.50	\$36.20	\$51.68			

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills

- Merchandising
- Selling Techniques
- Cash Register
- Restaurant Operation
- Customer Experience

In-Demand Education Level*

High School Diploma: 33.4%Associate Degree: 4.7%Bachelor's Degree: 14.7%

• Master's Degree: 2.0%

*Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent

In-Demand Foundational Skills

- Sales
- Customer Service
- Management
- Communications
- Operations

In-Demand Certifications

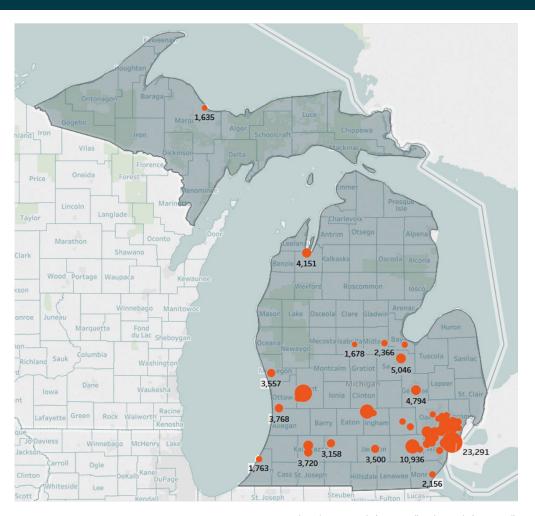
- Commercial Driver's License (CDL)
- National Healthcareer Association (NHA)
 Certified
- Licensed Practical Nurse
- CompTIA Security+
- Transportation Worker Identification Credential (TWIC) Card



Retail Stores and Restaurants in Need of Customer Service Workers



are in High Demand



Map based on Longitude (generated) and Latitude (generated). Size shows sum of Unique Postings (2018). Details are shown for City.

Top Posting Employers*

- Dollar General Corporation
- McDonald's Corporation
- The Home Depot Inc
- Meijer, Inc.
- H&R Block, Inc.
- Shipt LLC
- CVS Health Corporation
- Family Dollar Stores, Inc.
- Target Corporation
- The Kroger Co

*Employer names are listed as they appear in online job postings.

Job Postings by City

1. Detroit, MI: 23,291 Postings

2. Grand Rapids, MI: 16,243 Postings

3. Ann Arbor, MI: 10,936 Postings

4. Troy, MI: 10,750 Postings

5. Lansing, MI: 10,392 Postings

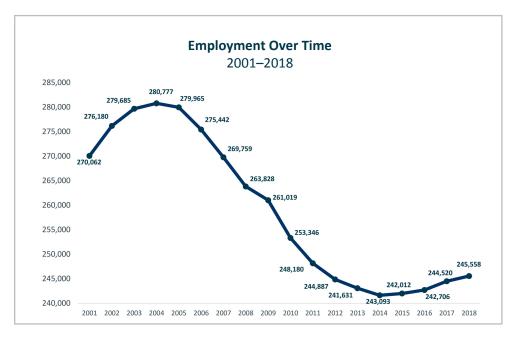


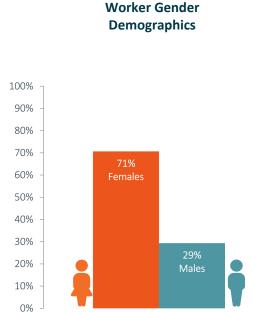
EDUCATION OCCUPATION GROUP State of Michigan | 2018

Introduction

Education-related jobs can be found both in the private and public sectors. Teachers and other education related workers are employed in public schools, private schools, and training institutions. Jobs in the education occupation group require a variety of skills and credentials dependent on the target age group and topic area for the educator. From elementary school teachers to college professors, educators are the backbone of training the future workforce.







Education Worker Demographics

According to the most recent Emsi data set available (2018), among its 135,000 workers, the education occupation group is composed primarily of white females between the ages of 25 and 54. Only 30 percent of workers are males, and only 20 percent of workers are of a minority race.

Race and Ethnicity Demographics

81.1% White | 11.1% Black or African American | 3.3% Asian

Worker Age Demographics

Age 14-24 9.2% Age 25-54 63.9% Age 55+ 26.9%

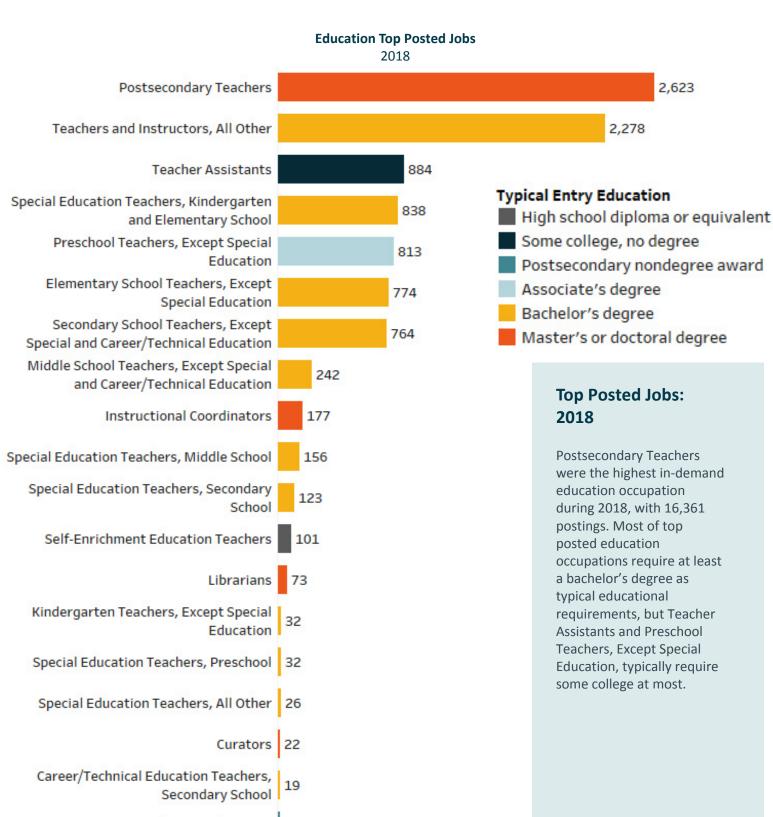


18,573 More than in 2017





Bachelor's Degree Required for Most Education Jobs



Library Technicians | 19

Adult Basic and Secondary Education and

Literacy Teachers and Instructors

Top Posted Jobs: 2018

2,623

2,278

Postsecondary Teachers were the highest in-demand education occupation during 2018, with 16,361 postings. Most of top posted education occupations require at least a bachelor's degree as typical educational requirements, but Teacher Assistants and Preschool Teachers, Except Special Education, typically require some college at most.



High Earning Potential for Postsecondary Teachers



Certificate in English Language Teaching to Adults: In-Demand Education Certification

Education Wage Overview

Many education related jobs, particularly permanent positions that require teaching older students, offer competitive median wages with growth potential. These positions provide an excellent opportunity for job seekers willing to attain the necessary credentials and experience. According to the Bureau of Labor Statistics (BLS), six of the ten top posted education jobs offer median wages of over \$30 per hour. The top posted job, Postsecondary Teachers, offers a median wage of \$31.31 hourly, translating to annual earnings of approximately \$65,000.

