WIN

WORKFORCE INTELLIGENCE NETWORK

Research. Engagement. Solutions

LABOR MARKET REPORT
CITY OF DETROIT

Q4 2021
October - December

WIN WORKFORCE INTELLIGENCE NETWORK

About This Report

The Workforce Intelligence Network for Southeast Michigan (WIN) partnership is a collaboration of Michigan Works! Agencies (MWAs) and community colleges across a 19-county region in Michigan. The counties in the WIN partnership include Clinton, Eaton, Genesee, Hillsdale, Huron, Ingham, Jackson, Lapeer, Lenawee, Livingston, Macomb, Monroe, Oakland, St. Clair, Sanilac, Shiawassee, Tuscola, Washtenaw, and Wayne, along with the City of Detroit.

The WIN 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, entry-level requirements, and earning potential.

WIN produces a quarterly 19-county region report using data from all eleven occupation groups. A report focused on the city of Detroit is also produced quarterly, focusing on five occupation groups related to the Detroit labor market. County reports are produced annually and focus on five occupation groups chosen to reflect the labor market specific to the county.

This report highlights labor market information and real-time job posting data for the City of Detroit, including a workforce overview that identifies key components of the area's labor market such as 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 labor market's health. This data is used to provide real-time demand and job posting information for both employers and job seekers. This report analyzes the fourth quarter of 2021 labor market information from the City of Detroit for the Business and Finance, Energy, Healthcare, Information Technology (IT), and Skilled Trades occupation groups.

For more information about the southeast Michigan labor market, custom occupation groups, and workforce-related data projects, please visit www.WINintelligence.org or contact the data and research team directly at research@WINintelligence.org. For more information about jobseeker resources and our partners, please visit www.micareertraining.org.

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ANNUAL STATE OF THE LABOR MARKET

State of the Labor Market in the City of Detroit

The city of Detroit saw growth in both the labor force and overall employment, as the labor market continued to experience major shifts in hiring and skills demanded due to the COVID-19 crisis. Despite this shift in demand, the labor force, employment, and unemployment figures all increased from Q3 to Q4. The number of unemployed workers saw the highest jump, increasing 12.7 percent, with the size of the labor force increasing by 2.6 percent and the number of employed individuals increasing by 1.7 percent. Registered Nurses accounted for 2,939 job postings, coming in as the most in-demand occupation, with Healthcare topping the list of the most in-demand occupation groups in Detroit.

Annual Labor Market Information

Due to the ongoing pandemic and other labor market factors, Detroit's labor force has been in steady decline since 2020, decreasing 8 percent, for a 2021 labor force total of 241,127 workers. Despite a decrease in the number of workers in Detroit, employment has increased by 5.7 percent (11,858) over that same period. After experiencing an unemployment rate peak of 21.2 percent in 2020, Q4 saw a decrease of 11.8 percentage points to a low of 9.4 percent. While large swings in employment and unemployment data are expected as an indicator of economic recovery, the city's shrinking labor force may impact future labor market trends.

Annual Labor Force, Employment, Unemployment Rate 2011–2021
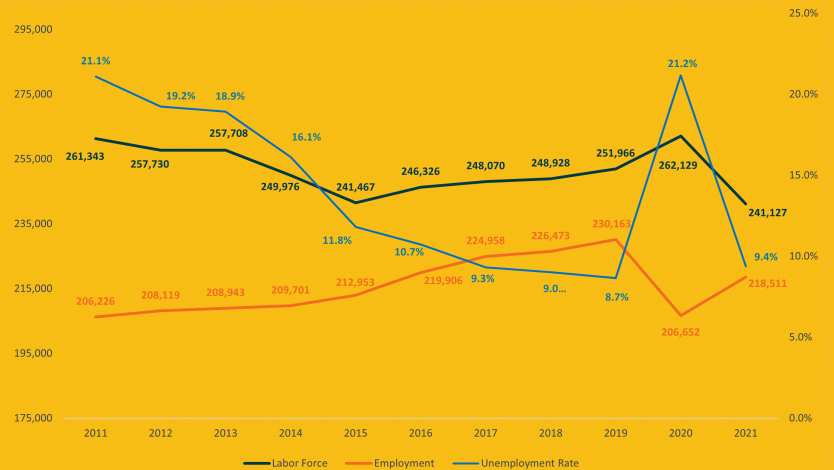
Data: BLS | Analysis: Workforce Intelligence Network

Quarterly Employer Demand Overview

Between Q3 and Q4, employer demand has increased, with an additional 2,377 unique postings for the City of Detroit, for a total of 112,846 postings. November had the highest recorded postings in 2021 with 38,021 postings, a 45 percent increase (11,792 postings) from January 2021. This steady increase in job postings is a positive indicator of economic recovery from the COVID-19 crisis.

Monthly Posting Analysis City of Detroit
Q4 2021 - Q1 2021
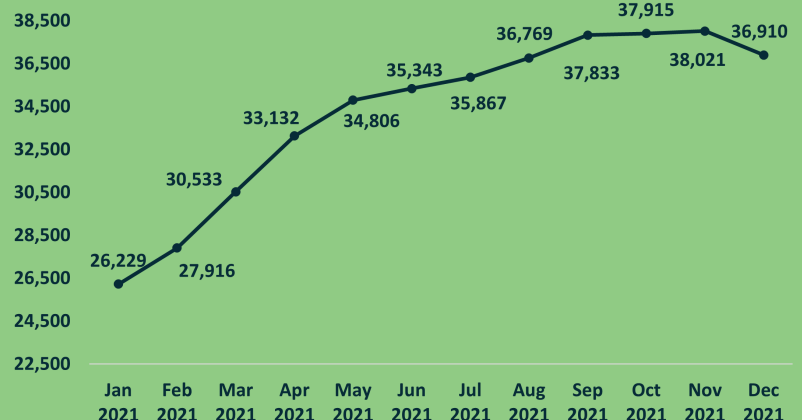
ANNUAL WORKFORCE INDICATORS
Key Findings

1.8% Employer demand increased by 1.8 percent, a gain of 1,068 job postings since Q3.

Bachelor's Degree

Most in-demand minimum education level during Q4.

In Q4, employment totaled

225,179

an increase of 3,703 workers (1.7 percent) since Q3

Healthcare, Business and Finance, and Information Technology occupation groups were the highest posting employers in Q4. The top posted job titles include Registered Nurses, Computer Occupation, All Other, Software Developers and Software Quality Assurance Analysts and Testers, and Personal Service Managers, all Other. More information about in-demand job postings can be found on page 7.

Of the 60,341 unique postings in the City of Detroit during Q4, 47 percent required a college degree, while an additional 12 percent required an advanced degree. The high demand for Business and Finance and Information Technology roles within the city drives this high demand for college education.

Top 5 Posting Occupation Groups
Q4 2021

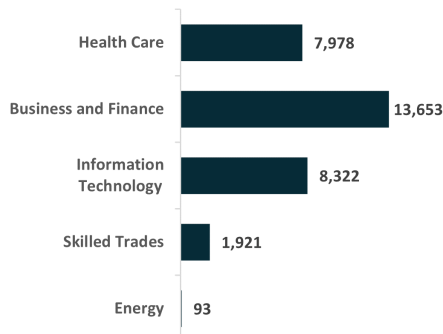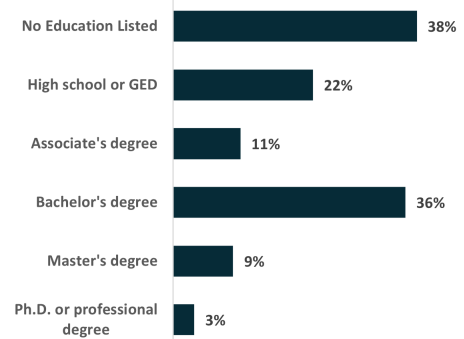| Occupation Group	Postings
Health Care	7,978
Business and Finance	13,653
Information Technology	8,322
Skilled Trades	1,921
Energy	93

Education Levels In-Demand
Q4 2021

Education Level	Percent
No Education Listed	38%
High school or GED	22%
Associate's degree	11%
Bachelor's degree	36%
Master's degree	9%
Ph.D. or professional degree	3%

Detroit's labor force experienced positive growth quarter over quarter in 2021. After dropping 13 percent from Q4 2020 to Q1 2021, the Q4 labor force number still remains 7.6 percent lower than the Q4 2020 high of 268,323. Employment and unemployment figures have followed the labor force ebb and flow, with Q4 ending at a 2.5 percent employment increase from Q4 2020 and a 53.1 percent decrease in unemployment over the same time period. More information regarding this year's unemployment rate and other labor market indicators can be found on page 4.

Quarterly Labor Market Data

	4th Quarter 2020	1st Quarter 2021	2nd Quarter 2021	3rd Quarter 2021	4th Quarter 2021	Change from 3rd Quarter 2021	Percent Change from 3rd Quarter 2021	Change from 4th Quarter 2020	Percent Change from 4th Quarter 2020
Labor Force	268,323	237,249	237,463	241,757	248,037	6,280	2.6%	-20,285	-7.6%
Employment	219,612	213,199	214,189	221,476	225,179	3,703	1.7%	5,567	2.5%
Unemployment	48,711	24,050	23,274	20,281	22,859	2,577	12.7%	-25,852	-53.1%
Unemployment Rate	18.2%	10.1%	9.8%	8.4%	9.2%	0.8%	n/a	-8.94%	n/a

Note: Monthly data averaged by quarter Data: Bureau of Labor Statistics

Data: Emsi | Analysis: Workforce Intelligence Network

LABOR FORCE, EMPLOYMENT, AND UNEMPLOYMENT

The labor force in the City of Detroit experienced positive growth year over year from 2015 through 2020. 2021 marked an 8.0 percent decline to a low of 241,127 workers. Employment showed a similar trend, with positive growth year after year from 2011 through 2019; the COVID-19 pandemic ushered in a significant drop, with employment dipping 11.4 percent in 2020. As shutdown measures were lifted, the City of Detroit experienced positive employment growth throughout 2020 (5.7 percent) and a decrease in unemployment (-59.2 percent), with the 2021 unemployment rate dropping to 9.4 percent.

