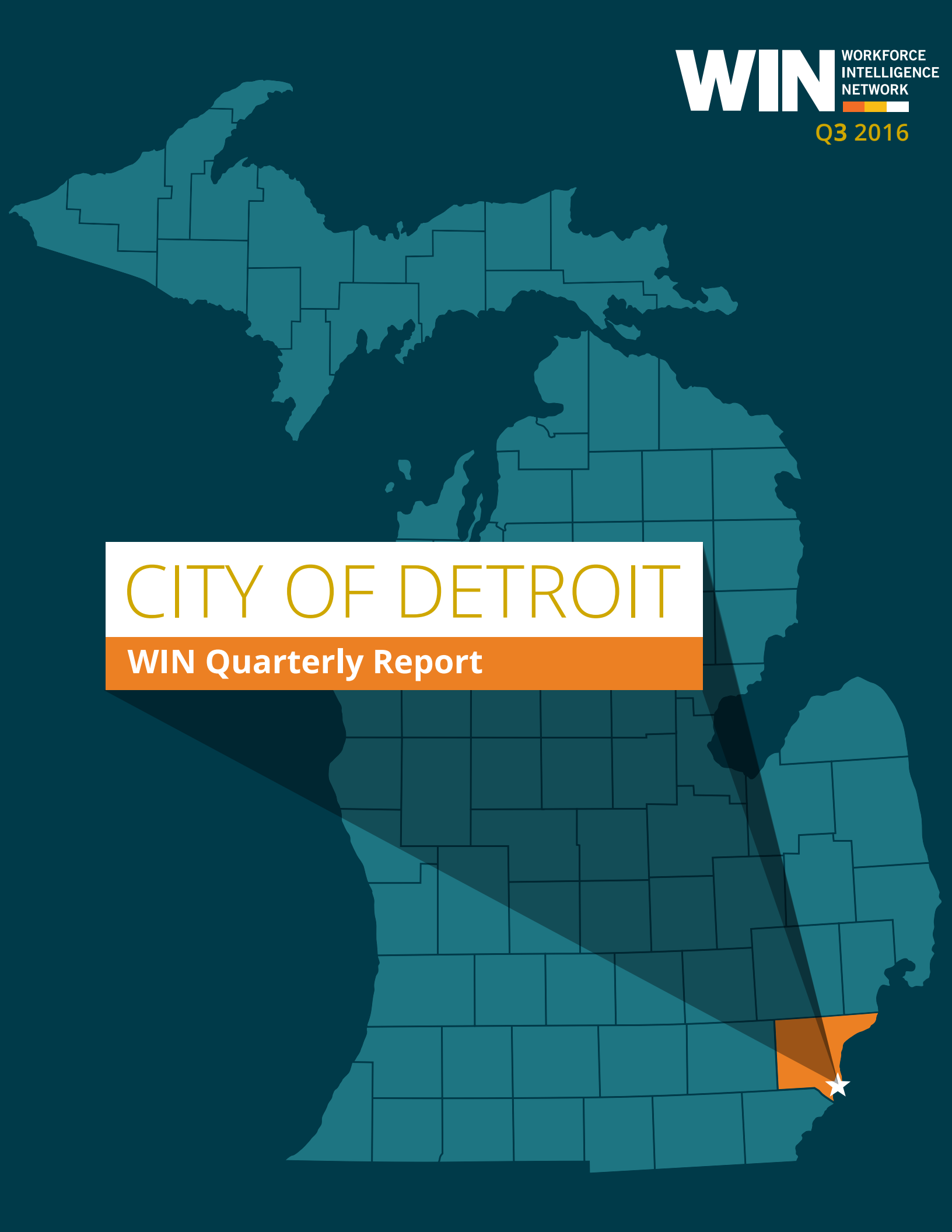


# CITY OF DETROIT

## WIN Quarterly Report





# Introduction: WIN 16 County Partnership Region

## 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 for the City of Detroit with special sections devoted to 5 occupational groups. WIN's analysis of online job postings, a proxy for employer demand, is a pioneering method for tracking the health of the labor market.

Occupational groups include:

- Business & finance (page 7)
- Energy (page 12)
- Health care (page 17)
- Information technology (page 22)
- Skilled trades & technicians (manufacturing focused) (page 27)

Data analyzed includes:

- |  |                                 |
|--|---------------------------------|
| • Employer demand                            | • Wages offered in job postings |
| • Top posting jobs                           | • Employment                    |
| • In-demand credentials, degrees, and skills | • Unemployment                  |
| • Educational attainment required            | • Labor force                   |



# Introduction: City of Detroit

## Key Findings

**While job postings in Health Care increased quarter by quarter in 2015 through Q1 2016, Q2 2016 has seen a slight drop in postings.**

In 2015, Q1 had 4,110 job postings within Health Care which steadily increased to 5,228 in Q1 2016. Despite a slight dip in Q2, this quarter Health Care has returned to the positive trend. Q3 2016 saw an increase of 5% from the previous quarter, climbing from 5,123 to 5,403 postings. See page 17 in the report for more information.

**Within Skilled Trades, Production workers, all other, has the highest wage growth potential**

Production workers, all other, has an entry-level wage of \$9.79 per hour which can increase up to \$33.71 per hour at the 90th percentile. The next highest wage growth potential is held by computer-controlled machine tool operators, metal and plastic. See page 31 in the report for more Skilled Trades wage information.

**While managers remained the top occupation within Energy, it does not have the highest entry-level wage.**

The occupation of managers has an entry level wage of \$28.09 per hour and a 90th percentile wage of \$70.17 per hour, which equates to \$145,953.60 per year. Despite the high wages for experienced managers, six of the other top ten occupations in Energy have a higher entry-level wage yet only one of those six have a higher 90th percentile wage. See page 16 in the report for more Energy wage information.

**The majority of employers posting for jobs are looking for students that have recently finished their undergraduate degree.**

Based on the Q3 2016 figures, job postings asking for a Bachelor's degree completely out-shadow job postings that ask for any other type of educational attainment. Most industries also overwhelmingly advertised to those with five or fewer years of experience. See educational attainment page for each occupation group.

**IT remains a lucrative field yet employers continue to struggle to fill open positions.**

With nearly 80% of job postings in Q3 2016 specifying salaries of over \$75,000 per year, it is evident that many employers in the City of Detroit are lacking the talent they need and are having to offer very rewarding salaries to attract and retain IT employees. See page 26 in the report for more IT wage information.



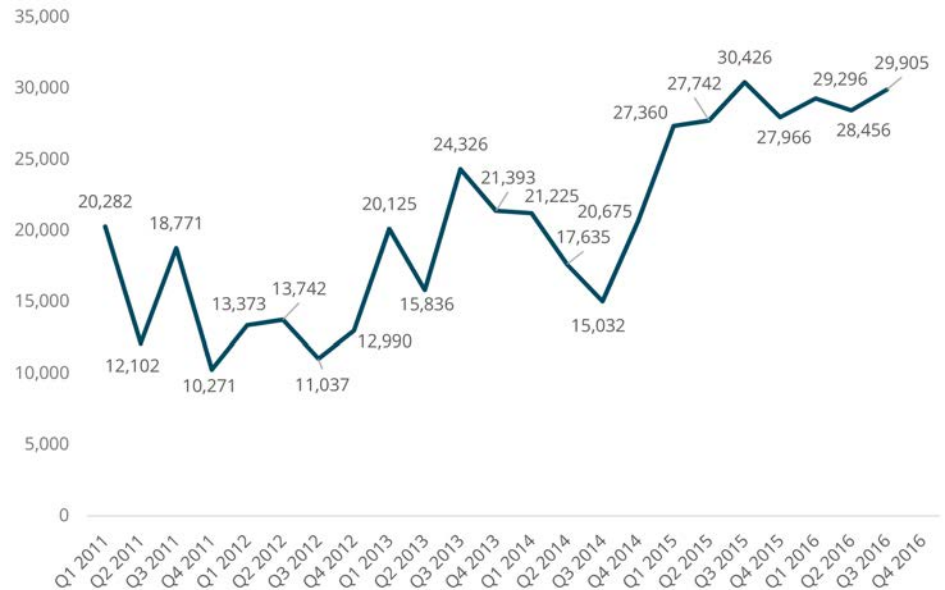
# Executive Summary

## Postings Over Time

Online job postings for all occupations in the City of Detroit increased slightly (2 percent) between Q2 and Q3 2016. After recovering from a low posting quarter in Q3 2014 (15,032 postings), job ads for positions open in the city have recovered to hover around the 30,000 mark over the past several quarters, indicating a steady state of demand.