Wage Overview for Top Posted Education Jobs in 2018

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
25-1099	Postsecondary Teachers	\$14.26	\$21.32	\$32.90	\$48.60	\$63.01
25-3097	Teachers and Instructors, All Other	\$9.97	\$12.45	\$18.52	\$27.23	\$36.88
25-9041	Teacher Assistants	\$9.29	\$10.20	\$12.16	\$14.83	\$17.89
25-2052	Special Education Teachers, Kindergarten and Elementary School	\$18.34	\$24.51	\$31.74	\$38.46	\$45.29
25-2011	Preschool Teachers, Except Special Education	\$9.53	\$10.73	\$13.42	\$18.82	\$24.77
25-2021	Elementary School Teachers, Except Special Education	\$17.29	\$21.68	\$30.76	\$39.10	\$46.66
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	\$17.90	\$23.07	\$31.68	\$39.28	\$46.38
25-2022	Middle School Teachers, Except Special and Career/Technical Education	\$17.92	\$22.75	\$31.17	\$38.83	\$45.43
25-9031	Instructional Coordinators	\$16.14	\$20.65	\$28.62	\$36.87	\$44.38
25-2053	Special Education Teachers, Middle School	\$19.79	\$22.87	\$29.68	\$37.42	\$45.05

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills

- Business Model
- Lesson Planning
- Curriculum Development
- Alternative Education
- Child Development

In-Demand Foundational Skills

- Teaching
- Chinese Language
- Innovation
- Research
- Mentorship

In-Demand Education Level*

High School Diploma: 12.8%
Associate Degree: 23.8%
Bachelor's Degree: 48.5%
Master's Degree: 7.6%

*Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent

In-Demand Certifications

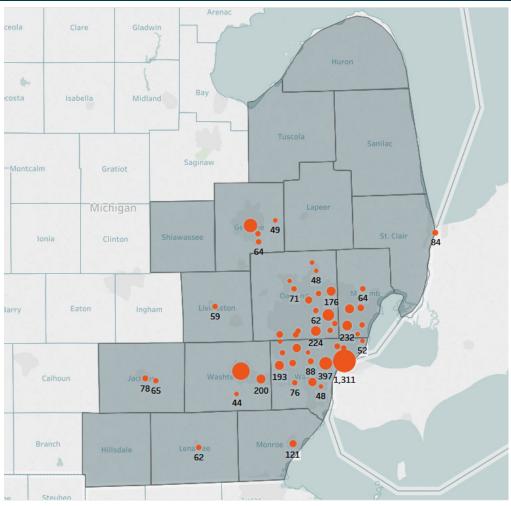
- National Healthcareer Association (NHA) Certified
- Certificate In English Language Teaching To Adults (CELTA)
- Nurse Practitioner
- CompTIA Security+
- National Council Licensure Examination



Child Care and Health Organizations are Top Employers of Education Workers



Lesson Planning and Teaching Skills are in High Demand



Map based on Longitude (generated) and Latitude (generated). Size shows sum of Unique Postings (2018). Details are shown for City.

Top Posting Employers

- Tutree, Inc.
- VIP Kidz LLC
- Qt Kids Inc
- Soliant Health, Inc
- Michigan State University
- University of Michigan
- Learning Care Group, Inc.
- Ef Education First, Inc.
- Sunbelt Staffing, LLC
- C.R. England, Inc.

*Employer names are listed as they appear in online job postings.

Job Postings by City

1. Detroit, MI: 3,700 Postings

2. Ann Arbor, MI: 2,066 Postings

3. Grand Rapids, MI: 1,857 Postings

4. East Lansing, MI: 1,517 Postings

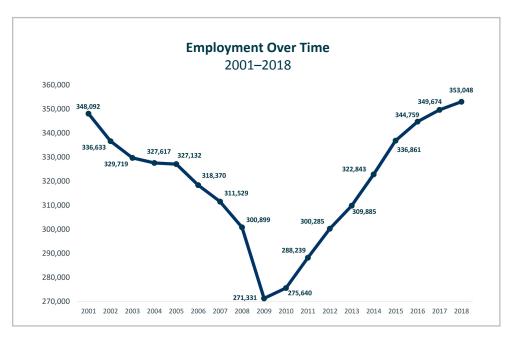
4. Last Lansing, IVII. 1,517 FOSting

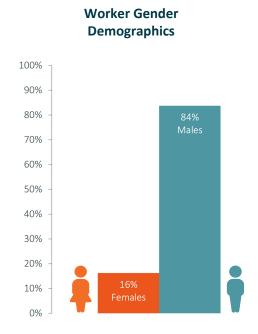
5. Lansing, MI: 1,341 Postings

Introduction

Energy-related occupations encompass jobs in engineering, science, mining, and extraction. Workers in this field have a range of skills all related to keeping businesses and homes powered. Energy companies employ workers in a variety of occupations, many of which are also included in other WIN occupation groups. Data referenced in this section pertain only to job postings from energy-related businesses.





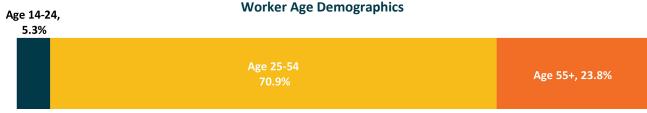


Energy Worker Demographics

According to the most recent Emsi data set available (2018), the over 350,000 workers in the energy occupation group are primarily white males between the ages of 25 and 54, with 16 percent of workers identifying as female and just 16 percent identifying as a racial minority. Only five percent of the workers in the occupation group are under the age of 24, indicating that the energy field faces a particular threat from the region's aging workforce.

Race and Ethnicity Demographics

83.8% White | 7.6% Black or African American | 4.2% Asian





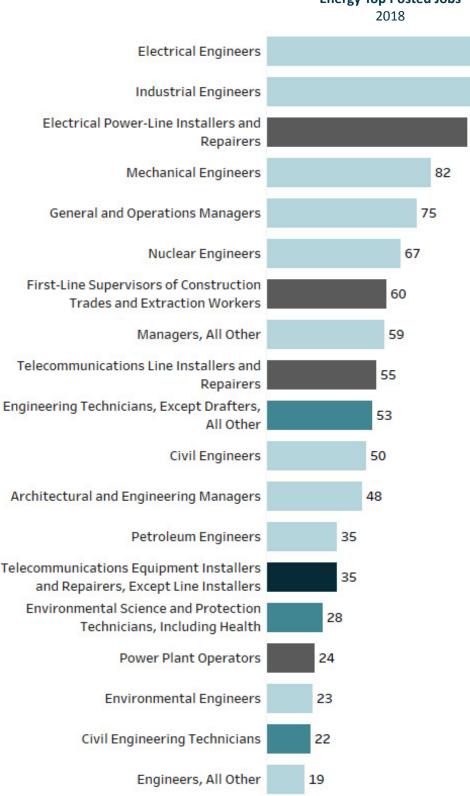
1,407 Energy Postings: 293 More than in 2017



Bachelors Degree Required for Most Energy Jobs

Energy Top Posted Jobs

100



Industrial Engineering Technicians

16

Top Posted Jobs: 2018

164

High school diploma or equivalent

Postsecondary nondegree award

Typical Entry Education

Associate's degree

Bachelor's degree

192

Electrical Engineers took the top spot as the highest indemand energy occupation during Q4 2018, with 49 postings. Industrial Engineers which held the top spot last quarter fell into the second position with 40 postings. Other top posted jobs include Mechanical Engineers (31 postings), First-Line Supervisors of Construction Trades and Extraction Workers (15 postings), and Architectural and Engineering Managers (14 postings).