	2011 Annual	2012 Annual	2013 Annual	2014 Annual	2015 Annual	2016 Annual	2017 Annual	2018 Annual	2019 Annual	2020 Annual	2021 Annual	Change from 2020	Percent Change from 2020
Labor Force	261,343	257,730	257,708	249,976	241,467	246,326	248,070	248,928	251,966	262,129	241,127	-21,003	-8.0%
Employment	206,226	208,119	208,943	209,701	212,953	219,906	224,958	226,473	230,163	206,652	218,511	11,858	5.7%
Unemployment	55,117	49,611	48,765	40,275	28,514	26,420	23,112	22,454	21,804	55,477	22,616	-32,861	-59.2%
Unemployment Rate	21.1%	19.2%	18.9%	16.1%	11.8%	10.7%	9.3%	9.0%	8.7%	21.2%	9.4%	-11.8%	n/a

Data: Bureau of Labor Statistics

CENSUS 2020 LABOR FORCE DEMOGRAPHICS

During 2020, there were 286,678 individuals in the labor force, meaning they were either working or looking for work. Employed workers make up 85.1 percent of the city's labor force. The highest unemployment rates in 2020 were seen in those aged 24 years old or younger, with 65.6 percent of unemployed individuals identifying as males compared to 55.5 percent of unemployed individuals identifying as female. Overall, males have a higher unemployment rate than females, at 17.1 percent and 12.9 percent respectively. Black or African American, Native American, and job seekers that identify as Two or More Races faced the most challenges in securing employment, with each group experiencing an unemployment rate of approximately 17 percent in 2020.

Civilian Labor Force by Demographic Group				
Demographic Group	Civilian Labor Force	Total Employment	Total Unemployment	Unemployment Rate
Total Population 16 +	286,678	243,926	42,752	14.9%
Sex				
Male 16+	136,777	113,394	23,383	17.1%
16-19	6,453	3,844	2,609	40.4%
20-24	16,893	12,647	4,246	25.1%
25-54	91,417	77,844	13,573	14.8%
55-64	17,247	14,794	2,453	14.2%
65 Plus	4,767	4,265	502	10.5%
Female 16+	149,901	130,532	19,369	12.9%
16-19	6,951	4,719	2,232	32.1%
20-24	18,097	13,857	4,240	23.4%
25-54	98,050	86,706	11,344	11.6%
55-64	19,692	18,480	1,212	6.2%
65 Plus	7,111	6,770	341	4.8%
Race				
White	44,941	40,897	4,045	9.0%
Black / African	218,521	182,465	36,056	16.5%
Native American	953	796	157	16.5%
Asian	5,819	5,353	465	8.0%
Native Hawaiian / Pacific Islander	49	49	0	0%
Some Other Race	9,894	8,994	900	9.1%
Two or More Races	6,595	5,500	1,095	16.6%
Ethnicity				
Hispanic	20,688	18,433	2,255	10.9%

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

POPULATION DEMOGRAPHICS

2020 Census Population

According to the Census Bureau 2020 ACS Five Year estimates, the City of Detroit had a population of 672,351 people. The sex of the populace was split almost evenly, with about 52.7 percent of the population identifying as female, and the other 47.3 percent identifying as male. The majority of the population identified as Black or African American (77.1 percent) with the second largest number of individuals identifying as White (14.4 percent). The city's age demographics skew younger than the surrounding region; 26.0 percent of the population was over the age of 54, compared to 35.0 percent under the age of 25, while 39.1 percent of the population fell between the ages of 25-54.

Population Gender Demographics

52.70% Female	
47.3% Male	

20 30 40 50 60 70 80 90 100
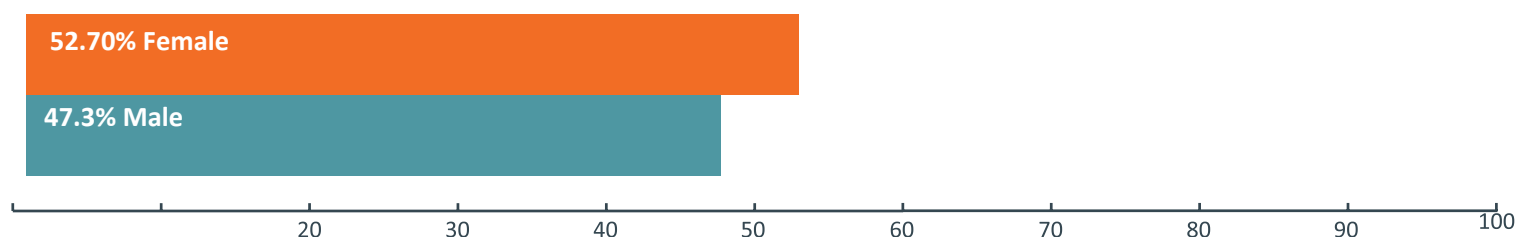
Population Race Demographics

- White, 14.4%
- Black or African American, 77.1%
- Hispanic or Latino, 7.7%
- Asian, 1.7%
- Two or More Races, 2.4%
- American Indian or Alaska Native, 0.4%
- Native Hawaiian or Other Pacific Islander, 0.02%
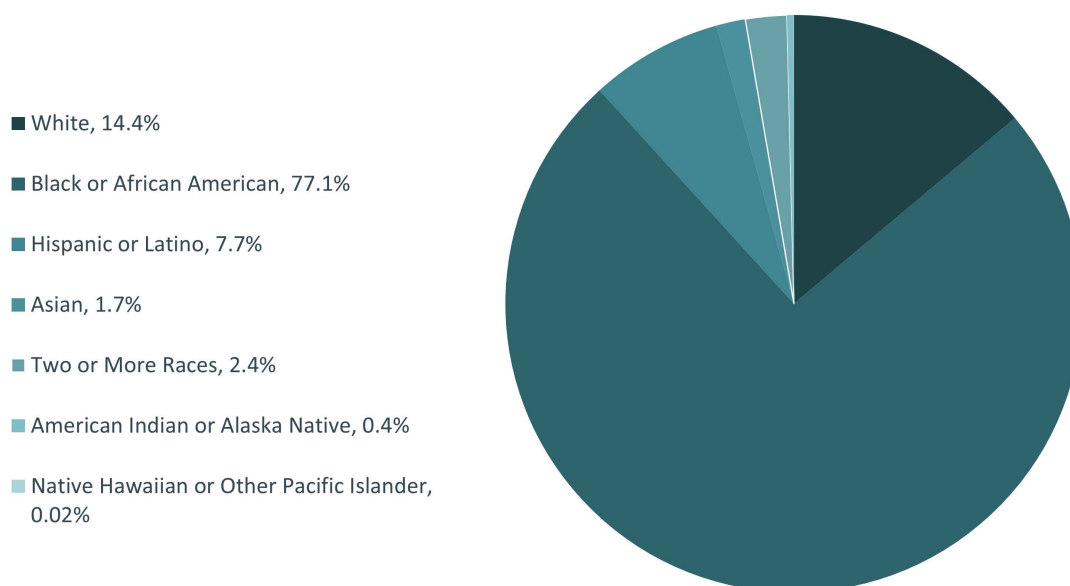
Population Age Demographics

Age 14 and Under 20.9%	Age 15-24 14.1%	Age 25-54 39.1%	Age 55+ 26.0%

REGIONAL COMMUTING PATTERNS

According to the most recent OnTheMap data set from the Census Bureau Detroit's 2019 workforce consisted of 195,233 residents. 31.7 percent of the residents also worked in the city, while the remaining 68.3 percent traveled outside for work. With 235,654 workers employed in the city during 2019 there were 73.7 percent living outside of the city and commuting in. While there is a higher percentage of both inbound and outbound commuters in Detroit than other areas of the WIN regions, Detroit is ultimately a net importer of jobs, with more workers commuting into the area for employment than leaving.

Where City of Detroit Residents Work

County	%
Wayne County, MI	51.4%
Oakland County, MI	24.1%
Macomb County, MI	11.9%
Ingham County, MI	2.5%
Kent County, MI	1.7%
Washtenaw County, MI	1.7%
Genesee County, MI	1.0%
Livingston County, MI	0.8%
Saginaw County, MI	0.4%
Monroe County, MI	0.4%
All Other Locations	4.2%
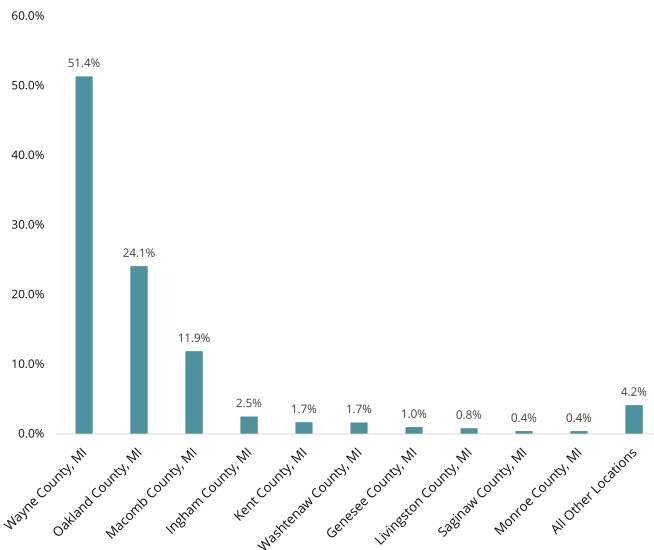
Where City of Detroit Workers Live