## Total Online Job Postings

Q1 2011 - Q3 2016



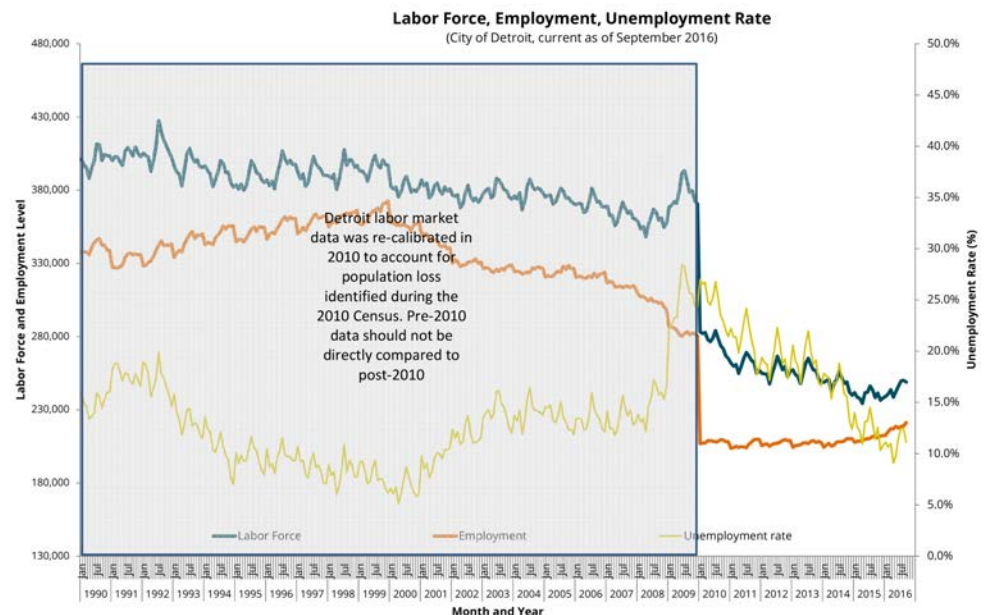
Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

## Labor Force, Employment, and Unemployment

The labor force in the City of Detroit grew two percent, adding over 16,000 job seekers, between Q2 and Q3 2016. Over the same period, employment grew just one percent, pushing the city's unemployment rate up from 5.9 percent in Q2 to 7.1 percent in Q3. Despite the quarterly fluctuations, both labor force and employment seem to be growing strong in the City of Detroit over the past several years. Annual unemployment rates in the city are down from 15.5 percent in 2010, to 6.5 percent for 2016 through Q3. It is important to note that this annual change only compares the year 2015 to 2016 to-date. See the labor market data tables on page 32 of this report for more details.

## Labor Force, Employment, Unemployment Rate

January 1990 - September 2016



Data: BLS  
Analysis: Workforce Intelligence Network





Q3 2016 postings in the City of Detroit were more than double Q3 2011, sitting at 29,905.

%

The unemployment rate to-date (January - September 2016) sits at 6.5%

### Top Jobs In Demand

Quarter 3 2016



### Analysis

Just as last quarter, the top in-demand occupation in the City of Detroit in Q3 of 2016 was registered nurses with 2,181 online job postings.



16,000 New job seekers in Q3



727,000 employees

### Top Jobs In Demand

Quarter 3 2016



### Analysis Continued

The occupations of software developers, applications retained their number two spot with 1,290 postings.



# Business & Finance

## Introduction

### Business & Finance

Jobs in the business and finance occupation group can be found in nearly every type of business and industry. 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 southeast Michigan.

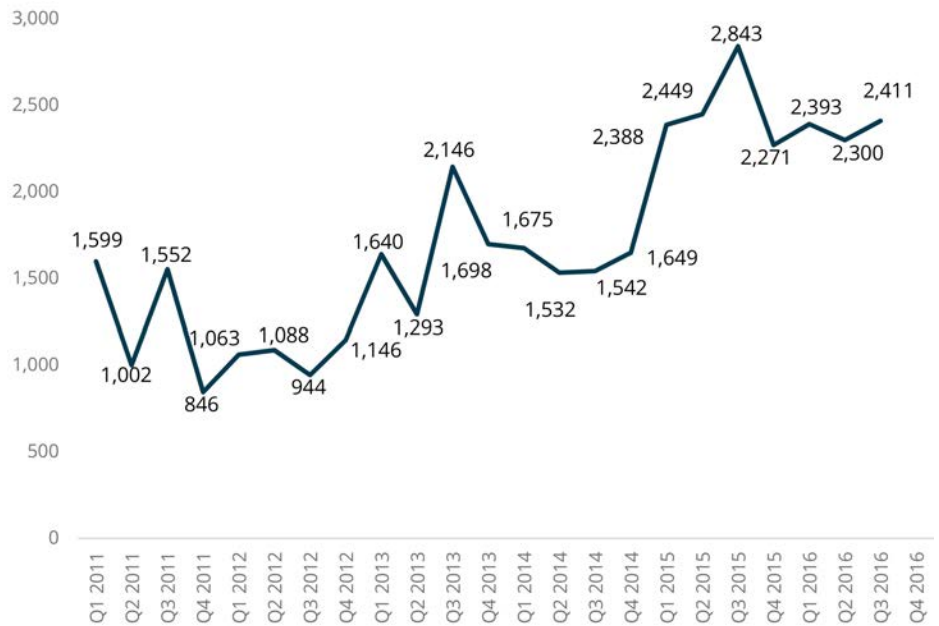
### Postings Over Time

Employer demand for workers in the Business & Finance group has grown over the analysis period from Q1 2011 to Q3 2016. Gauged by online job postings, demand grew five percent between Q2 and Q3 2016, from 2,300 to 2,411 postings.

### Employment Over Time

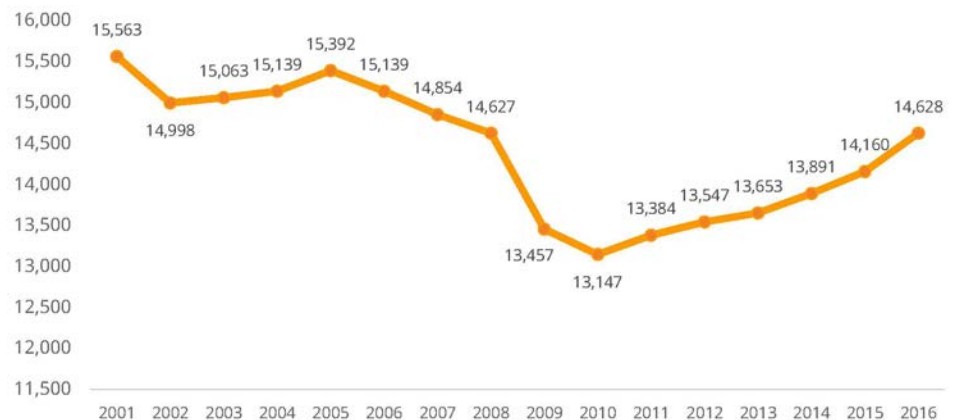
The generally growing demand for workers in Business & Finance has driven employment growth in these occupations in the City of Detroit. After employment reached a low during 2010 at 13,147 employees, employment levels have nearly returned to pre-recession levels. During 2016, 14,628 workers are employed in Business & Finance jobs in Detroit.

### Online Job Postings



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

### Employment Over Time



Data: EMSI, BLS  
Analysis: Workforce Intelligence Network



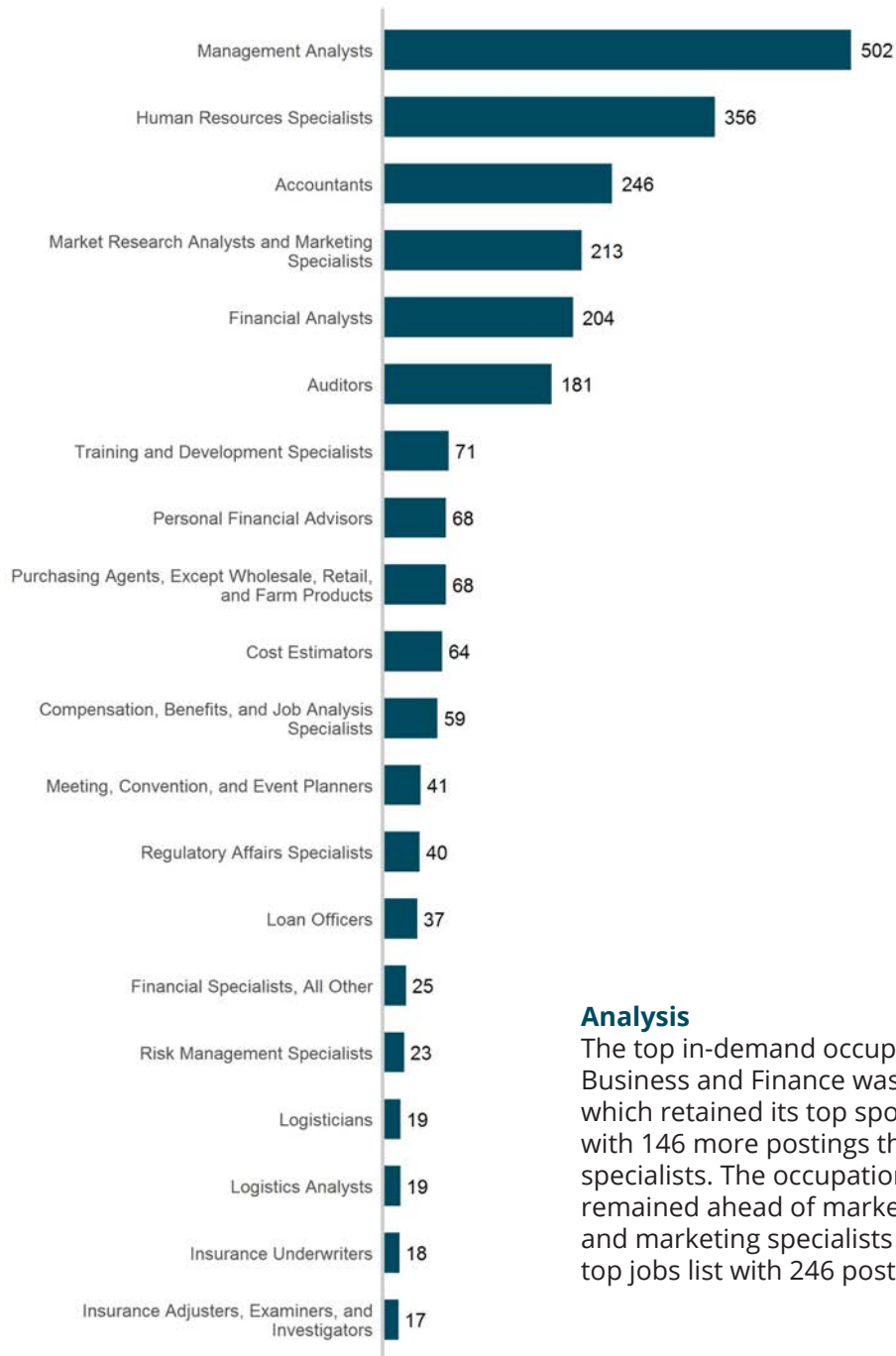
Now hiring: 2,400 job postings  
in Q3 2016