High Earning Potential for General and Operations Managers



Professional Engineering Certification: Most In-Demand Energy Certification

Energy Wage Overview

The high demand for engineers in the energy field creates lucrative opportunities for job seekers willing to achieve the minimum educational requirements related to these jobs. According to the Bureau of Labor Statistics (BLS), one of the top posted energy job, General Operations Managers, offers a median hourly wage of \$48.86, or annual earnings of approximately \$102,000. Technician and construction-focused positions generally have shorter term educational requirements than engineers and pay somewhat higher than similar occupations in other industries.

Wage Overview for Top Posted Energy Jobs in 2018

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
17-2071	Electrical Engineers	\$26.89	\$33.32	\$41.32	\$50.09	\$60.63
17-2112	Industrial Engineers	\$27.46	\$33.72	\$41.83	\$50.76	\$60.19
49-9051	Electrical Power-Line Installers and Repairers	\$17.21	\$28.96	\$36.97	\$44.52	\$48.77
17-2141	Mechanical Engineers	\$26.86	\$33.64	\$42.44	\$52.48	\$62.10
11-1021	General and Operations Managers	\$22.18	\$32.47	\$48.86	\$74.00	\$101.14
17-2161	Nuclear Engineers	\$35.26	\$41.06	\$46.23	\$53.15	\$60.28
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$14.93	\$19.48	\$27.12	\$35.60	\$45.08
11-9199	Managers, All Other	\$13.38	\$15.45	\$19.60	\$41.51	\$59.98
49-9052	Telecommunications Line Installers and Repairers	\$13.17	\$16.51	\$21.93	\$28.62	\$36.31
17-3029	Engineering Technicians, Except Drafters, All Other	\$16.41	\$20.38	\$27.65	\$36.22	\$43.96

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills

- Customer Satisfaction
- Engineering Design Process
- Electric Power Distribution
- Electrical Engineering
- Corrective and Preventive Actions

In-Demand Foundational Skills

- Operations
- Management
- Communications
- Leadership
- Problem Solving

In-Demand Education Level*

High School Diploma: 24.7%Associate Degree: 14.1%Bachelor's Degree: 49.9%

Master's Degree: 9.0%

*Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent

In-Demand Certifications

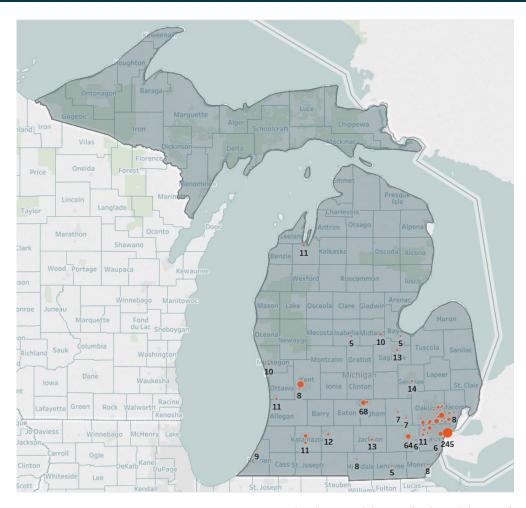
- Professional Engineer
- Commercial Driver's License (CDL)
- Licensed Professional Engineer
- Project Management Professional Certification
- Industry Radiography Radiation Safety Personnel



Utility and Electronic Companies: Top Employers



Engineering Skills are in High Demand



Map based on Longitude (generated) and Latitude (generated). Size shows sum of Unique Postings (2018). Details are shown for City.

Top Posting Employers*

- DTE Energy Company
- CMS Energy Corporation
- Lg Electronics
- Schlumberger Limited
- Acuren Inspection, Inc.
- Henkels & McCoy, Inc.
- ROYAL DUTCH SHELL PLC
- Itc Holdings Corp.
- Entergy Corporation
- Aero Communications, Inc.

Job Postings by City

1. Detroit, MI: 245 Postings

2. Jackson, MI: 103 Postings

3. Newport, MI: 70 Postings

4. Canton, MI: 68 Postings

4. Caritori, Ivii. 00 Fostings

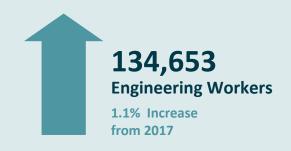
5. Troy, MI: 64 Postings

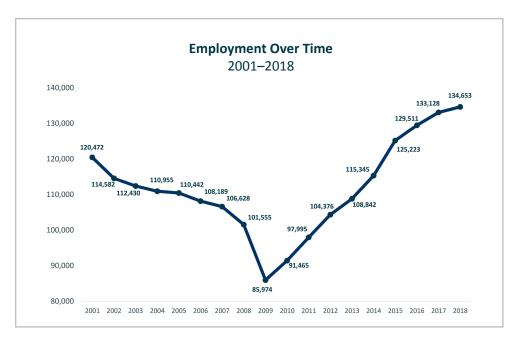
^{*}Employer names are listed as they appear in online job postings.

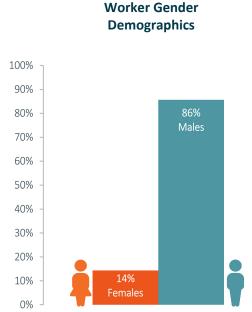
ENGINEERING AND DESIGN OCCUPATION GROUP State of Michigan | 2018

Introduction

Jobs in the manufacturing industry can range from assembly and production, to skilled trades and technicians, designers and engineers, and even computer-related occupations such as software development. Demand for engineers in the region has been consistent, and employment has been growing quickly.







Engineering and Design Worker Demographics

According to the most recent Emsi data set available (2018), the nearly 135,000 workers in the Engineers and Designers group are not particularly diverse. Under six percent of the workforce is under 25, likely due to the consistently high educational requirements. Fourteen percent of current workers are female, and only 18 percent identify as a race other than white; as the labor force overall continues to change, this is one field that could benefit from seeking more diverse talent.