County	%
Wayne County, MI	50.8%
Oakland County, MI	21.0%
Macomb County, MI	16.3%
Washtenaw County, MI	1.6%
St. Clair County, MI	1.5%
Genesee County, MI	1.0%
Monroe County, MI	0.9%
Ingham County, MI	0.8%
Kent County, MI	0.8%
Livingston County, MI	0.6%
All Other Locations	4.8%
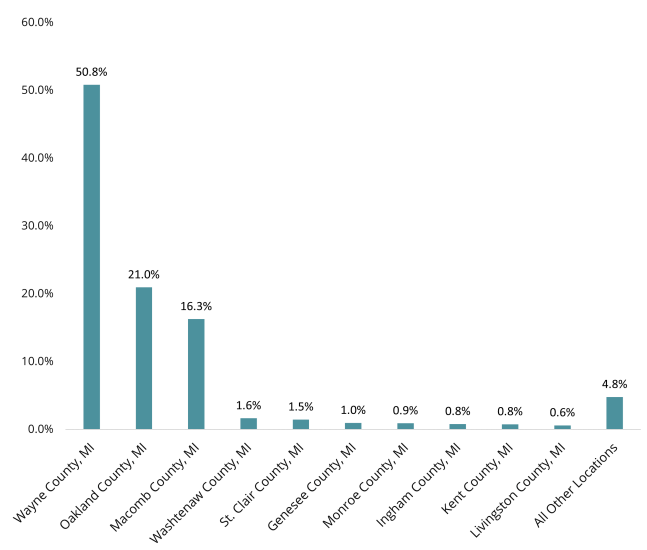
Source: U.S. Census OnTheMap, 2019
Analysis: Workforce Intelligence Network

Source: U.S. Census OnTheMap, 2019
Analysis: Workforce Intelligence Network

173,711 LIVE OUTSIDE OF THE CITY OF DETROIT AND COMMUTE IN

61,943 LIVE AND WORK IN THE CITY OF DETROIT

133,290 LIVE IN THE CITY OF DETROIT AND COMMUTE OUT

TOP POSTED JOBS

Top Posted Jobs

Registered Nurses has remained the highest in-demand occupation since Q4 2018, with 2,939 unique online job postings. Computer Occupations, All Other is the second largest occupation with 2,771 postings. Software Developers and Software Quality Assurance Analysts and Testers (2,616 postings) round out the top three occupations in Q4. The majority of these positions require a bachelor's degree, which is common in over half of the top 20 posted jobs for the city.
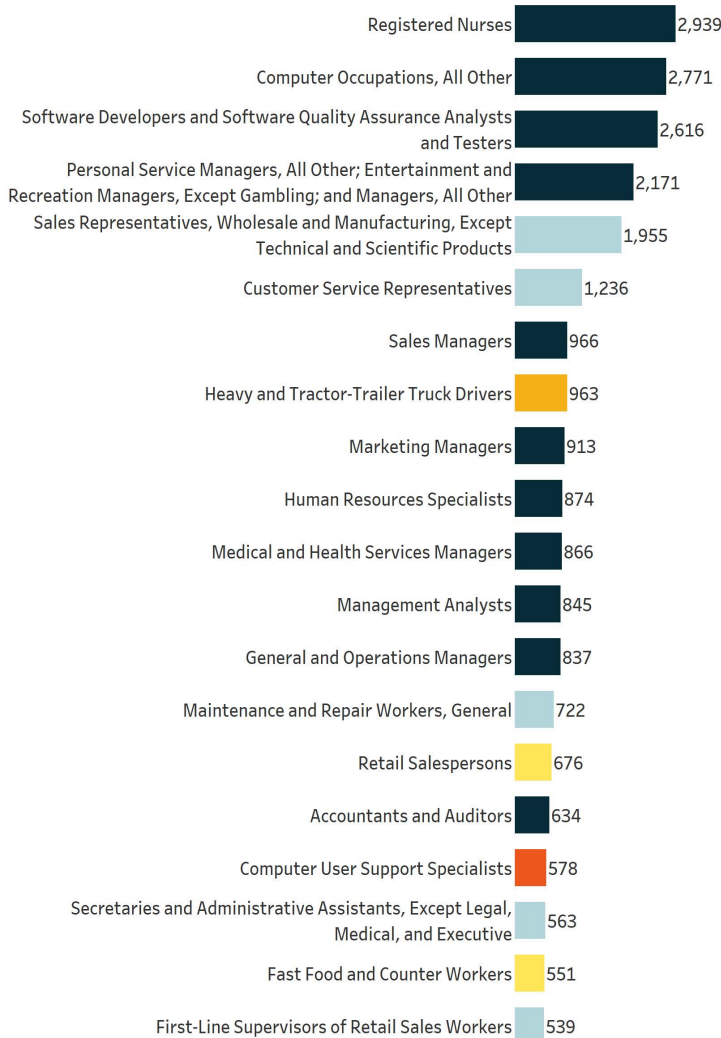
Top Posted Entry-Level Jobs

Entry-level jobs, which usually require zero to two years of previous experience, account for 20.7 percent of postings in Detroit. Six of the top ten entry level occupations require a bachelor's degree, while the remaining four require a high school diploma or postsecondary non-degree award. Those who enter the workforce with a college degree can expect entry wages nearly double from those without. Registered Nurses were the top posted entry-level job with 895 postings requiring zero to two years of experience and a bachelor's degree.
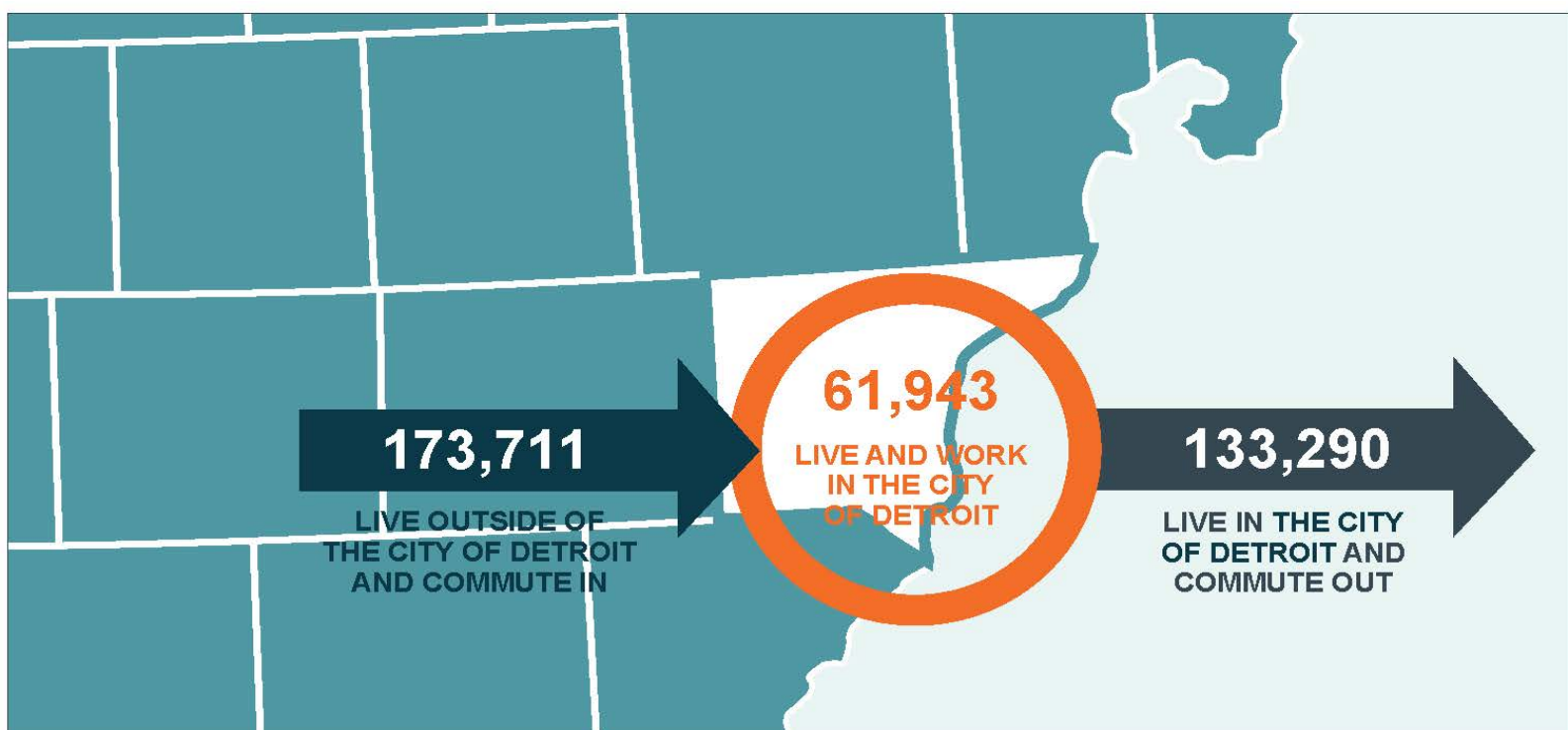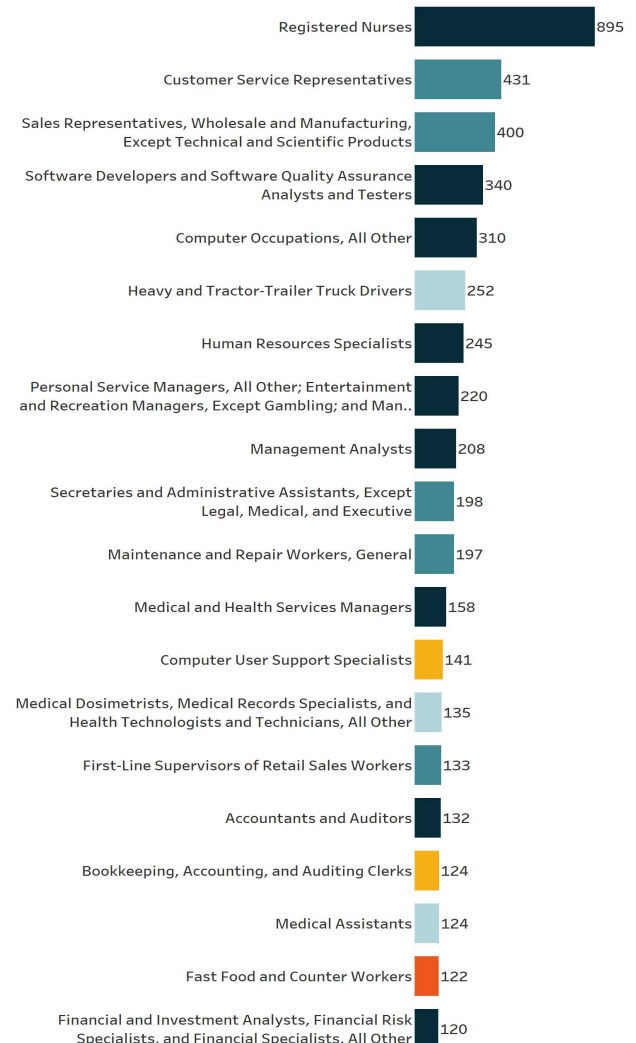
Top Posted Jobs