14,600 Business and Finance  
employees

### Business & Finance Top Jobs

Quarter 3 2016



#### Analysis

The top in-demand occupation related to Business and Finance was management analysts, which retained its top spot from earlier in 2016 with 146 more postings than human resources specialists. The occupation of accountants remained ahead of market research analysts and marketing specialists at third place in the top jobs list with 246 postings.



Nearly half of positions offered are full time



Management analysts retain number one spot in top jobs

### Business & Finance Educational Attainment & Experience Required

Of the 1,729 online job postings in Q3 2016 that specified a desired level of educational attainment, 86 percent required job candidates to hold a bachelor's degree. Some positions were open to candidates with a relevant associate's degree, but most Business & Finance jobs require 4-year degrees.

City of Detroit employers hiring Business & Finance workers during Q3 2016 were open to candidates with less than five years of experience. Only 1,533 of Q3 job postings specified a desired level of experience, but 85 percent of those were available to workers with less than 5 years of experience.

### Areas of Study in-Demand Q3 2016

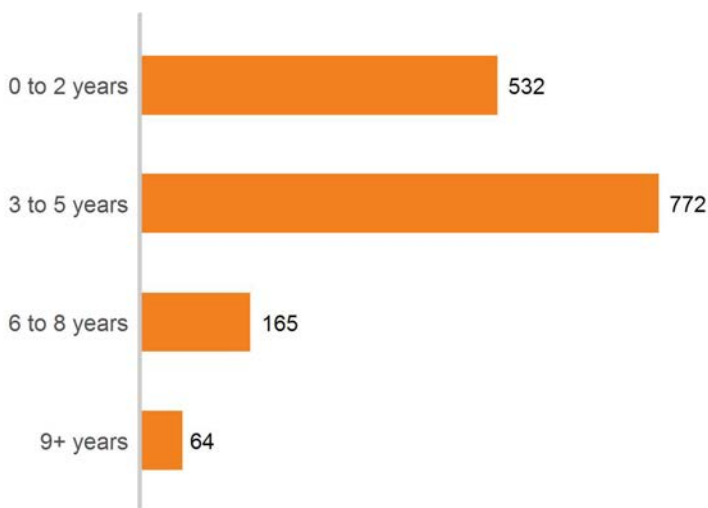
- Accounting
- Business Administration and Management
- Finance
- Economics
- Computer Science

### Minimum Educational Attainment Required Q3 2016



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

### Experience Required Q3 2016



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network



Economics is the fourth most popular area of study

%

86% of Business and Finance postings want a Bachelor's

### Business & Finance in-Demand Skills Q3 2016

The occupations in the Business and Finance group require various high-level technical skills. Many of the traditional skills like accounting, budgeting, project management, and business development, among others, are still present in the job postings. While technical skills are important as ever, they must be paired with more foundational skills that are of utmost importance to succeeding in a workplace. Many foundational skills include the ability to communicate, problem solve, plan, and have creative/analytical ability. These types of skills are essential for Business and Finance workers so that they can work effectively with peers in and outside of their respective organizations.

#### Technical in-Demand Skills

- Accounting, budgeting
- Microsoft Office
- Project management
- Financial analysis
- Scheduling

#### Foundational In-Demand Skills

- Communication skills
- Problem solving
- Writing
- Planning
- Teamwork, collaboration

#### Job Type

- Temporary: 2.7%
- Full-time: 46%
- Part-time: 1.8%

#### Certifications In-Demand

- Certified Public Accountant (CPA)
- Certified Information Systems Auditor (CISA)
- Project management certification (e.g. PMP)
- Financial Accounting Standards Board (FASB)
- Institute of Internal Auditors (IIA)

# 85%

Number of postings available with less than 5 years of experience



Financial analysts make over \$50k per year at entry level

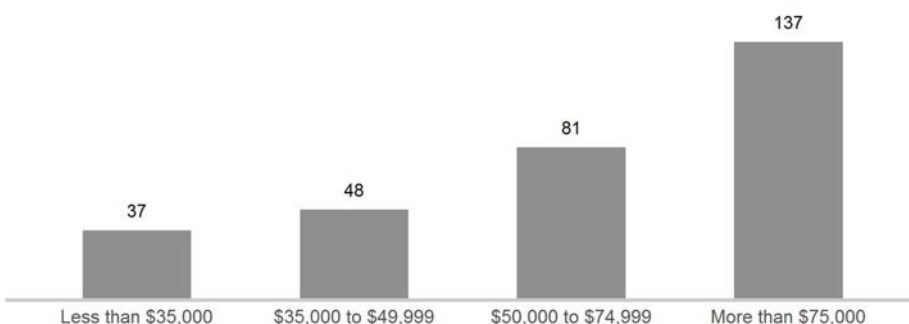
## Business & Finance

### Wages

Only 13 percent (303 postings) of Q3 Business & Finance job postings in Detroit advertised an hourly wage or annual salary. Of those that did, 72 percent advertised salaries greater than \$50,000 a year, 45 percent over \$75,000. Wage data from the Bureau of Labor Statistics affirm that many of the top in-demand Business & Finance occupations in Detroit can earn high hourly wages.

## Advertised Salaries

Quarter 3 2016



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

## Wage Data from Bureau of Labor Statistics 2015

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
13-1111	Management Analysts	\$21.43	\$29.24	\$37.26	\$47.50	\$57.79
13-1071	Human Resources Specialists	\$16.03	\$20.96	\$27.29	\$35.15	\$46.52
13-2011	Accountants	\$20.14	\$25.04	\$32.57	\$42.30	\$54.03
13-1161	Market Research Analysts and Marketing Specialists	\$20.63	\$27.03	\$37.55	\$50.75	\$60.50
13-2051	Financial Analysts	\$24.37	\$29.53	\$38.36	\$48.53	\$58.48
13-2011	Auditors	\$20.14	\$25.04	\$32.57	\$42.30	\$54.03
13-1051	Cost Estimators	\$19.51	\$22.55	\$29.67	\$41.14	\$47.58
13-1151	Training and Development Specialists	\$16.02	\$19.87	\$25.67	\$34.58	\$44.46
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	\$19.66	\$23.66	\$32.72	\$46.82	\$56.63
13-2052	Personal Financial Advisors	\$14.73	\$20.33	\$29.25	\$61.06	\$75.86

Data: EMSI, BLS  
Analysis: Workforce Intelligence Network



## Introduction

### Energy

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.