Race and Ethnicity Demographics

82.3% White | 6.3% Black or African American | 7.7% Asian

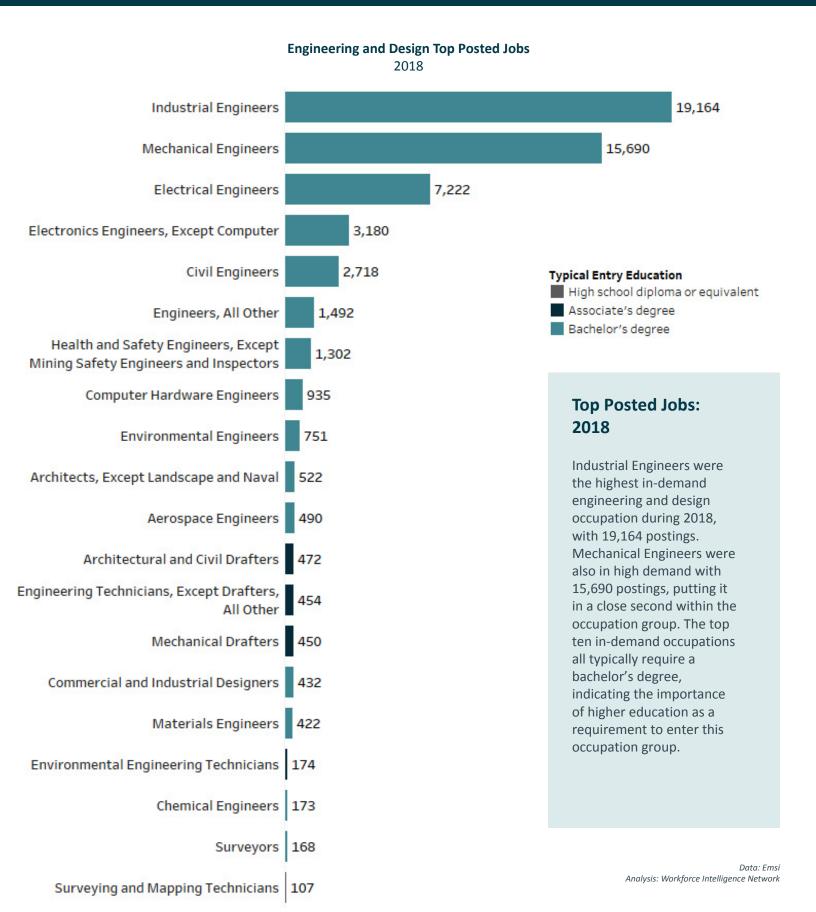






56,829 Engineering and Design Postings: 2,151 More than in 2017

Bachelor's Degree Required for Most Engineering and Design Jobs





High Earning Potential for Engineers, All Other



Professional Engineer: Most In-Demand Engineering and Design Certification

Engineering and Design Wage Overview

Most engineering and design related jobs offer high wages, providing a lucrative opportunity to job seekers willing to meet the minimum education requirements related to these jobs. The top posted engineering and design job, Industrial Engineers, offers a median hourly wage of \$41.83, or an annual salary of approximately \$87,000 according to the Bureau of Labor Statistics (BLS).

Wage Overview for Top Posted Engineering and Design Jobs in 2018

		•	•	•		
Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
17-2112	Industrial Engineers	\$27.46	\$33.72	\$41.83	\$50.76	\$60.19
17-2141	Mechanical Engineers	\$26.86	\$33.64	\$42.44	\$52.48	\$62.10
17-2071	Electrical Engineers	\$26.89	\$33.32	\$41.32	\$50.09	\$60.63
17-2072	Electronics Engineers, Except Computer	\$25.32	\$31.65	\$38.79	\$46.78	\$55.42
17-2051	Civil Engineers	\$25.47	\$29.74	\$36.31	\$44.22	\$55.04
17-2199	Engineers, All Other	\$23.73	\$33.42	\$43.17	\$54.60	\$63.97
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	\$25.99	\$29.12	\$41.54	\$52.61	\$62.14
17-2061	Computer Hardware Engineers	\$27.77	\$36.56	\$46.56	\$56.59	\$64.64
17-2081	Environmental Engineers	\$28.95	\$34.97	\$42.37	\$54.10	\$63.13
17-1011	Architects, Except Landscape and Naval	\$21.93	\$26.75	\$32.09	\$40.64	\$49.32

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills

- Mechanical Engineering
- Electrical Engineering
- Engineering Mathematics
- Engineering Education
- Continuous Improvement Process

In-Demand Foundational Skills

- Management
- Communications
- Operations
- Problem Solving
- Leadership

In-Demand Education Level*

High School Diploma: 5.3%
Associate Degree: 7.4%
Bachelor's Degree: 65.2%
Master's Degree: 13.0%

*Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent

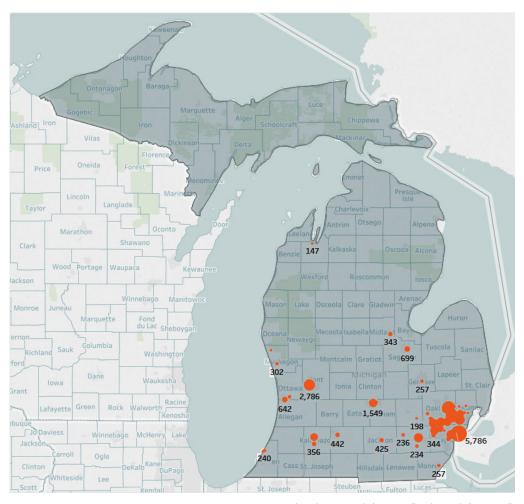
- Professional Engineer
- Certified Quality Engineer
- Licensed Professional Engineer
- Drug Recognition Expert
- American Society For Quality (ASQ) Certified



Automakers and Manufactures are Top Employers of Engineers



Mechanical Engineering Skills are in High Demand



Map based on Longitude (generated) and Latitude (generated). Size shows sum of Unique Postings (2018). Details are shown for City.

Top Posting Employers*

- General Motors Company
- FCA US LLC
- Cybercoders, Inc.
- ALTAIR ENGINEERING, INC.
- Endevis, L.L.c
- Ford Motor Company
- Aerotek, Inc.
- Gtech Services, Inc
- RANDSTAD HOLDING nv
- Trillium Staffing

Job Postings by City

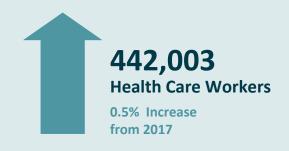
- 1. Detroit, MI: 5,786 Postings
- 2. Troy, MI: 3,707 Postings
- 3. Auburn Hills, MI: 3,562 Postings
- 4. Grand Rapids, MI: 2,786 Postings
- 5. Auburn Heights, MI: 2,734 Postings

^{*}Employer names are listed as they appear in online job postings.

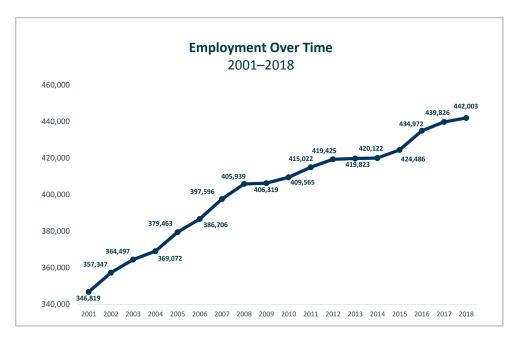
HEALTH CARE OCCUPATION GROUP State of Michigan | 2018

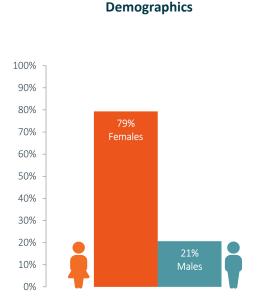
Introduction

WIN's health care occupation group includes jobs related to health care support and practitioners. Employment in this group has been consistently growing, more health care workers needed to care for Michigan's aging population and in response to regulatory and other changes. Registered nurses are routinely the most in-demand job in this group.



Worker Gender





Health Care Worker Demographics

According to the most recent Emsi data set available (2018), the Health Care occupation group employs around 442,003 workers, who are primarily female (79 percent) and between the ages of 25 and 54 (70 percent), although 22 percent of workers are over 55. The group has a similar proportion of racial minorities as the workforce as a whole, with 76 percent of workers identifying as white, 15 percent identifying as black or African American, and nine percent identifying otherwise.