Occupation	Postings
Registered Nurses	2,939
Computer Occupations, All Other	2,771
Software Developers and Software Quality Assurance Analysts and Testers	2,616
Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	2,171
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,955
Customer Service Representatives	1,236
Sales Managers	966
Heavy and Tractor-Trailer Truck Drivers	963
Marketing Managers	913
Human Resources Specialists	874
Medical and Health Services Managers	866
Management Analysts	845
General and Operations Managers	837
Maintenance and Repair Workers, General	722
Retail Salespersons	676
Accountants and Auditors	634
Computer User Support Specialists	578
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	563
Fast Food and Counter Workers	551
First-Line Supervisors of Retail Sales Workers	539

- High school diploma or equivalent
- Some college, no degree
- Postsecondary nondegree award
- Bachelor's degree
- No formal educational credential

Top Posted Entry-Level Jobs

Occupation	Postings
Registered Nurses	895
Customer Service Representatives	431
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	400
Software Developers and Software Quality Assurance Analysts and Testers	340
Computer Occupations, All Other	310
Heavy and Tractor-Trailer Truck Drivers	252
Human Resources Specialists	245
Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Man...	220
Management Analysts	208
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	198
Maintenance and Repair Workers, General	197
Medical and Health Services Managers	158
Computer User Support Specialists	141
Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other	135
First-Line Supervisors of Retail Sales Workers	133
Accountants and Auditors	132
Bookkeeping, Accounting, and Auditing Clerks	124
Medical Assistants	124
Fast Food and Counter Workers	122
Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other	120

- Bachelor's degree
- High school diploma or equivalent
- No formal educational credential
- Postsecondary nondegree award
- Some college, no degree

REAL-TIME DEMAND OVERVIEW
Employer Demand Highlights

Top Posting Employers*

- Henry Ford Health System
- Deloitte LLP
- Tenet Healthcare
- General Motors
- Microsoft
- Accenture
- Wayne State University
- Ascension
- GPAC
- City of Detroit

- VMware
- Strategic Staffing Solutions
- Epitec
- DTE Energy
- General Dynamics
- Ernst & Young
- Lconma, L.L.C.
- Amazon
- Xenith
- KPMG

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

In-Demand Technical Skills

- Nursing
- Finance
- Auditing
- Accounting
- Agile Methodology
- Communications
- Management
- Leadership
- Customer Service
- Operation

In-Demand Foundational Skills

- Communications
- Management
- Leadership
- Sales
- Customer Service
- Operations
- Sales
- Problem Solving
- Planning
- Detail Oriented

Top In-Demand Qualifications

- Bachelor of Science in Nursing (BSN)
- Master of Business Administration (MBA)
- Bachelor Of Science in Business
- Commercial Driver's License (CDL)
- Security Clearance
- Licensed Practical Nurse
- Certified Nursing Assistant

- Project Management Professional Certification
- Patient Care Technician
- Certified Public Accountant
- Certified Information Systems Security Professional
- Bachelor of Science in Business Administration
- Nurse Practitioner
- Certified Information System Auditor (CISA)

BUSINESS AND FINANCE OCCUPATION GROUP

Jobs in the Business and Finance occupation group can be found in nearly every type of establishment throughout the city. These workers require strong mathematical and accounting abilities along with project management and planning skills. Workers in this occupation group are in high demand in Detroit.

Employment Over Time
2011-2021

Year	Employment
2011	24,855
2012	25,736
2013	25,749
2014	26,552
2015	26,964
2016	28,296
2017	29,684
2018	30,511
2019	32,283
2020	32,174
2021	32,608
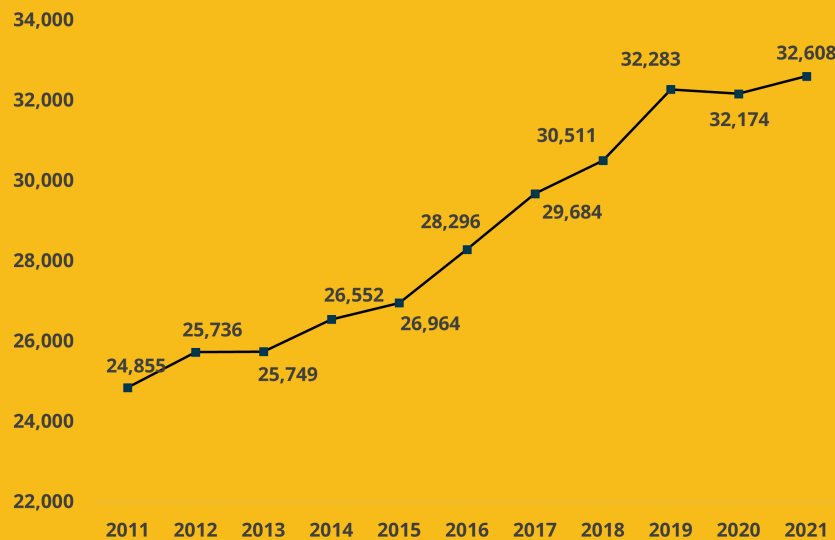
434
Business and Finance Workers
Slight increase from 2020

Business and Finance Education and Experience

The Business and Finance occupation group offers high paying job opportunities for workers. A bachelor's degree is the most in-demand education level in Q4, as noted in 7,971 postings. A master's degree is the second most in-demand education level with 1,716 postings, while 4,126 postings do not specify any education level. The majority of posts did not specify a required length of experience, with approximately half of the postings having listed a requirement of two or more years of experience.

Education	%
No Education Listed	30%
High school or GED	12%
Associate's degree	6%
Bachelor's degree	58%
Master's degree	13%
Ph.D. or professional degree	3%

Experience	%
No Experience Listed	37%
0 - 1 Years	7%
2 - 3 Years	23%
4 - 6 Years	20%
7 - 9 Years	6%
10+ Years	5%

Data: Emsi | Analysis: Workforce Intelligence Network
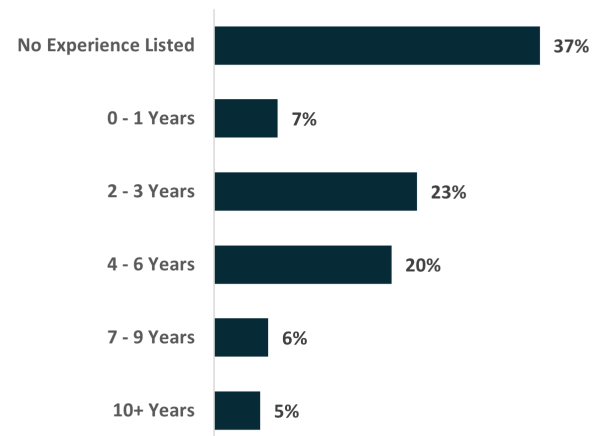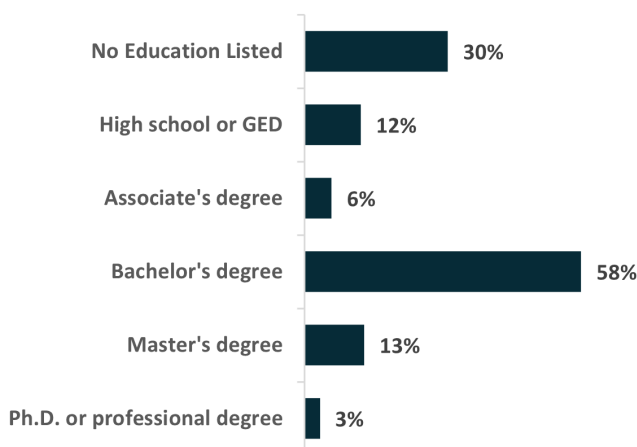
BUSINESS AND FINANCE OCCUPATION GROUP

Top Posted Jobs

The Business and Finance occupation group with the highest number of Q4 postings (2,171) was Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other. While most of the top jobs typically require a bachelor's degree, the second highest-posting occupation group, Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (1,955 postings), and Insurance Sales Agents (183 postings), both require a high school diploma and offer moderate on-the-job training for those without prior experience.

Occupation	Postings
Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	2,171
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,955
Sales Managers	966
Marketing Managers	913
Human Resources Specialists	874
Management Analysts	845
General and Operations Managers	837
Accountants and Auditors	634
Financial Managers	481
Market Research Analysts and Marketing Specialists	453
Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other	405
Operations Research Analysts	306
Public Relations Specialists	230
Public Relations and Fundraising Managers	225
Buyers and Purchasing Agents	217
Property, Real Estate, and Community Association Managers	188
Insurance Sales Agents	183
Loan Officers	174
Administrative Services and Facilities Managers	158
Project Management Specialists and Business Operations Specialists, All Other	145

■ High school diploma or equivalent
■ Bachelor's degree

BUSINESS AND FINANCE OCCUPATION GROUP
Wage Overview

For job seekers able to obtain the required education, Business and Finance occupations offer lucrative opportunities. The top posted occupation, Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other, offers median hourly wages of $57.24 ($108,160 annually), while Sales Managers have a median hourly wage of $71.60 ($147,680 annually). Additional experience may lead to a role as a Marketing or Financial Manager, with median hourly wages at $69.06 ($143,520 annually). Human Resources Specialists provided the lowest median hourly wage for the top posted jobs in this occupation group at $29.82, which is still significantly above the state median of $18.60.