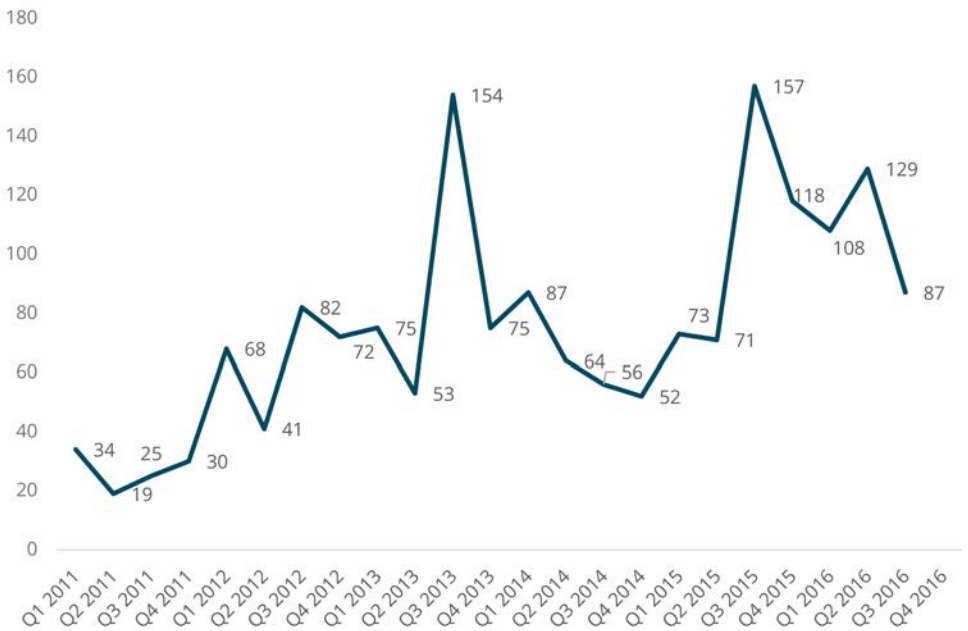
### Postings Over Time

Compared to other occupation groups, postings for Energy occupations are low and, therefore, appear more volatile. Employer demand for Energy workers, as gauged by online job postings, fluctuate from quarter to quarter. Postings in Q3 2016 are down 48 percent from 129 postings in Q2. Demand, though small in comparison to other occupations, has generally grown over the analysis period beginning in 2011.

### Employment Over Time

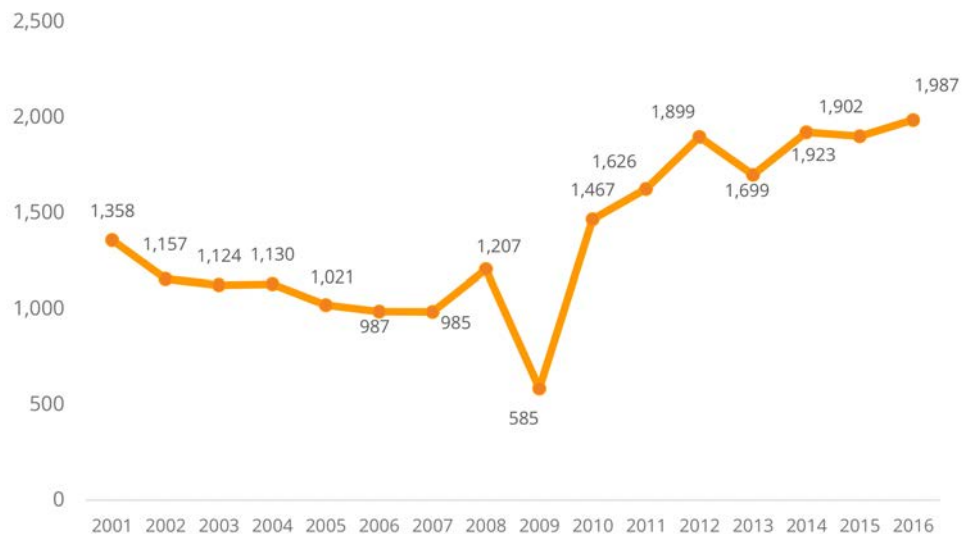
The data presented in the graph to the right represents the City of Detroit's total employment in the Energy industries. Like many other occupation groups and industries, employment in the Energy industries in Detroit declined during the Great Recession, shedding 622 of 1,207 employees from 2008 to 2009. Employment has made a swift recovery, with employment over the past six years surpassing pre-recession levels.

### Online Job Postings



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

### Employment Over Time



Data: EMSI, BLS  
Analysis: Workforce Intelligence Network

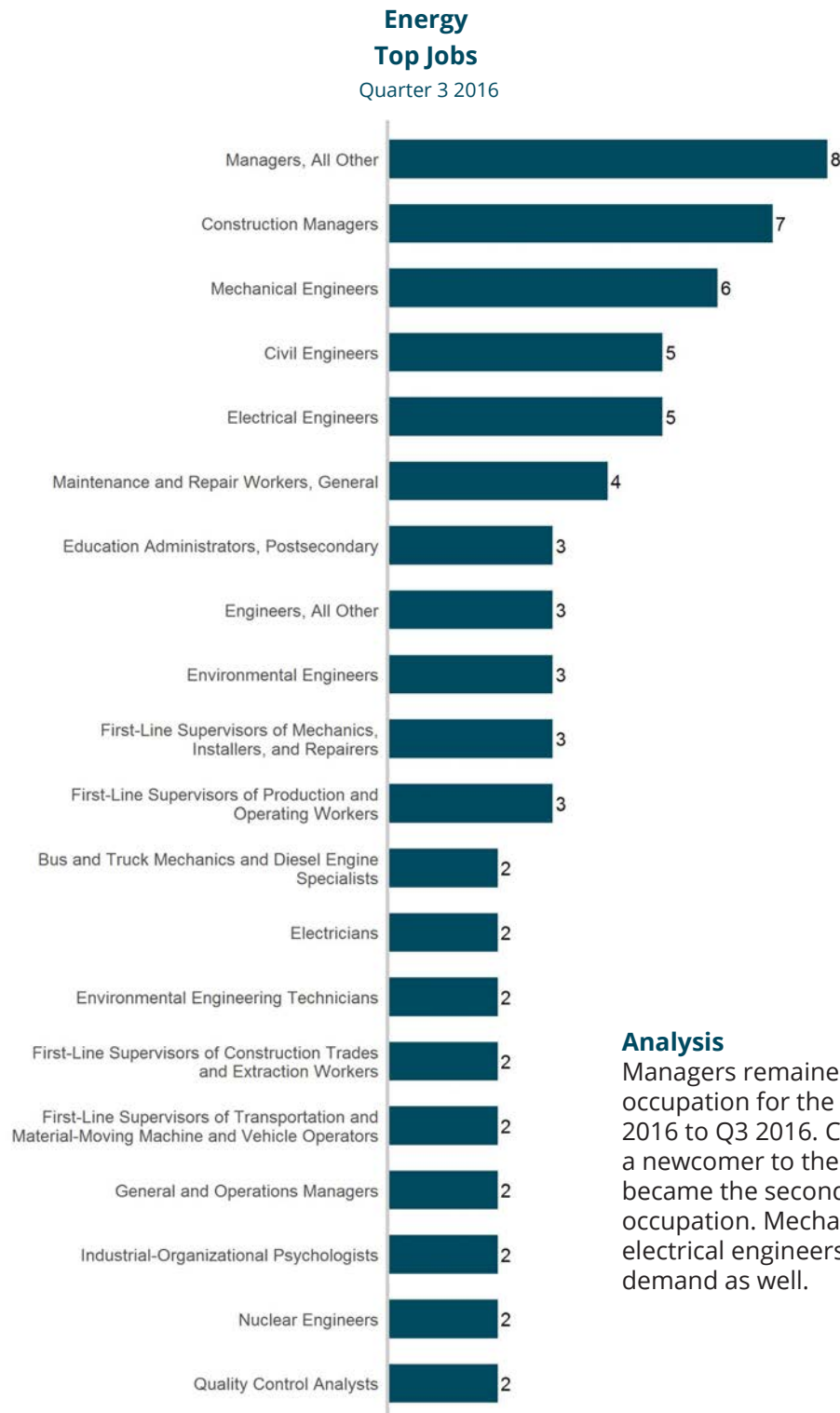




Job postings up 81% compared  
to Q2 2015



Architectural and engineering managers  
is a new top 20 in demand occupation



### Analysis

Managers remained the top in-demand occupation for the City of Detroit from Q1 2016 to Q3 2016. Construction managers, a newcomer to the top twenty in Q2, became the second most posted occupation. Mechanical, civil, and electrical engineers remain in high demand as well.



Construction managers  
experiencing rapid demand  
increase

%

Only 12.5% of postings ask for an  
associate's

### Energy Educational Attainment & Experience Required

Most Energy job postings from Q3 2016 required job candidates to hold a bachelor's degree. The high demand for engineers and managers in this occupation group necessitates higher educational attainment – 57 percent of Q3 job ads required a bachelor's degree. Another 40 percent of Energy positions were open to candidates completing relevant post-secondary training programs or an associate's degree.

The demand for managers in the Energy group is also reflected in experience requirements. Fifty-five percent of Q3 job postings specified a desired level of experience. Of those that did, most preferred candidates with more than three years of experience.