Race and Ethnicity Demographics

757 White | 15.5% Black or African American | 4.3% Asian

Worker Age Demographics







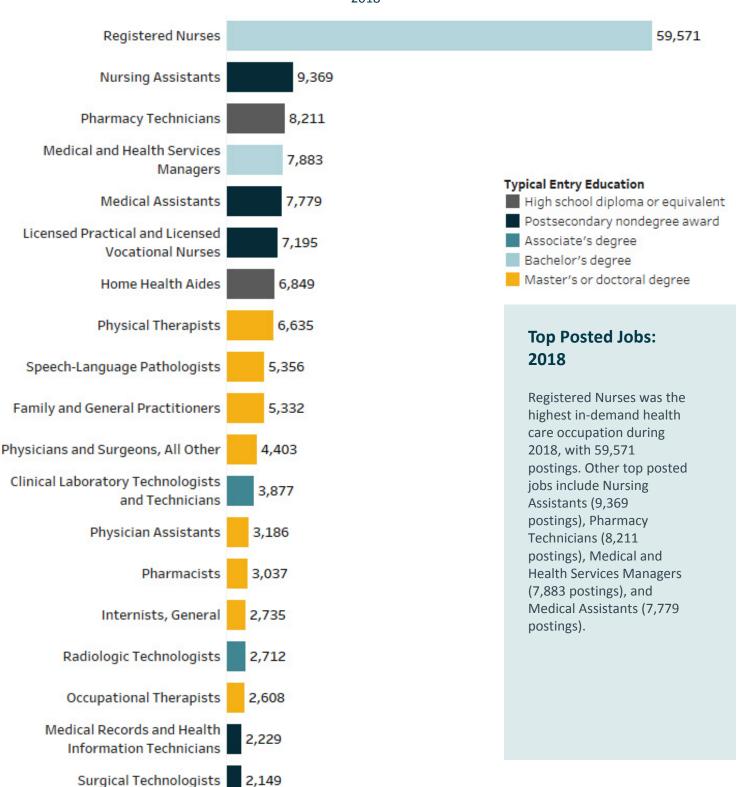
Bachelor's Degree Required for High Paying Health Care Jobs

185,291 Health Care Postings: 2,091 Fewer than in 2017

Nurse Practitioners

2,090

Health Care Top Posted Jobs 2018



Data: Emsi Analysis: Workforce Intelligence Network



High Earning Potential for Family and General Practitioners



Licensed Practical Nurse: Most In-Demand Health Care Certification

Health Care Wage Overview

Wages in the high-demand health care field tend to scale with both education and experience. The health care occupation group offers a relatively broad array of entry requirements and a high volume of jobs are open to candidates with less than a bachelor's degree. These jobs that require less than a bachelor's degree pay close to the state's median household income of \$26.40 per hour or \$52,668 annually. Registered Nurses, the top posted health care job in 2018, offers a median hourly wage of \$32.81 per hour or annual salary of nearly \$68,000 according to the Bureau of Labor Statistics (BLS).

Wage Overview for Top Posted Health Care Jobs in 2018

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
29-1141	Registered Nurses	\$25.14	\$28.10	\$32.81	\$37.50	\$43.24
31-1014	Nursing Assistants	\$10.57	\$12.34	\$13.88	\$15.64	\$18.01
29-2052	Pharmacy Technicians	\$10.17	\$11.94	\$14.76	\$17.85	\$21.49
11-9111	Medical and Health Services Managers	\$26.81	\$34.01	\$44.87	\$59.41	\$93.28
31-9092	Medical Assistants	\$11.46	\$12.97	\$14.69	\$17.16	\$18.98
29-2061	Licensed Practical and Licensed Vocational Nurses	\$16.58	\$19.83	\$22.75	\$26.07	\$29.22
31-1011	Home Health Aides	\$9.10	\$9.43	\$10.48	\$11.99	\$14.18
29-1123	Physical Therapists	\$29.48	\$34.30	\$41.44	\$47.52	\$58.84
29-1127	Speech-Language Pathologists	\$25.61	\$30.34	\$35.99	\$43.30	\$49.78
29-1062	Family and General Practitioners	\$28.75	\$54.12	\$87.22	\$98.37	\$153.51

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills

- Nursing
- Basic Life Support
- Health Sciences
- Nursing Care
- Intensive Care Unit

In-Demand Foundational Skills • Management

- Communications
- Leadership
- Cardiopulmonary Resuscitation
- Operations

In-Demand Education Level*

High School Diploma: 19.3%
Associate Degree: 17.8%
Bachelor's Degree: 21.1%
Master's Degree: 9.4%

*Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent

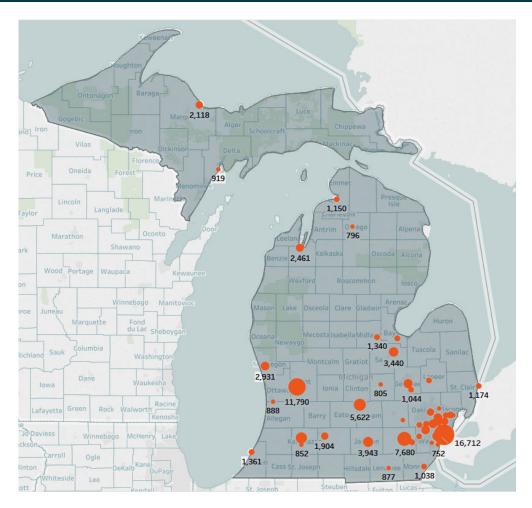
- Licensed Practical Nurse
- Certified Nursing Assistant
- Nurse Practitioner
- Critical Care Registered Nurse (CCRN)
- Advanced Practice Registered Nurse



Hospitals and Pharmacies were Top Employers of Health Care Workers



Nursing and Management Skills are in High Demand



Map based on Longitude (generated) and Latitude (generated). Size shows sum of Unique Postings (2018). Details are shown for City.

Top Posting Employers*

- Henry Ford Health System
- Spectrum Health System
- William Beaumont Hospital
- Ascension Health
- Sunbelt Staffing, LLC
- University of Michigan
- Cross Country Healthcare, Inc.
- Manor Care, Inc.
- HealthTrust Workforce Solutions
- Trinity Health Corporation

*Employer names are listed as they appear in online job postings.

Job Postings by City

1. Detroit, MI: 16,712 Postings

2. Grand Rapids, MI: 11,790 Postings

3. Ann Arbor, MI: 7,680 Postings

4. Lansing, MI: 5,622 Postings

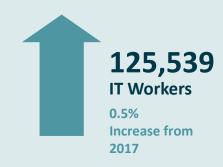
5. Kalamazoo, MI: 4,816 Postings

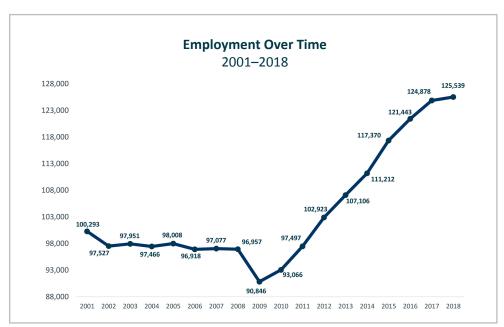


INFORMATION TECHNOLOGY (IT) OCCUPATION GROUP State of Michigan | 2018

Introduction

Information technology (IT) jobs include occupations that are associated with entry-level, technical, and professional careers related to the design, development, support and management of hardware, software, multimedia, and systems integration services. While the information technology group does not currently employ as many individuals as the other groups here, it is quickly growing.