Wage Overview for Top Posted Business and Finance Jobs in Q4 2021

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	$30.88	$42.72	$57.24	$72.02	$92.31
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	$14.19	$20.99	$33.41	$49.06	$65.06
11-2022	Sales Managers	$40.32	$55.60	$71.60	$88.79	$133.82
11-2021	Marketing Managers	$38.15	$52.85	$69.06	$85.81	$121.45
13-1071	Human Resources Specialists	$17.49	$22.44	$29.82	$39.21	$50.48
13-1111	Management Analysts	$28.80	$35.40	$43.75	$54.82	$68.54
11-1021	General and Operations Managers	$21.98	$33.79	$54.58	$84.87	$117.37
13-2011	Accountants and Auditors	$24.32	$29.83	$37.76	$49.27	$65.39
11-3031	Financial Managers	$41.75	$52.20	$66.93	$84.34	$129.28
13-1161	Market Research Analysts and Marketing Specialists	$18.93	$25.31	$34.59	$49.72	$63.09

In-Demand Technical Skills
- Finance
- Accounting
- Auditing
- Selling Techniques
- Business Development

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

In-Demand Certifications
- Automotive Service Excellence (ASE) Certification
- Bachelor Of Science in Business
- Bachelor Of Science in Business Administration
- Certified Associate In Project Management
- Certified Energy Manager

In-Demand Education Level*
- High School Diploma: 11.8%
- Associate Degree: 5.7%
- Bachelor's Degree: 58.4%
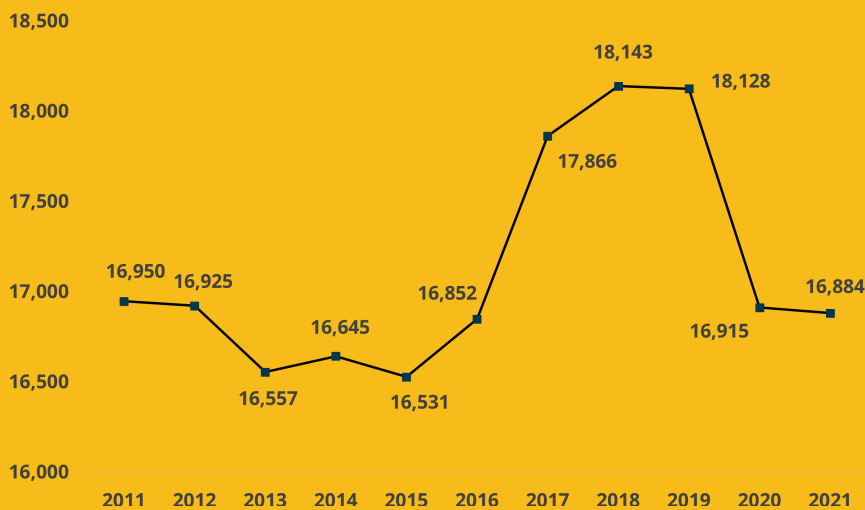- Master's Degree: 13.2%

Top Posting Employers
- Deloitte
- Microsoft
- General Motors
- Accenture
- VMware
- KPMG
- Ernst & Young
- Wayne State University
- GPAC
- DTE Energy

*Not all job postings indicate the required educational attainment level; the percentages indicated may not equal 100 percent.

ENERGY OCCUPATION GROUP

Energy-related occupations include jobs in engineering, science, mining, and extraction. Workers in this field have a range of skills 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. Posting data referenced in this section pertains only to job postings from energy-related businesses.
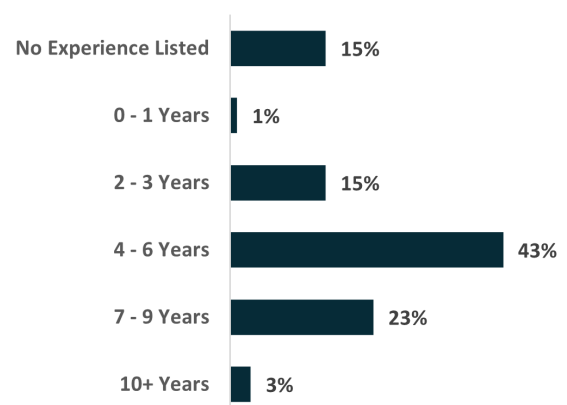
Employment Over Time
2011-2021

Year	Value
2011	16,950
2012	16,925
2013	16,557
2014	16,645
2015	16,531
2016	16,852
2017	17,866
2018	18,143
2019	18,128
2020	16,915
2021	16,884

31
Energy Workers
Slight decrease from 2020

Energy Education and Experience

The Energy occupation group requires a specialized workforce with specific skills. A bachelor's degree is the most in-demand education level in Q4 with 82 percent of 76 postings. A master's degree is the second most in-demand education level with 48 percent, while 6 percent require a Ph.D. The amount of experience required varies widely from none to over ten years, with six years being the most commonly posted.

Education	Percent
No Education Listed	8%
High school or GED	16%
Associate's degree	9%
Bachelor's degree	82%
Master's degree	48%
Ph.D. or professional degree	6%

Experience	Percent
No Experience Listed	15%
0 - 1 Years	1%
2 - 3 Years	15%
4 - 6 Years	43%
7 - 9 Years	23%
10+ Years	3%

Data: Emsi | Analysis: Workforce Intelligence Network
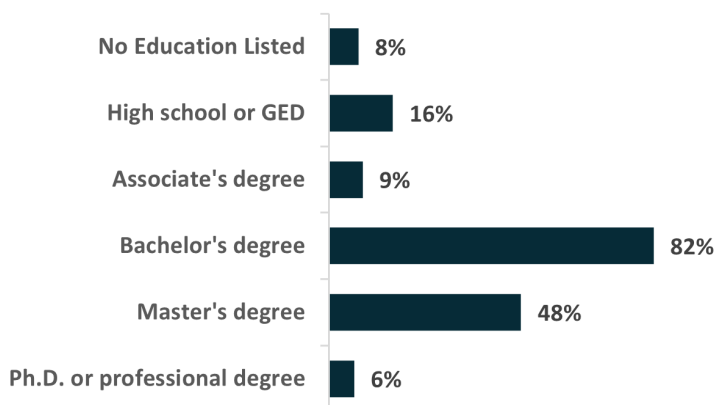
ENERGY OCCUPATION GROUP

Top Posted Jobs

Most high-demand Energy occupations are engineering positions requiring a bachelor's degree. Engineers, All Other has emerged as the highest in-demand Energy occupation in Q4 with 22 postings. Other top posted jobs requiring a bachelor's degree include Electrical Engineers (12 postings) and Mechanical Engineers (14 postings). Service Unit Operators, Oil and Gas and Gas Compressor and Gas Pumping Station workers are required to hold a high school diploma or equivalent and may receive moderate to long-term on-the-job training in lieu of previous experience.

Chart legend:
- No formal educational credential
- High school diploma or equivalent
- Associate's degree
- Bachelor's degree

Occupation	Postings
Engineers, All Other	22
Mechanical Engineers	14
Electrical Engineers	12
General and Operations Managers	9
Calibration Technologists and Technicians and Engineering Technologists and Technicians, Exce..	7
Civil Engineers	5
Industrial Production Managers	4
Operating Engineers and Other Construction Equipment Operators	3
Life, Physical, and Social Science Technicians, All Other	3
Chemists	3
Surveyors	2
Environmental Engineers	2
Social Scientists and Related Workers, All Other	1
Service Unit Operators, Oil and Gas	1
Natural Sciences Managers	1
Industrial Engineers	1
Gas Compressor and Gas Pumping Station Operators	1
First-Line Supervisors of Construction Trades and Extraction Workers	1
Chemical Engineers	1

ENERGY OCCUPATION GROUP

Wage Overview

High demand for engineers and managers in the energy field provides lucrative opportunities for job seekers able to obtain the required educational level. The top posted energy job, Engineers All Other, offers a median hourly wage of $42.30 ($87,984 annually). Construction- and technician-focused positions generally have shorter educational requirements and pay higher median wages than similar occupations in other industries.