### Areas of Study in-Demand Q2 2016

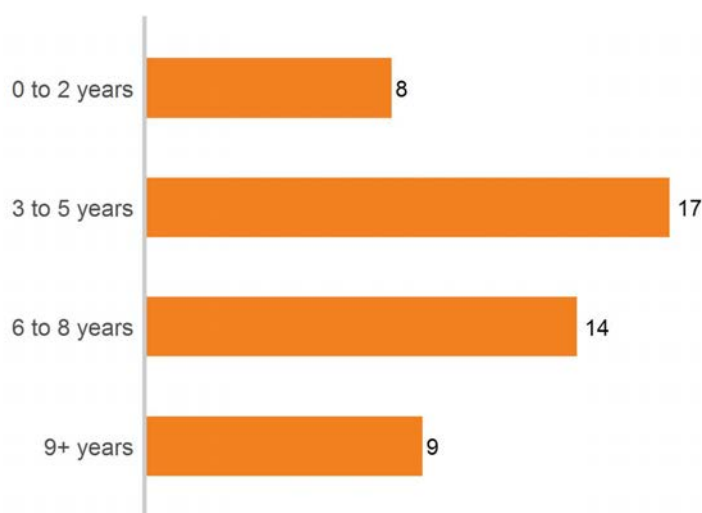
- Engineering technology
- Business administration and management
- Mechanical engineering
- Electrical and electronic engineering technologies
- Construction management

### Minimum Educational Attainment Required Q3 2016



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

### Experience Required Q3 2016



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network



Managers retains top spot over engineering positions



Chemistry is the sixth most popular area of study

## Energy in-Demand Skills Q3 2016

The high demand for managers in the Energy occupation group is again reflected in the technical skills specified in job postings. Q3 2016 job postings cited supervisory skills and project management experience as critical for success in open positions. Employers hiring workers in the Energy group often post employability skills like problem solving and communication in their advertisements. These types of skills are crucial for Energy group workers so that they can collaborate effectively, especially in high-demand supervisor roles.

### Technical in-Demand Skills

- Budgeting
- Scheduling
- Project management
- Supervisory skills
- Schematic diagrams

### Foundational In-Demand Skills

- Problem solving
- Communication skills
- Planning
- Writing
- Computer skills

### Job Type

- Temporary: data not available
- Full-time: 39.1%
- Part-time: data not available

### Certifications In-Demand

- Project management certification (e.g. PMP)
- Certified construction manager
- Six Sigma (Yellow Belt, Black Belt)
- Certified industrial maintenance mechanic
- Auditor certification



Out of eight advertised salaries,  
seven offer over \$75k per year



Auditor is the sixth most popular  
certification

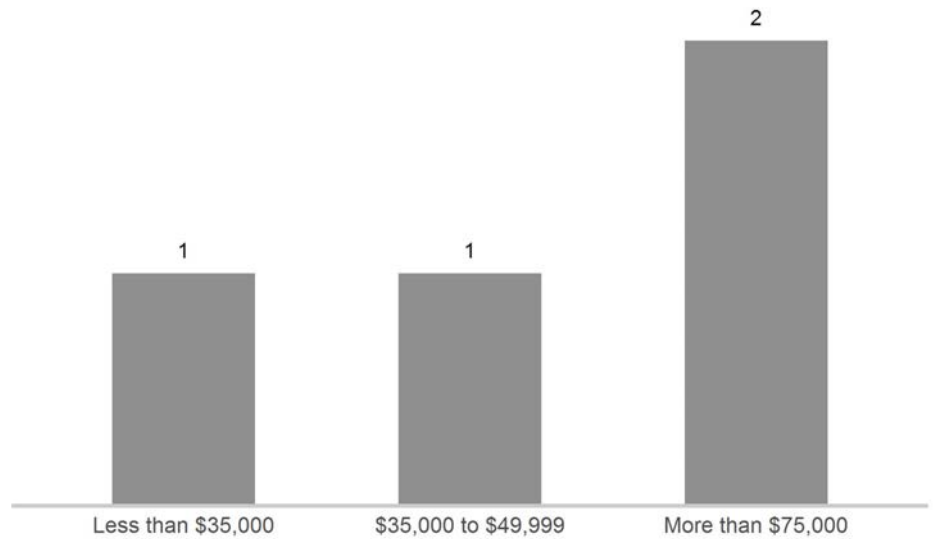
## Energy

### Wages

Just 4 Q3 2016 job postings in the Energy group advertised an hourly wage or annual salary, two of which amounted to over \$75,000. In the absence of data from job postings, wage data from the Bureau of Labor Statistics illustrates that many in-demand Energy jobs, like managers and various engineering roles, have the potential to make high hourly wages at the median.

## Advertised Salaries

Quarter 3 2016



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

## Wage Data from Bureau of Labor Statistics 2015

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
11-9199	Managers, All Other	\$28.09	\$34.81	\$44.94	\$56.00	\$70.17
11-9021	Construction Managers	\$31.83	\$35.76	\$43.01	\$52.13	\$69.96
17-2141	Mechanical Engineers	\$30.78	\$37.88	\$45.75	\$54.15	\$60.64
17-2051	Civil Engineers	\$23.54	\$27.30	\$32.96	\$39.40	\$47.82
17-2071	Electrical Engineers	\$30.75	\$36.50	\$43.99	\$51.85	\$58.50
49-9071	Maintenance and Repair Workers, General	\$10.12	\$13.06	\$18.24	\$23.35	\$28.58
11-9033	Education Administrators, Postsecondary	\$21.56	\$28.33	\$39.77	\$58.33	\$82.75
17-2199	Engineers, All Other	\$31.18	\$38.27	\$45.35	\$54.67	\$64.07
17-2081	Environmental Engineers	\$29.02	\$38.20	\$45.72	\$54.09	\$60.28
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$16.15	\$22.03	\$29.37	\$38.95	\$47.27

Data: EMSI, BLS  
Analysis: Workforce Intelligence Network

## Introduction

### Health Care

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.

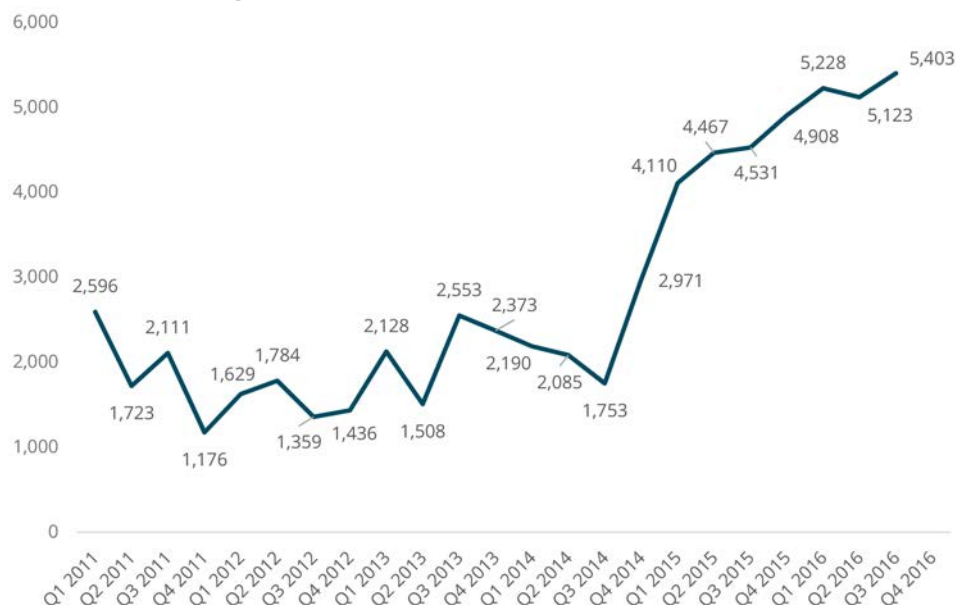
### Postings Over Time

Demand for Health Care workers continues to grow in the City of Detroit. Postings for these occupations grew an additional five percent between Q2 and Q3 2016, reaching a new high of 5,403 postings across the analysis period beginning in Q1 2011. The continued growth in job postings reflects an unmet demand for Health Care workers in Detroit and across southeast Michigan and the country.

### Employment Over Time

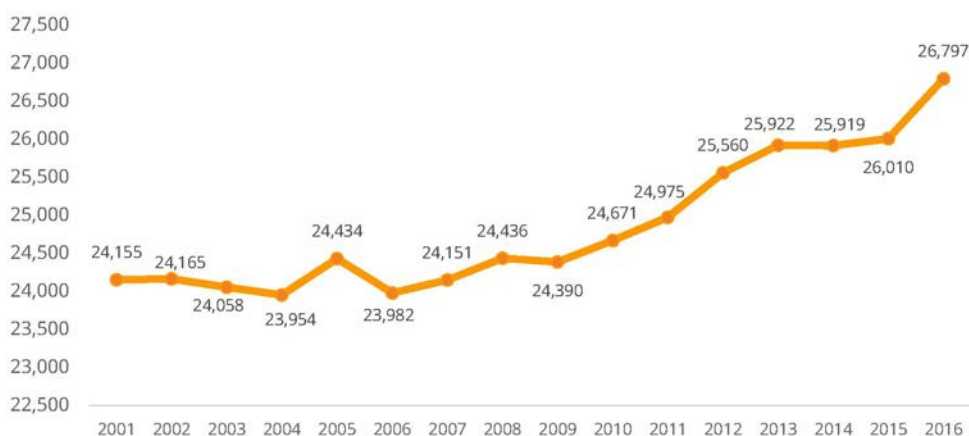
Employment in Health Care industries has remained strong and continued to grow in the City of Detroit over the past 15 years. In 2016, nearly 27,000 workers are employed in a Health Care occupation. Continued demand from employers has the potential to drive more employment growth, only if the qualified candidates exist.