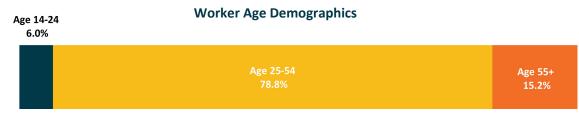


Worker Gender

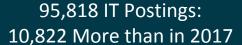
IT Worker Demographics

According to the most recent Emsi data set available (2018), despite having over 125,000 workers, the IT occupation group is not very diverse. A large majority of workers are white males between the ages of 25 and 54. Currently, 73 percent of workers identify as male, and 73 percent identify as white. There are a broad range of organizations providing specialized training resources for female and minority IT workers throughout Michigan. With the push to diversify the IT field, more opportunities are opening for women and minorities.

Race and Ethnicity Demographics 72.6% White | 9.1% Black or African American | 14.4% Asian



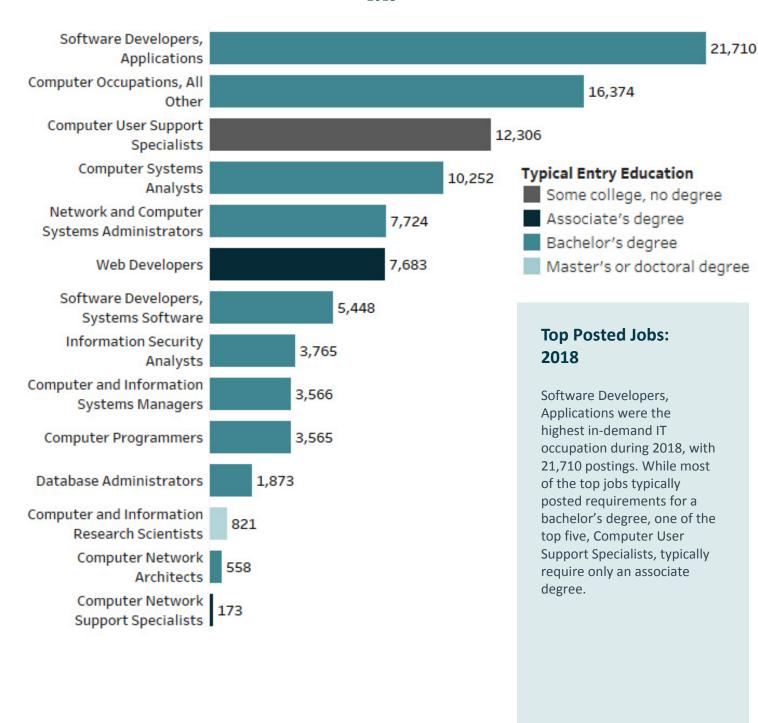






Bachelors Degree Required for Most IT Jobs

Information Technology Top Posted Jobs 2018





High Earning Potential for Computer and Information System Managers



CISSP: Most In-Demand IT Certification

IT Wage Overview

Most IT-related jobs offer high wages providing a lucrative opportunity to job seekers willing to meet the minimum education requirements related to these jobs. Software Developers, Applications, the top posted IT job in 2018, offers a median hourly wage of \$41.96 per hour or approximately \$72,000 per year according to the Bureau of Labor Statistics (BLS).

Wage Overview for Top Posted IT Jobs in 2018

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
15-1132	Software Developers, Applications	\$25.52	\$32.87	\$41.96	\$52.56	\$62.23
15-1199	Computer Occupations, All Other	\$17.56	\$23.96	\$34.40	\$46.45	\$58.16
15-1151	Computer User Support Specialists	\$13.45	\$17.42	\$22.69	\$29.29	\$37.41
15-1121	Computer Systems Analysts	\$24.72	\$30.40	\$39.33	\$48.44	\$59.43
15-1142	Network and Computer Systems Administrators	\$23.14	\$28.45	\$35.76	\$45.04	\$54.17
15-1134	Web Developers	\$15.19	\$17.66	\$25.45	\$35.83	\$44.68
15-1133	Software Developers, Systems Software	\$23.89	\$32.49	\$41.92	\$51.44	\$62.00
15-1122	Information Security Analysts	\$26.93	\$33.36	\$44.31	\$56.20	\$66.63
11-3021	Computer and Information Systems Managers	\$36.86	\$45.62	\$58.10	\$72.84	\$89.62
15-1131	Computer Programmers	\$21.16	\$25.65	\$32.55	\$41.09	\$48.24

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills

- SOI
- Agile Software Development
- Java
- Software Engineering
- Software Development

In-Demand Education Level*

High School Diploma: 5.4%Associate Degree: 5.4%Bachelor's Degree: 53.0%

• Master's Degree: 11.2%

*Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent

In-Demand Foundational Skills

- Management
- Communications
- Operations
- Information Technology
- Integration

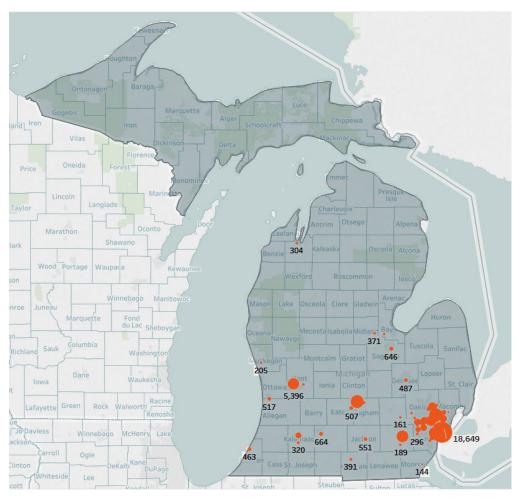
- Certified Information Systems Security Professional (CISSP)
- Cisco Certified Network Associate
- Certified Information Security Manager
- Microsoft Certified Professional
- Microsoft Certified Systems Engineer



Automotive and Tech Companies are Top Employers of IT Workers



Programming Language Skills are in High Demand



Map based on Longitude (generated) and Latitude (generated). Size shows sum of Unique Postings(2018). Details are shown for City.

Top Posting Employers*

- Teksystems, Inc.
- Oracle Corporation
- Virtual Vocations
- Ford Motor Company
- Cybercoders, Inc.
- ACCENTURE, INC.
- Anthem, Inc.
- General Motors Company
- Hire It People, LLC
- Robert Half International

Inc.

Job Postings by City

1. Detroit, MI: 18,649 Postings

2. Troy, MI: 7,486 Postings

3. Lansing, MI: 7,002 Postings

4. Ann Arbor, MI: 5,763 Postings

5. Dearborn, MI: 5,454 Postings

 $^{{\}it *Employer names are listed as they appear in online job postings}.$



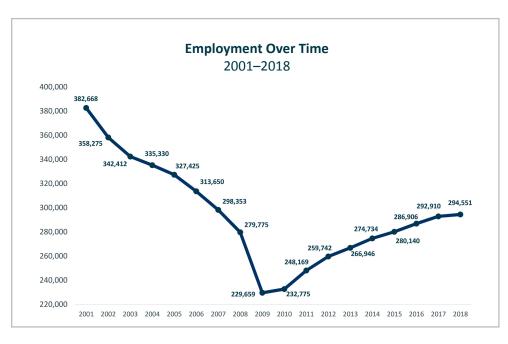
SKILLED TRADES AND TECHNICIANS (MANUFACTURING) OCCUPATION GROUP State of Michigan | 2018

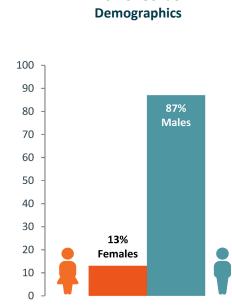
Introduction

WIN's technicians/skilled trades category includes jobs related to advanced manufacturing. Michigan has more demand for skilled- trades labor, such as CNC machinists and welders, than almost anywhere else in the country.