Wage Overview for Top Posted Energy Jobs in Q4 2021

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
17-2199	Engineers, All Other	$25.34	$33.88	$42.30	$56.16	$66.54
17-2141	Mechanical Engineers	$31.70	$36.46	$44.62	$55.34	$64.32
17-2071	Electrical Engineers	$31.08	$37.14	$45.65	$55.50	$64.39
11-1021	General and Operations Managers	$21.98	$33.79	$54.58	$84.87	$117.37
17-3098	Calibration Technologists and Technicians and Engineering Technologists and Technicians, Except Drafters, All Other	$17.74	$23.97	$35.47	$44.37	$52.35
17-2051	Civil Engineers	$24.97	$29.03	$34.97	$42.49	$49.94
11-3051	Industrial Production Managers	$34.06	$44.21	$56.74	$71.69	$89.17
19-2031	Chemists	$19.31	$26.64	$34.72	$41.28	$52.89
19-4099	Life, Physical, and Social Science Technicians, All Other	$13.43	$16.09	$18.85	$24.37	$29.88
47-2073	Operating Engineers and Other Construction Equipment Operators	$22.89	$26.75	$29.90	$33.67	$40.23

In-Demand Technical Skills

- Strategic Business Unit
- Process Improvement
- Natural Gas
- Bidding
- Continuous Improvement Process

In-Demand Foundational Skills

- Management
- Communications
- Problem Solving
- Planning
- Time Management

In-Demand Certifications

- American Society For Quality (ASQ) Certified
- Bachelor Of Science in Business
- Bachelor Of Science in Business Administration
- Certified Quality Engineer
- Certified Quality Manager

In-Demand Education Level*

- High School Diploma: 16.1%
- Associate Degree: 8.6%
- Bachelor's Degree: 81.7%
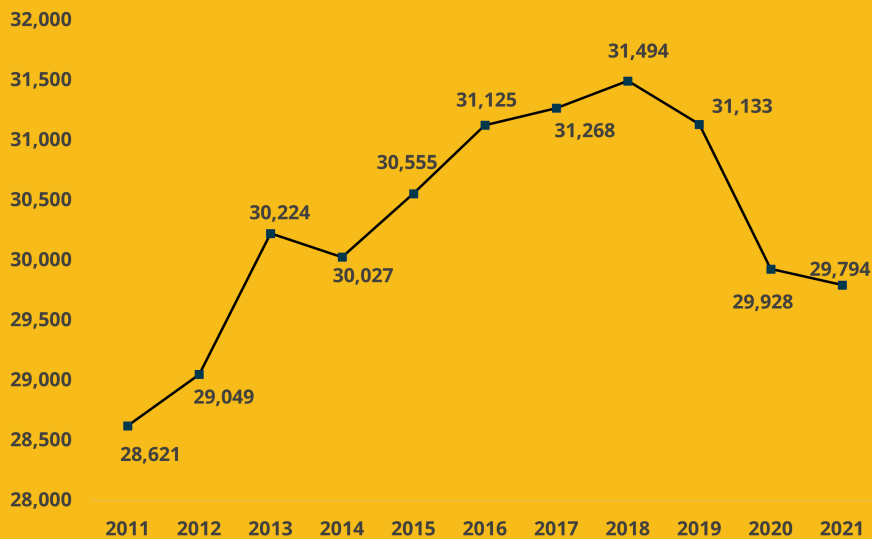- Master's Degree: 48.4%

Top Posting Employers

- DTE Energy
- Crossfire
- Consumers Energy
- Coil Tubing Partners
- Miller Pipeline
- Wildcat Services
- DTE Gas Company
- Borrego Solar Systems

Not all job postings indicate the required educational attainment level; the percentages indicated may not equal 100 percent.

HEALTHCARE OCCUPATION GROUP

The Healthcare occupation group includes jobs related to health care support and practitioners. Employment in this group has been increasing consistently, with more healthcare workers needed to care for Michigan's aging population. Annually, there are about 23,600 job openings for these positions across southeast Michigan, and this is projected to continue increasing.
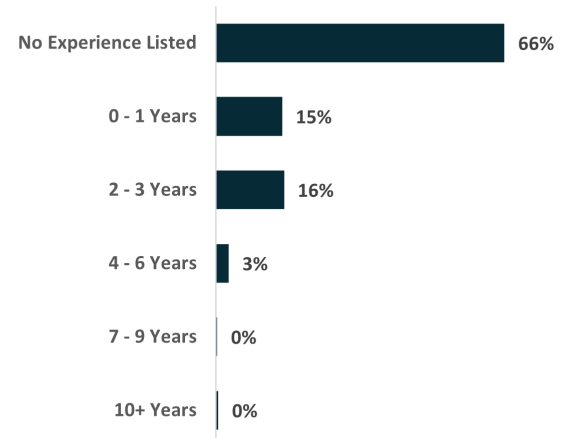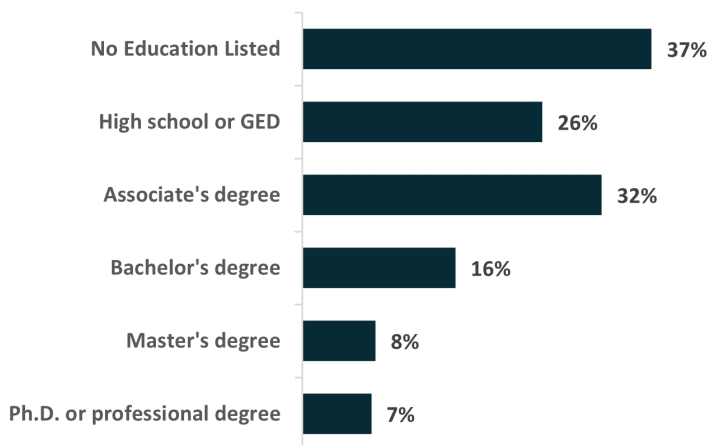
Employment Over Time
2011-2021

Year	Employment
2011	28,621
2012	29,049
2013	30,224
2014	30,027
2015	30,555
2016	31,125
2017	31,268
2018	31,494
2019	31,133
2020	29,928
2021	29,794

134 Healthcare Workers
0.4% Decrease from 2020

Healthcare Education and Experience

The Healthcare occupation group offers many job opportunities for active job seekers at all experience levels. An associate degree is the most in-demand education level in Q4, with 2,546 postings. A high school diploma or equivalent is the second most in-demand education level (2,041 postings). Many postings from this group were open to entry-level workers with zero to one year of experience, and do not specify any education level.

Education	Percent
No Education Listed	37%
High school or GED	26%
Associate's degree	32%
Bachelor's degree	16%
Master's degree	8%
Ph.D. or professional degree	7%

Experience	Percent
No Experience Listed	66%
0 - 1 Years	15%
2 - 3 Years	16%
4 - 6 Years	3%
7 - 9 Years	0%
10+ Years	0%

Data: Emsi | Analysis: Workforce Intelligence Network

HEALTHCARE OCCUPATION GROUP

Top Posted Jobs

Registered Nurses were the highest in-demand Healthcare occupation with 2,939 total postings, a number significantly higher than all of the other occupations. An associate degree is the most in-demand education level amongst health care occupations, indicated in 32 percent of postings. A high school diploma or equivalent accounts for 26 percent of posting requirements.

Occupation	Postings
Registered Nurses	2,939
Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other	522
Nursing Assistants	424
Medical Assistants	410
Clinical Laboratory Technologists and Technicians	403
Home Health and Personal Care Aides	294
Licensed Practical and Licensed Vocational Nurses	259
Pharmacy Technicians	238
Physicians, All Other; and Ophthalmologists, Except Pediatric	191
Nurse Practitioners	153
Speech-Language Pathologists	123
Radiologic Technologists and Technicians	123
Dietitians and Nutritionists	119
Diagnostic Medical Sonographers	107
Surgical Technologists	100
Respiratory Therapists	97
Physical Therapists	90
Pharmacists	90
General Internal Medicine Physicians	89
Magnetic Resonance Imaging Technologists	86

Legend:
- High school diploma or equivalent
- Postsecondary nondegree award
- Associate's degree
- Bachelor's degree
- Master's degree
- Doctoral or professional degree

HEALTHCARE OCCUPATION GROUP

Wage Overview

Wages in Healthcare are generally higher than the state median hourly wage of $18.60, with pay increasing in line with required education, training, and experience for Healthcare's top jobs. Registered Nurses, the top posted healthcare job in Q4, offers a median hourly wage of $37.16 ($77,292 annually). Although many positions require an associate degree or higher, there are several jobs above the state minimum wage open to those with a high school diploma or equivalent.

Wage Overview for Top Posted Healthcare Jobs in Q4 2021

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
29-1141	Registered Nurses	$27.89	$31.56	$37.16	$43.13	$49.52
29-2098	Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other	$14.56	$17.40	$21.69	$29.11	$36.19
31-1131	Nursing Assistants	$12.55	$13.75	$15.55	$17.90	$19.45
31-9092	Medical Assistants	$13.63	$15.35	$17.58	$19.57	$22.35
29-2018	Clinical Laboratory Technologists and Technicians	$15.09	$18.19	$27.46	$34.89	$39.33
31-1128	Home Health and Personal Care Aides	$10.69	$11.31	$12.36	$14.28	$16.46
29-2061	Licensed Practical and Licensed Vocational Nurses	$20.97	$24.15	$27.06	$29.68	$31.44
29-2052	Pharmacy Technicians	$11.64	$13.95	$17.05	$20.06	$23.55
29-1228	Physicians, All Other; and Ophthalmologists, Except Pediatric	$26.33	$28.36	$31.81	$103.65	$117.61
29-1171	Nurse Practitioners	$43.32	$47.06	$53.44	$61.75	$69.03

In-Demand Technical Skills

- Nursing
- Basic Life Support
- Nursing Care
- Cardiopulmonary Resuscitation (CPR)
- Patient Preparation

In-Demand Foundational Skills

- Communications
- Leadership
- Management
- Customer Service
- Teaching

In-Demand Certifications

- Bachelor Of Science in Nursing (BSN)
- Certified Nursing Assistant
- Licensed Practical Nurse
- Patient Care Technician
- American Registry Of Radiologic Technologists (ARRT) Certified

In-Demand Education Level*

- High School Diploma: 25.6%
- Associate Degree: 31.9%
- Bachelor's Degree: 16.3%
- Master's Degree: 7.8%
- Ph.D. Or professional Degree: 7.4%
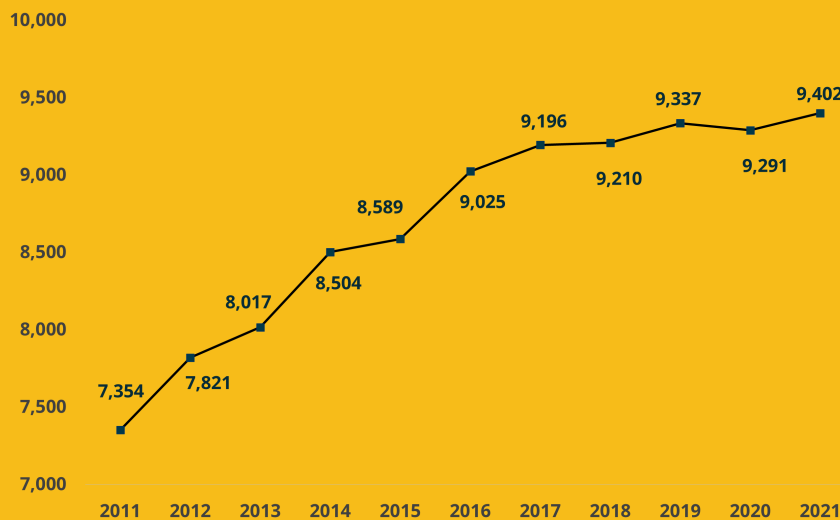
Top Posting Employers

- Tenet Healthcare
- Henry Ford Health System
- Ascension
- DMC Sinai-Grace Hospital
- Detroit Medical Center
- Epitec
- Baptist Health
- United States Department of Veterans Affairs
- DMC Children's Hospital of Michigan
- McLaren Health Care

Not all job postings indicate the required educational attainment level; the percentages indicated may not total 100 percent.