### Online Job Postings



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

### Employment Over Time



Data: EMSI, BLS  
Analysis: Workforce Intelligence Network

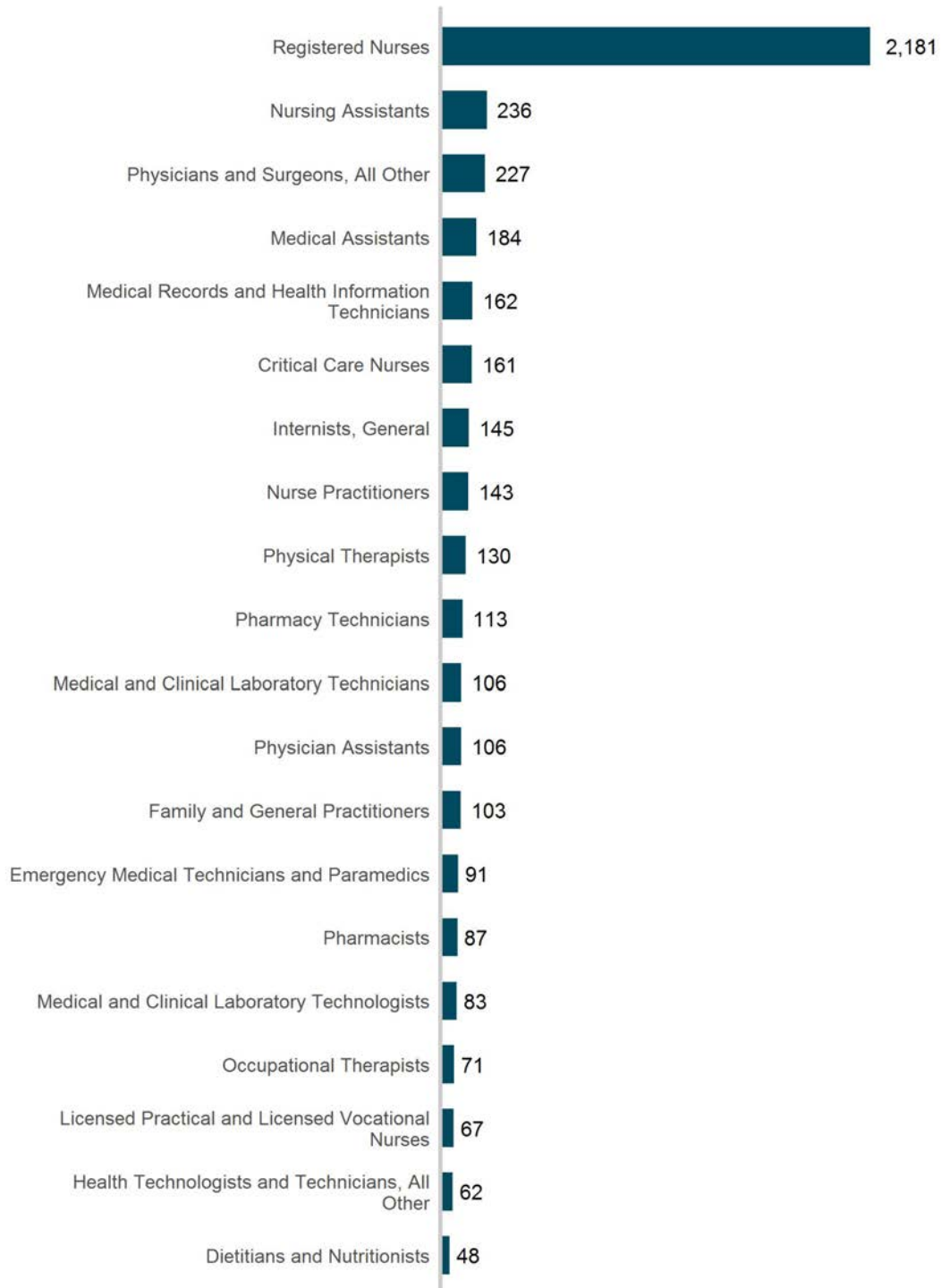


27,000 Health Care  
employees

%

5% increase in postings from Q2  
2016 to Q3 2016

**Health Care  
Top Jobs**  
Quarter 3 2016





## Most postings available to entry level workers



## Registered nurses continues its top job dominance

### Health Care Educational Attainment & Experience Required

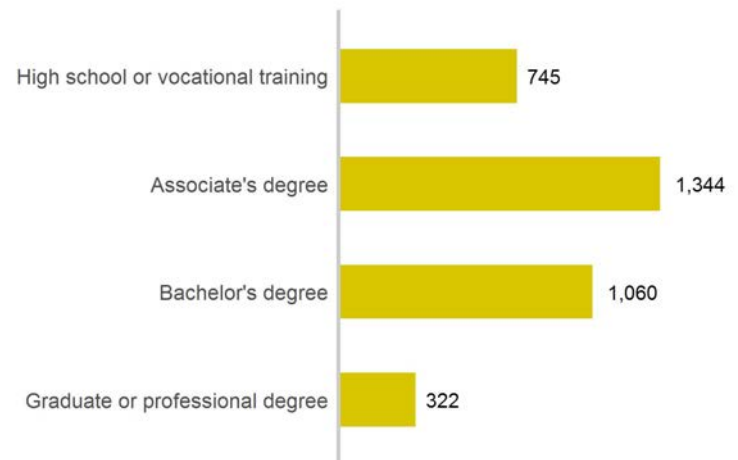
Of the 3,471 online job postings for Health Care occupations in the City of Detroit during Q3 2016, most required some type of post-secondary degree for employment. Thirty-nine percent of postings required an associate's degree; candidates with a two-year degree are eligible to work as a medical assistant, for example. Many employers prefer nurses with a bachelor's degree; 31 percent of Q3 Health Care postings required a four-year degree.

Many of Detroit's Health Care positions are open to jobseekers with less than two years of experience in the industry. Of job postings that specified a desired level of experience, over 2,000 were for entry-level, zero to two years of experience.

### Areas of Study in-Demand Q2 2016

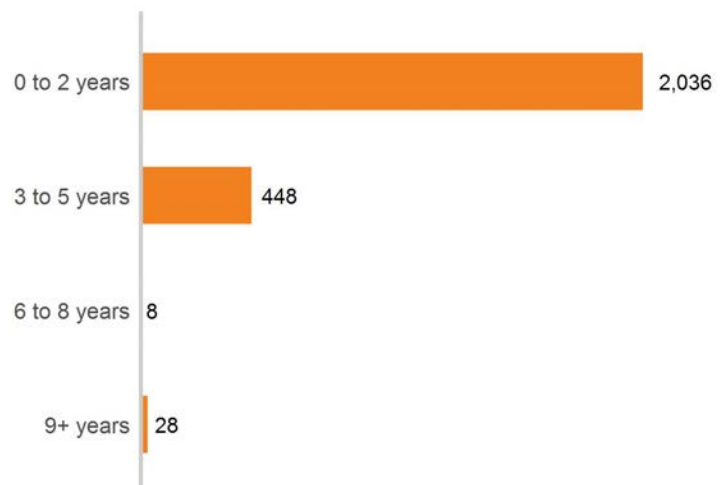
- Nursing Science
- Physical therapy/therapist
- Business administration and management, general
- Social Work
- Clinical/medical laboratory technician

### Minimum Educational Attainment Required Q3 2016



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

### Experience Required Q3 2016



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network



\$67,136 is average advertised salary



First Aid CPR AED is the third most popular certification

## Health Care in-Demand Skills Q2 2016

The occupations in the Health Care group require a wide array of high-level technical skills. Traditional skills like patient care, CPR, and treatment planning are still present in Health Care job postings. The continuous demand for registered nurses in Health Care occupations in the City of Detroit is demonstrated in the posting for skill sets like patient evaluation, and supervisory skills. While Health Care workers now need advanced technical skills, they also need to maintain more traditional foundational skills critical to succeeding in a workplace. Employers hiring Health Care workers often post employability skills like teamwork and collaboration, multi-tasking, and decision making their advertisements. These types of skills are crucial for Health Care occupations so that they can collaborate effectively and especially in high-demand supervisor roles.