NOTE: Skilled trades related to construction and assembly are not included in this cluster, as the focus is on advanced manufacturing only.







Worker Gender

Skilled Trades and Technicians Worker Demographics

According to the most recent Emsi data set available (2018), the Skilled Trades occupation group employs about 295,000 workers in Michigan. A majority of workers are white males between the ages of 25 and 54. Additional outreach may be necessary in the near future, as at 25 percent, the group has a somewhat higher proportion than average of workers over age 55.

Race and Ethnicity Demographics

82.4% White | 9.6% Black or African American | 2.1% Asian

Worker Age Demographics







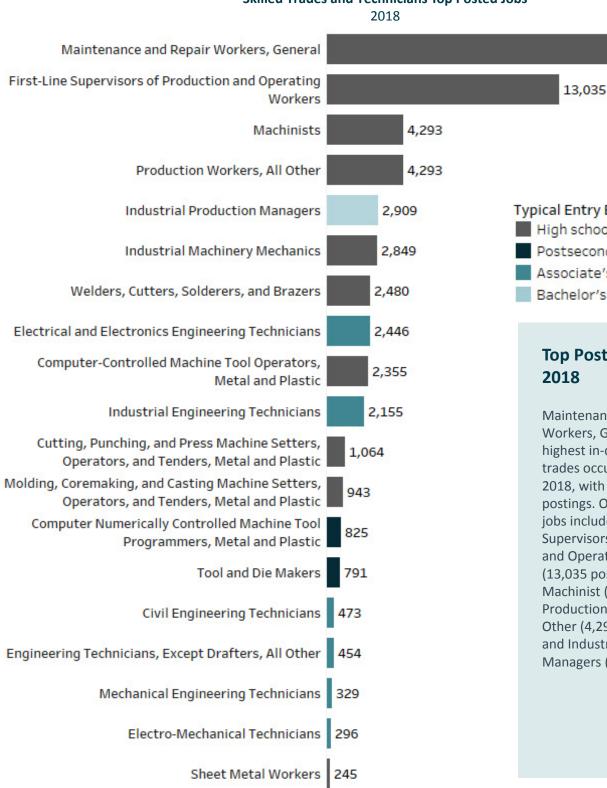
Welding, Soldering, and Brazing Machine Setters,

Operators, and Tenders



Vocational Training Required for Most Skilled Trades Jobs

Skilled Trades and Technicians Top Posted Jobs



Typical Entry Education

High school diploma or equivalent

18,051

- Postsecondary nondegree award
- Associate's degree
- Bachelor's degree

Top Posted Jobs: 2018

Maintenance and Repair Workers, General were the highest in-demand skilled trades occupation during 2018, with 18,051 postings. Other top posted jobs include First-Line Supervisors of Production and Operating Workers (13,035 postings), Machinist (4,293 postings), Production Workers, all Other (4,293 postings), and Industrial Production Managers (2,909 postings).



High Earning Potential for Industrial Production Manager



In-Demand Skilled Trades Certification: American Society for Quality (ASQ) Certified

Skilled Trades and Technicians Wage Overview

Half of the top ten in-demand skilled trades occupations have median wages above \$20 per hour according to the Bureau of Labor Statistics (BLS). Maintenance and Repair Workers, General, the top posted skilled trades job in 2018, offers a median hourly wage of \$16.87, which translates to an annual salary of over \$35,000.

Wage Overview for Top Posted Skilled Trades and Technicians Jobs in 2018

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
49-9071	Maintenance and Repair Workers, General	\$10.28	\$12.88	\$16.87	\$22.29	\$28.07
51-1011	First-Line Supervisors of Production and Operating Workers	\$17.57	\$22.45	\$29.35	\$37.91	\$47.88
51-4041	Machinists	\$12.11	\$15.06	\$19.42	\$24.45	\$29.11
51-9199	Production Workers, All Other	\$9.78	\$12.55	\$17.59	\$21.91	\$33.10
11-3051	Industrial Production Managers	\$31.52	\$40.80	\$53.18	\$67.10	\$82.12
49-9041	Industrial Machinery Mechanics	\$15.37	\$19.19	\$23.99	\$29.84	\$36.59
51-4121	Welders, Cutters, Solderers, and Brazers	\$12.53	\$14.75	\$17.37	\$21.17	\$25.59
17-3023	Electrical and Electronics Engineering Technicians	\$16.89	\$21.45	\$27.86	\$33.18	\$38.54
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	\$12.05	\$14.34	\$18.84	\$23.29	\$28.02
17-3026	Industrial Engineering Technicians	\$16.16	\$19.58	\$23.45	\$29.50	\$36.42

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Technical Skills

- Continuous Improvement Process
- Machining
- HVAC
- Plumbing
- Tooling

In-Demand Education Level*

High School Diploma: 41.4%
Associate Degree: 10.3%
Bachelor's Degree: 12.8%
Master's Degree: 1.3%

*Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent

In-Demand Foundational Skills

- Management
- Operations
- Troubleshooting
- Communications
- Leadership

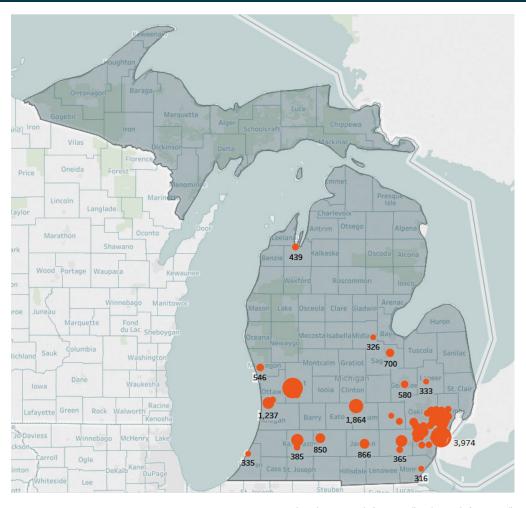
- Commercial Driver's License (CDL)
- Certified Quality Engineer
- American Society for Quality (ASQ) Certified
- Certified Quality Auditor
- Certified Welder



Staffing Agencies and Manufacturers: Top Employers of Skilled Trades Workers



Machining and Management Skills are in High Demand



Map based on Longitude (generated) and Latitude (generated). Size shows sum of Unique Postings (Oct 2018–Dec 2018). Details are shown for City.

Top Posting Employers*

- Aerotek, Inc.
- Kelly Services, Inc.
- Express Services Inc
- Trillium Staffing
- Shipt LLC
- Resource Mfg
- Manpower
- Adecco Group
- Pfizer Inc.
- The Home Depot Inc

*Employer names are listed as they appear in online job postings.