INFORMATION TECHNOLOGY OCCUPATION GROUP

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.

Employment Over Time
2011-2021

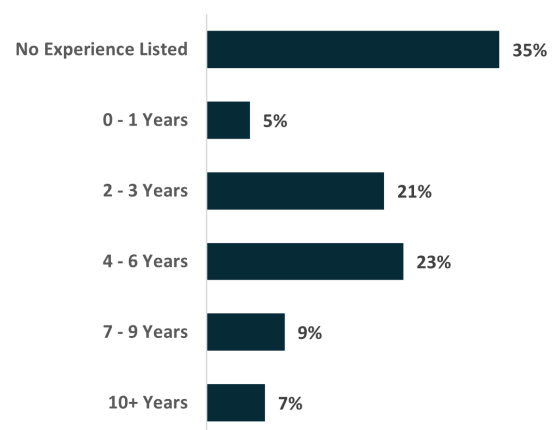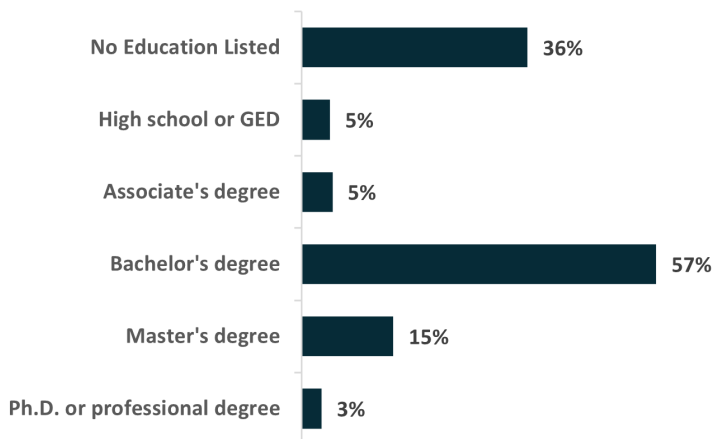| Year	Employment
2011	7,354
2012	7,821
2013	8,017
2014	8,504
2015	8,589
2016	9,025
2017	9,196
2018	9,210
2019	9,337
2020	9,291
2021	9,402

111 Information Technology Workers

1.2% Increase from 2020
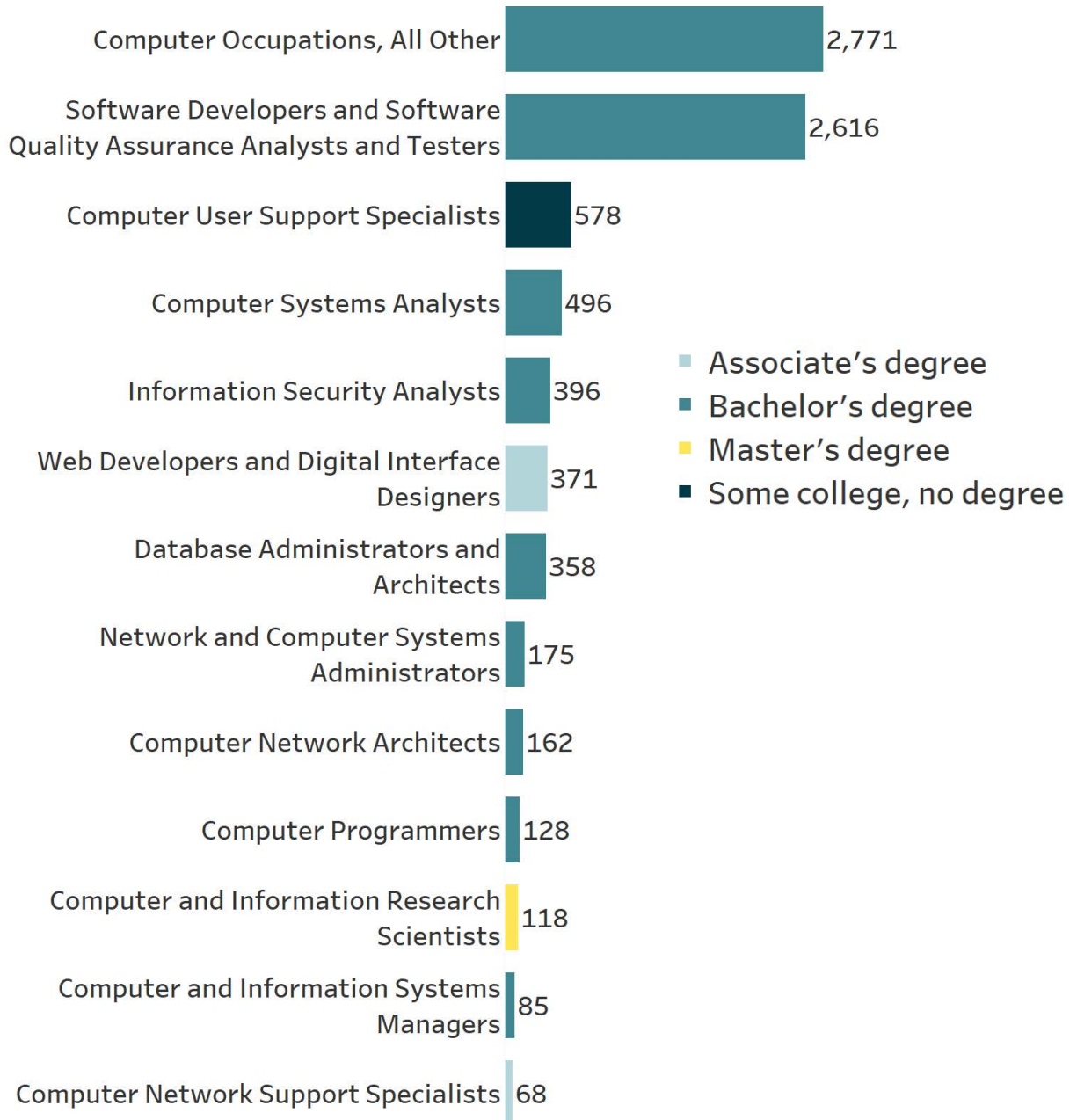
Information Technology Education and Experience

The Information Technology occupation group offers ample opportunities for active job seekers, with 8,322 postings in Q4. A bachelor's degree is the most in-demand education level, with a master's degree the second most required education level. Few IT postings were open to workers with less than 2 years of experience; the majority of postings required 2 to 6 years of experience.

Education	%
No Education Listed	36%
High school or GED	5%
Associate's degree	5%
Bachelor's degree	57%
Master's degree	15%
Ph.D. or professional degree	3%

Experience	%
No Experience Listed	35%
0 - 1 Years	5%
2 - 3 Years	21%
4 - 6 Years	23%
7 - 9 Years	9%
10+ Years	7%

Data: Emsi | Analysis: Workforce Intelligence Network

INFORMATION TECHNOLOGY OCCUPATION GROUP

Top Posted Jobs

Computer Occupations, All Other, which encompasses emerging occupations such as Database Architects, Web Administrators, and Search Marketing Strategists were the highest in-demand IT occupation in Q4, with 2,771 total postings. Software Developers and Software Quality Assurance Analysts and Testers was next most in-demand with 2,616 total postings. While most of the top jobs require a bachelor's degree, Web Developers and Digital Interface Designers (371 postings) typically require an associate degree while Computer User Support Specialists (578 postings) prefer some college education, but do not require a degree.

Occupation	Postings
Computer Occupations, All Other	2,771
Software Developers and Software Quality Assurance Analysts and Testers	2,616
Computer User Support Specialists	578
Computer Systems Analysts	496
Information Security Analysts	396
Web Developers and Digital Interface Designers	371
Database Administrators and Architects	358
Network and Computer Systems Administrators	175
Computer Network Architects	162
Computer Programmers	128
Computer and Information Research Scientists	118
Computer and Information Systems Managers	85
Computer Network Support Specialists	68

Legend:
- Associate's degree
- Bachelor's degree
- Master's degree
- Some college, no degree

INFORMATION TECHNOLOGY OCCUPATION GROUP

Wage Overview

Most IT jobs offer high wages, making for a lucrative opportunity for job seekers able to obtain the additional education related to these jobs. Computer Occupations, All Other, the top posted IT job in Q4, offers a median hourly wage of $41.05 ($85,384 annually). Computer User Support Specialists, which requires some college, no degree, offers a median wage of $20.92 ($43,513 annually).