### Technical in-Demand Skills

- Patient care, treatment planning
- Teaching, patient/family education and instruction
- Supervisory skills
- Patient evaluation and progress monitoring
- Cardiopulmonary resuscitation (CPR)

### Foundational In-Demand Skills

- Communication skills
- Teamwork, collaboration, building effective relationships
- Mentoring
- Planning
- Writing

### Job Type

- Temporary: 11.6%
- Full-time: 47.1%
- Part-time: 5.8%

### Certifications In-Demand

- Registered nurse
- Critical care registered nurse (CCRN)
- First Aid CPR AED
- American Heart Association Certificate
- Basic cardiac life support





Medicine is the sixth most popular area of study



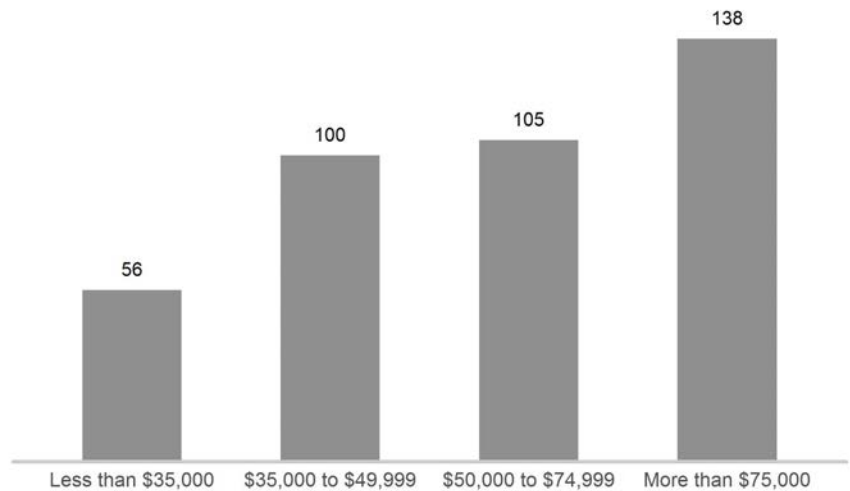
Nurse practitioners can make over \$60k per year at entry level

## Health Care Wages

With varying educational and experience requirements among the Health Care occupations, employers in Detroit advertise a range of annual salaries – the distribution for Q3 2016 can be seen at the right. Only 399 (7 percent of Q3 ads) job postings advertised an hourly wage or annual salary. Data from job postings can be augmented by wage data from the Bureau of Labor Statistics to show that Health Care professions requiring higher educational attainment, like nurse practitioners and physical therapists, earn higher median hourly wages.

## Advertised Salaries

Quarter 3 2016



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

## Wage Data from Bureau of Labor Statistics 2015

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
29-1141	Registered Nurses	\$25.32	\$28.40	\$32.70	\$36.57	\$42.94
31-1014	Nursing Assistants	\$10.61	\$12.14	\$13.47	\$14.83	\$17.26
29-1069	Physicians and Surgeons, All Other	\$22.63	\$28.85	\$73.96	\$90.00	\$141.35
31-9092	Medical Assistants	\$10.08	\$11.59	\$13.30	\$15.21	\$17.93
29-2071	Medical Records and Health Information Technicians	\$11.47	\$13.25	\$16.13	\$20.06	\$25.00
29-1141	Critical Care Nurses	\$25.32	\$28.40	\$32.70	\$36.57	\$42.94
29-1063	Internists, General	\$21.87	\$67.90	\$88.12	\$98.82	\$162.86
29-1171	Nurse Practitioners	\$29.82	\$38.83	\$44.71	\$52.87	\$59.63
29-1123	Physical Therapists	\$27.63	\$33.97	\$40.41	\$46.57	\$60.86
29-2052	Pharmacy Technicians	\$9.06	\$12.25	\$15.18	\$17.65	\$20.12

Data: EMSI, BLS  
Analysis: Workforce Intelligence Network

# Information Technology (IT)

## Introduction

### Information Technology (IT)

Information technology 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 meet the employment levels of the others, it is quickly growing.

### Postings Over Time

Online job ads for occupations related to IT increased an additional two percent between Q2 and Q3 2016, from 4,285 to 4,375 postings. Demand for IT workers in the City of Detroit is volatile, fluctuating from quarter to quarter, though demand has generally grown over the analysis period beginning in Q1 2011.

### Employment Over Time

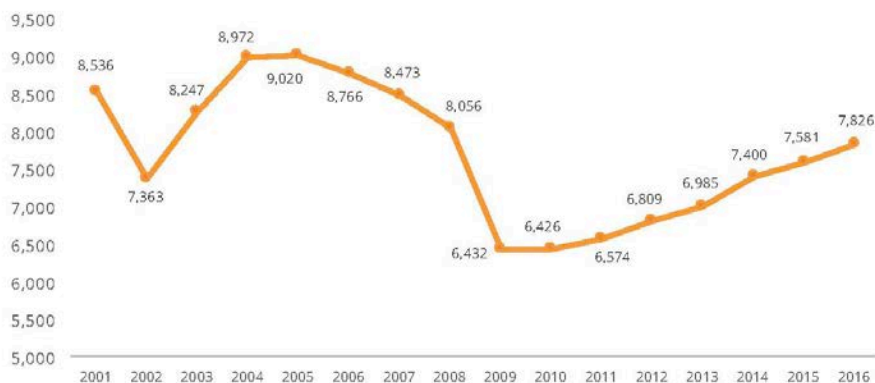
As in other parts of southeast Michigan and in other occupation groups, employment for the IT occupations declined during the Great Recession. Employment reached its lowest point in 2009, with 6,426 people employed in IT occupations in the City of Detroit. Employment has grown each year since 2009, nearing pre-recession levels, with 7,826 employees in 2016.

### Online Job Postings



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

### Employment Over Time



Data: EMSI, BLS  
Analysis: Workforce Intelligence Network



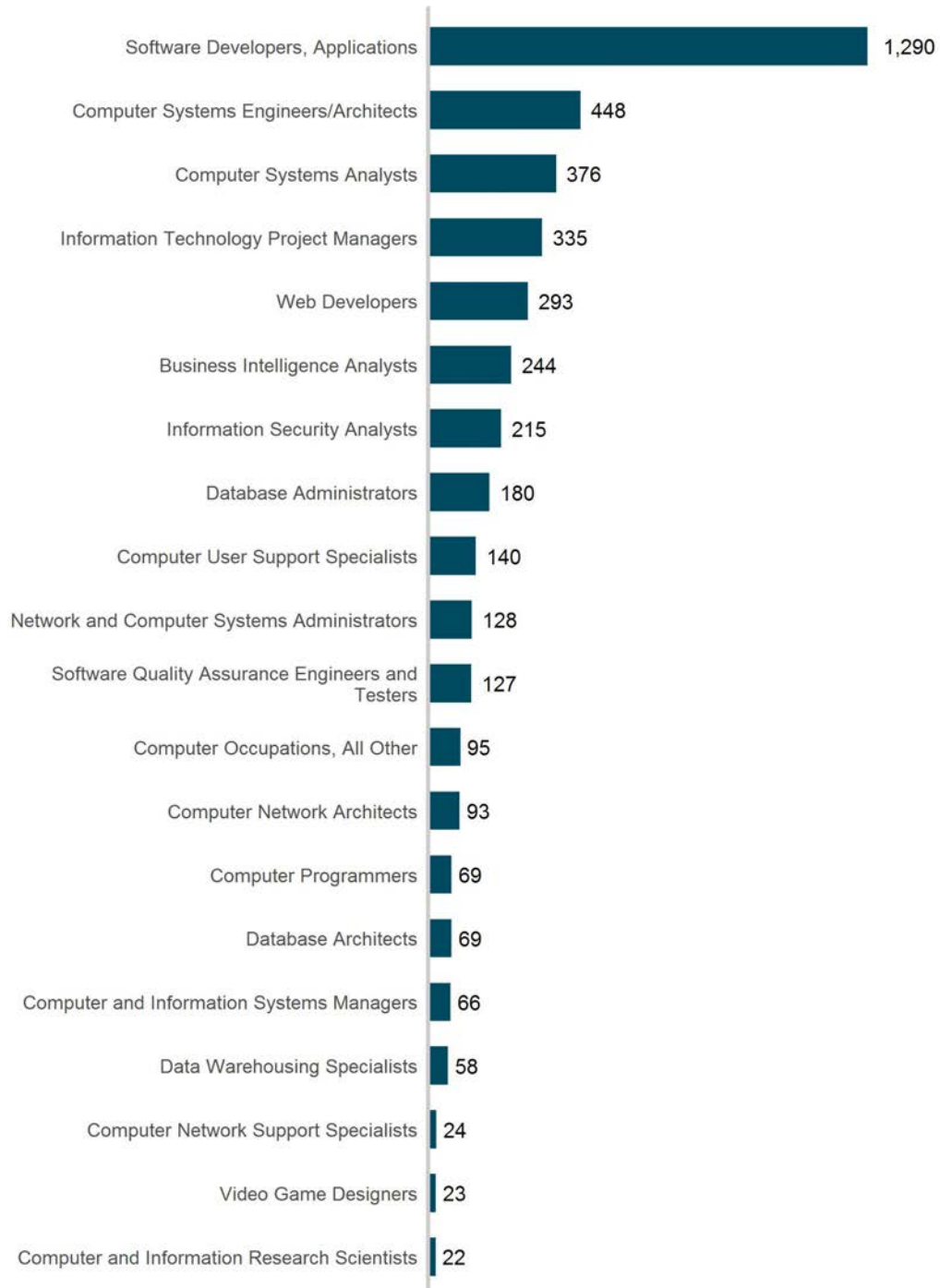
4,400 IT job postings in Q3  
2016



Software developers retains its top  
spot

### Information Technology (IT) Top Jobs

Quarter 3 2016





Most postings require a bachelor's degree

%

IT job postings up 2% from Q2 2016

### Information Technology (IT) Educational Attainment & Experience Required

Of the 2,719 IT group job postings that specified a desired level of educational attainment during Q3 2016, 95 percent required applicants to have a bachelor's degree. The high educational attainment requirements in this group are often translated into high wages, as seen in the following pages.