Job Postings by City

1. Detroit, MI: 3,974 Postings

2. Grand Rapids, MI: 3,879 Postings

3. Lansing, MI: 1,864 Postings

4. Troy, MI: 1,420 Postings

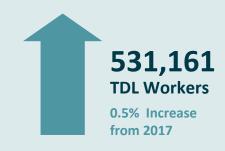
5. Kalamazoo, MI: 1,424 Postings

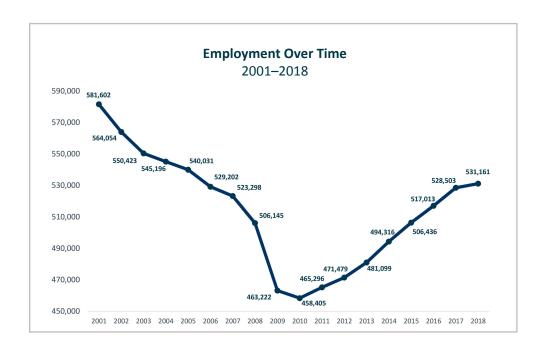


TRANSPORTATION, DISTRIBUTION, AND LOGISTICS (TDL) OCCUPATION GROUP State of Michigan | 2018

Introduction

Transportation, distribution, and logistics (TDL) workers help move materials in an efficient manner, whether it is from one company to another or directly to consumers. Logistics workers range from materials movers to logistics analysts, coordinating and analyzing material and goods movement.







TDL Worker Demographics

According to the most recent Emsi data set available (2018), the TDL occupation group has a large workforce, employing 531,000 individuals. These workers are 74 percent male and 76 percent white. Only 13 percent of the workers in this occupation group are under the age of 24, indicating an aging TDL workforce.

Race and Ethnicity Demographics

75.8% White | 15.6% Black or African American | 1.8% Asian

Worker Age Demographics





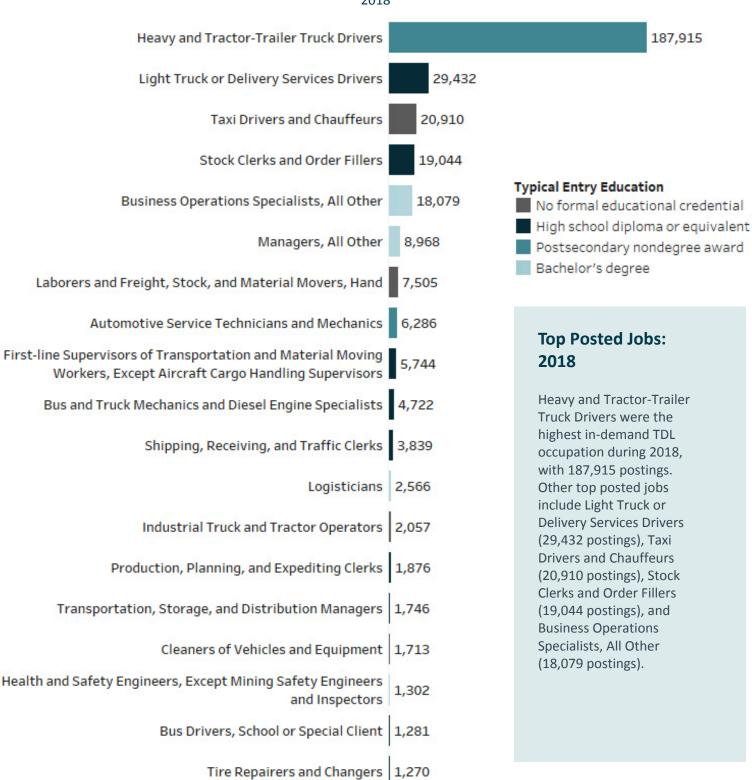
334,474 TDL Postings: 10,505 More than in 2017



High School Diploma Required for Most TDL Jobs

TDL Top Posted Jobs

2018





High Earning Potential for Managers, All Other



CDL: Most In-Demand TDL Certification

TDL Wage Overview

According to the Bureau of Labor Statistics (BLS), three of the top ten in-demand TDL occupations offer median wages of more than \$20 per hour. Heavy and Tractor-Trailer Truck Drivers, the top posted TDL job in 2018, offers a median hourly wage of \$18.80, or an annual salary of nearly \$40,000. Logistics roles that require additional education, such as Business Operations Specialists, typically offer even higher wages.

Wage Overview for Top Posted TDL Jobs in 2018

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$12.65	\$15.66	\$18.80	\$23.04	\$27.87
53-3033	Light Truck or Delivery Services Drivers	\$9.33	\$10.99	\$14.75	\$20.54	\$28.46
53-3041	Taxi Drivers and Chauffeurs	\$8.12	\$9.03	\$9.81	\$12.07	\$15.69
43-5081	Stock Clerks and Order Fillers	\$9.16	\$9.60	\$11.25	\$14.77	\$18.69
13-1199	Business Operations Specialists, All Other	\$17.23	\$22.89	\$31.32	\$40.83	\$52.46
11-9199	Managers, All Other	\$13.38	\$15.45	\$19.60	\$41.51	\$59.98
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$9.53	\$10.83	\$13.39	\$16.73	\$20.12
49-3023	Automotive Service Technicians and Mechanics	\$9.79	\$11.27	\$16.80	\$25.11	\$30.28
53-1048	First-line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$15.20	\$18.87	\$24.82	\$32.44	\$39.39
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	\$13.88	\$16.92	\$20.90	\$24.74	\$29.83

Data: Emsi, BLS | Analysis: Workforce Intelligence Network

In-Demand Foundational Skills

Management

Customer Service

Communications

Operations

Sales

In-Demand Certifications

In-Demand Technical Skills

- Truckload Shipping
- Warehousing
- Merchandising
- Purchasing
- Profit Sharing

- Commercial Driver's License (CDL)
- Transportation Worker Identification Credential (TWIC) Card
- Project Management Professional Certification
- CompTIA Security+
- PMI Certified

In-Demand Education Level*

High School Diploma: 12.2%
Associate Degree: 1.2%
Bachelor's Degree: 4.8%
Master's Degree: 1.0%

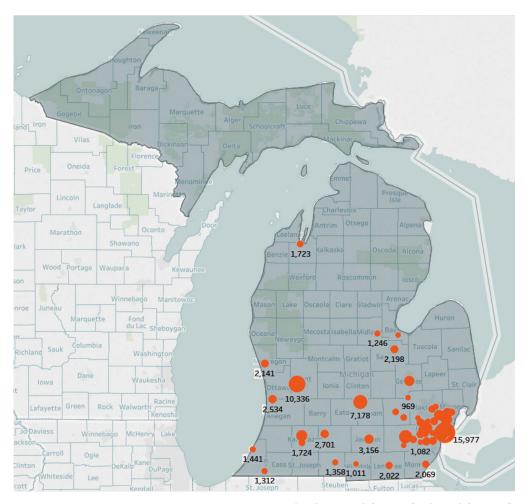
*Not all job postings indicate the required educational attainment level, therefore the percentages found here may not add up to 100 percent



Rideshare Companies and Trucking Fleets are the Top Employers of TDL Workers



Warehousing Skills are in High Demand



Map based on Longitude (generated) and Latitude (generated). Size shows sum of Unique Postings (2018). Details are shown for City.

Top Posting Employers*

- CRST International, Inc.
- Lyft, Inc.
- C.R. England, Inc.
- Uber Technologies, Inc.
- U. S. Xpress, Inc.
- J.B. Hunt Transport Services, Inc.
- Roehl Transport, Inc.
- USA Truck, Inc.
- Barr-Nunn Transportation, Inc.
- Heartland Express, Inc.

Job Postings by City

1. Detroit, MI: 15,977 Postings

2. Grand Rapids, MI: 10,336 Postings

3. Lansing, MI: 7,178 Postings

4. Ann Arbor, MI: 6,372 Postings

5. Warren, MI: 4,774 Postings

^{*}Employer names are listed as they appear in online job postings.

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