Wage Overview for Top Posted Information Technology Jobs in Q4 2021

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
15-1299	Computer Occupations, All Other	$21.40	$29.54	$41.05	$52.78	$63.86
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	$29.56	$37.69	$47.79	$59.31	$69.06
15-1232	Computer User Support Specialists	$15.20	$17.51	$20.92	$28.71	$36.06
15-1211	Computer Systems Analysts	$31.78	$38.72	$48.69	$60.96	$73.59
15-1212	Information Security Analysts	$29.75	$38.11	$48.72	$60.23	$70.00
15-1257	Web Developers and Digital Interface Designers	$18.62	$26.31	$36.31	$45.75	$55.40
15-1245	Database Administrators and Architects	$27.05	$33.17	$46.85	$59.40	$67.75
15-1244	Network and Computer Systems Administrators	$27.28	$34.37	$41.99	$51.43	$61.38
15-1241	Computer Network Architects	$30.17	$44.08	$57.59	$69.32	$81.65
15-1251	Computer Programmers	$22.18	$26.49	$37.59	$49.40	$60.96

In-Demand Technical Skills

- Agile Methodology
- Computer Science
- SQL
- Java
- Automation

In-Demand Foundational Skills

- Communications
- Management
- Leadership
- Problem Solving
- Operations

In-Demand Certifications

- Certified Information Systems Security Professional
- Project Management Professional Certification
- Security Clearance
- Master Of Business Administration (MBA)
- Certified Information System Auditor (CISA)

In-Demand Education Level*

- High School Diploma: 4.5%
- Associate Degree: 4.9%
- Bachelor's Degree: 56.7%
- Master's Degree: 14.6%
- Ph.D. or professional Degree: 3.2%

Top Posting Employers

- Deloitte
- General Motors
- Microsoft
- Accenture
- General Dynamics
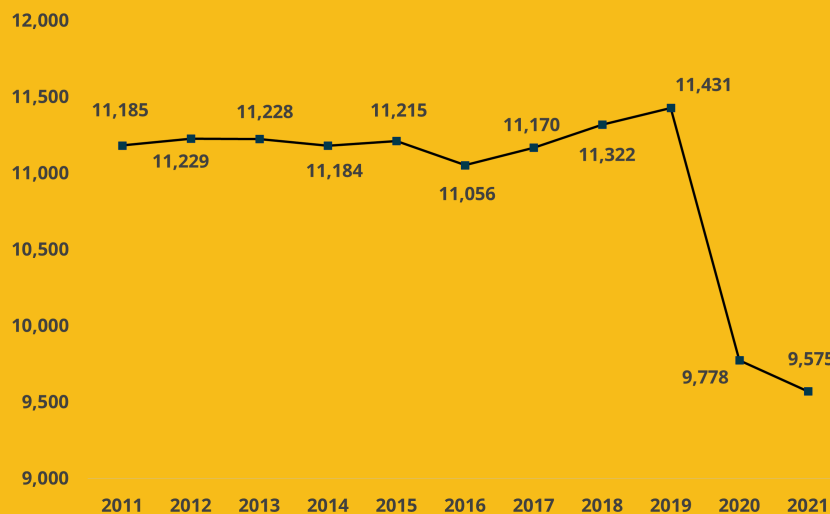- Strategic Staffing Solutions
- VMware
- Amazon
- Salesforce
- Keylent

Not all job postings indicate the required educational attainment level; the percentages indicated may not total 100 percent.

SKILLED TRADES AND TECHNICIANS OCCUPATION GROUP

The Skilled Trades and Technicians occupation group includes jobs related to advanced manufacturing. Southeast Michigan has one of the highest demands for skilled trades labor, such as CNC machinists and welders, 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.
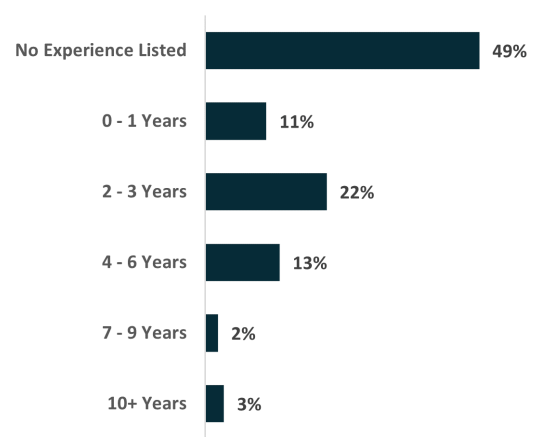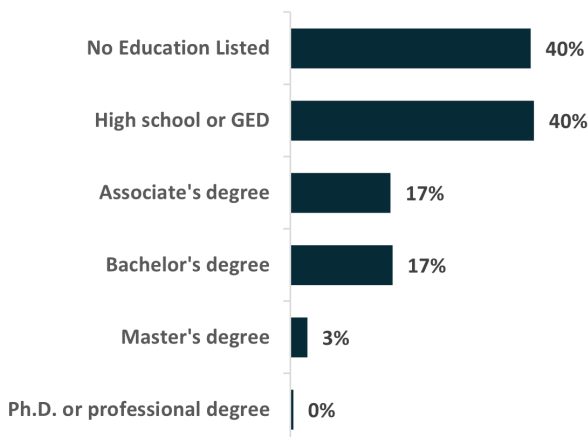
Employment Over Time
2011-2021

Year	Employment
2011	11,185
2012	11,229
2013	11,228
2014	11,184
2015	11,215
2016	11,056
2017	11,170
2018	11,322
2019	11,431
2020	9,778
2021	9,575

203 Skilled Trades Workers
2.1% Decrease from 2020

Skilled Trades Education and Experience

The Skilled Trades occupation group offers many opportunities for active job seekers in southeast Michigan. A high school diploma or equivalent was the most in-demand education level (776 postings), while a bachelor's degree was the second most in-demand education level (325 postings). Many Skilled Trades occupation postings were open to workers with zero to three years of experience.

Education	%
No Education Listed	40%
High school or GED	40%
Associate's degree	17%
Bachelor's degree	17%
Master's degree	3%
Ph.D. or professional degree	0%

Experience	%
No Experience Listed	49%
0 - 1 Years	11%
2 - 3 Years	22%
4 - 6 Years	13%
7 - 9 Years	2%
10+ Years	3%

SKILLED TRADES AND TECHNICIANS OCCUPATION GROUP

Top Posted Jobs

Maintenance and Repair Workers, General was the highest in-demand Skilled Trades occupation during Q4 (722 postings). Other top posted jobs included Production Workers, All Other (227 postings), First-Line Supervisors of Production and Operating Workers (178 postings), Industrial Production Managers (157 postings), and Industrial Engineering Technologists and Technicians (147 postings). The majority of this occupation group's top posted jobs required a high school diploma or equivalent and offered moderate to long-term on-the-job training in lieu of experience.

Occupation	Postings
Maintenance and Repair Workers, General	722
Production Workers, All Other	227
First-Line Supervisors of Production and Operating Workers	178
Industrial Production Managers	157
Industrial Engineering Technologists and Technicians	147
Calibration Technologists and Technicians and Engineering Technologists and Technicians, Exce..	111
Electrical and Electronic Engineering Technologists and Technicians	77
Industrial Machinery Mechanics	44
Electro-Mechanical and Mechatronics Technologists and Technicians	36
Tool and Die Makers	30
Computer Numerically Controlled Tool Operators	22
Welders, Cutters, Solderers, and Brazers	17
Civil Engineering Technologists and Technicians	17
Machinists	15
Mechanical Engineering Technologists and Technicians	14
Surveying and Mapping Technicians	10
Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	10
Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and ..	10
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	10
Sheet Metal Workers	9

Legend:
- High school diploma or equivalent
- Postsecondary nondegree award
- Associate's degree
- Bachelor's degree

SKILLED TRADES AND TECHNICIANS OCCUPATION GROUP

Wage Overview

Over half of the top ten in-demand Skilled Trades occupation offer median hourly wages above $20. Maintenance and Repair Workers, General, the top posted Skilled Trades job in Q4, offered a median hourly wage of $18.88, ($39,270 annually). Job seekers can expect to see a significant shift in wages based on experience and education requirements: Industrial Production Managers requires an additional five years or more of work experience and offers a median hourly wage of $56.74 ($118,019 annually).

Wage Overview for Top Posted Skilled Trades Jobs in Q4 2021

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	$12.72	$15.43	$18.88	$24.87	$30.80
51-9199	Production Workers, All Other	$10.06	$11.31	$13.57	$17.71	$23.42
51-1011	First-Line Supervisors of Production and Operating Workers	$19.65	$24.95	$32.79	$41.90	$52.82
11-3051	Industrial Production Managers	$34.06	$44.21	$56.74	$71.69	$89.17
11-3051	Industrial Production Managers	$34.06	$44.21	$56.74	$71.69	$89.17
17-3098	Calibration Technologists and Technicians	$17.74	$23.97	$35.47	$44.37	$52.35
17-3023	Electrical and Electronic Engineering Technologists and Technicians	$19.52	$24.57	$30.67	$35.34	$39.93
49-9041	Industrial Machinery Mechanics	$16.88	$21.11	$26.49	$32.12	$38.06
17-3024	Electro-Mechanical and Mechatronics Technologists and Technicians	$17.50	$20.54	$24.36	$32.01	$37.37
51-4111	Tool and Die Makers	$16.50	$21.16	$27.43	$33.60	$37.36

In-Demand Technical Skills

- Plumbing
- HVAC
- Field Service Management
- Machinery
- Preventive Maintenance

In-Demand Foundational Skills

- Communications
- Troubleshooting (Problem Solving)
- Valid Driver's License
- Operations
- Management

In-Demand Certifications

- American Society For Quality (ASQ) Certified
- Airport Security Clearance
- American Welding Society Certification
- ASNT Non-Destructive Tester
- Associate Degree In Nursing

In-Demand Education Level*

- High School Diploma: 40.4%
- Associate Degree: 16.6%
- Bachelor's Degree: 16.9%
- Master's Degree: 2.8%

Top Posting Employers

- Consumers Energy
- Diverse Staffing
- Xcel Staffing
- H.B. Fuller
- Dawn Food Products
- Schneider Electric
- The Related Group
- Elm Plating Company
- Eaton Corporation
- U. S. Staffing

Not all job postings indicate the required educational attainment level; the percentages indicated may not equal 100 percent.

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