Most IT occupations in Detroit also prefer candidates with experience in the field. Eighty-three percent of Q3 2016 job ads specified a desired experience level of at least 3 years. Five hundred Q3 postings, however, were open to entry level workers with less than 2 years of experience.

### Areas of Study in-Demand Q3 2016

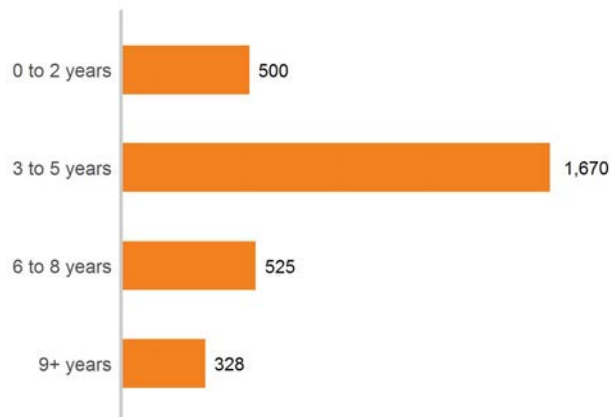
- Computer science
- Engineering, general
- Business administration and management, general
- Electrical and electronic engineering technologies
- Information technology

### Minimum Educational Attainment Required Q3 2016



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

### Experience Required Q3 2016



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network



Over half of positions were available for less than 5 years of experience



Computer science, engineering, and management degrees popular

### Information Technology (IT) in-Demand Skills Q2 2016

The occupations in the IT group require a wide array of high-level technical skills. Advanced technical skills like SQL and Java, among others, appear on Q3 2016's skills list. While IT workers continue to need advanced technical skills, they also need to maintain more traditional foundational skills critical to succeeding in a workplace. Employers hiring IT workers stress the importance of employability skills like analytical ability, communication, problem solving, and multi-tasking in their advertisements. These types of skills are crucial for IT workers so that they can collaborate effectively and especially in high-demand supervisory roles.

#### Technical in-Demand Skills

- SQL, JavaScript, Oracle
- Software development
- Project management
- Software engineering
- Information systems

#### Foundational In-Demand Skills

- Communication skills
- Writing
- Problem solving, troubleshooting
- Teamwork, collaboration
- Planning and creativity

#### Job Type

- Temporary: 3.1%
- Full-time: 45%
- Part-time: 1.1%

#### Certifications In-Demand

- Certified Information Systems Security Professional (CISSP)
- Project management certification (e.g. PMP)
- Certified Information Systems Auditor (CISA)
- SANS/GIAC certification
- IT Infrastructure Library



The lowest paid top ten job still makes over \$78k per year at the 90th percentile

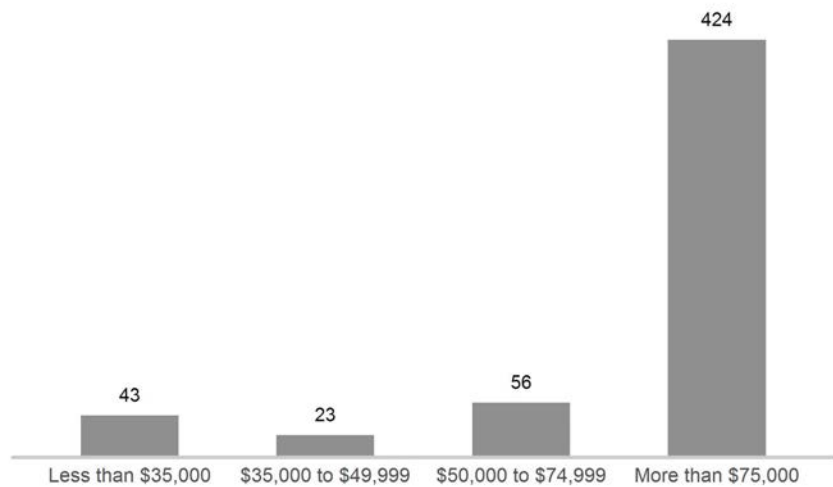


The most popular certification is Certified Information Systems Security Professional (CISSP)

## Information Technology (IT) Wages

Just 546 Q3 2016 IT job postings advertised an hourly wage or annual salary. Of those that did, the majority (78 percent) advertised salaries over \$75,000 a year. The high educational attainment required of workers in this occupation group translates to high earnings. Wage data from the Bureau of Labor Statistics outline high median wages for the most in-demand IT workers in the City of Detroit, with many top occupations earning over \$40 an hour.

## Advertised Salaries Quarter 3 2016



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

## Wage Data from Bureau of Labor Statistics 2015

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
15-1132	Software Developers, Applications	\$28.67	\$37.52	\$46.28	\$55.91	\$65.26
15-1199	Computer Systems Engineers/Architects	\$23.48	\$31.56	\$41.17	\$53.26	\$61.24
15-1121	Computer Systems Analysts	\$29.75	\$35.61	\$42.91	\$51.78	\$60.85
15-1199	Information Technology Project Managers	\$23.48	\$31.56	\$41.17	\$53.26	\$61.24
15-1134	Web Developers	\$17.61	\$22.03	\$30.41	\$38.49	\$44.23
15-1199	Business Intelligence Analysts	\$23.48	\$31.56	\$41.17	\$53.26	\$61.24
15-1122	Information Security Analysts	\$22.95	\$28.61	\$38.48	\$48.88	\$58.26
15-1141	Database Administrators	\$25.96	\$35.46	\$44.91	\$52.95	\$58.47
15-1151	Computer User Support Specialists	\$12.26	\$15.56	\$21.85	\$29.42	\$37.60
15-1142	Network and Computer Systems Administrators	\$21.84	\$27.95	\$37.57	\$45.58	\$53.28

Data: EMSI, BLS  
Analysis: Workforce Intelligence Network





# Skilled Trades & Technicians (Manufacturing Focused)

## Introduction

### Skilled Trades & Technicians

WIN's technicians/skilled trades category includes jobs related to advanced manufacturing. Southeast 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.

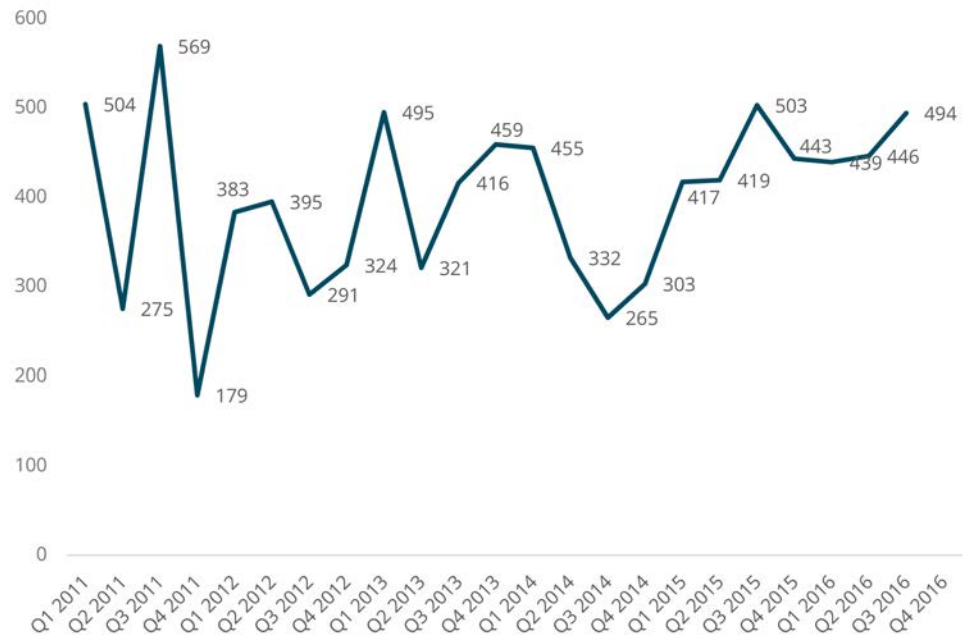
### Postings Over Time

Online job demand for Skilled Trades workers in Detroit is up 11 percent between quarters, from 446 postings in Q2 to 494 in Q3 2016. Job postings in this occupation group can tend to be quite volatile, as seen in earlier quarters of the analysis period beginning in 2011. Following a drop in quarterly postings in late 2014, Skilled Trades job demand has recovered in Detroit and job postings average between 450 and 500 postings per quarter.

### Employment Over Time

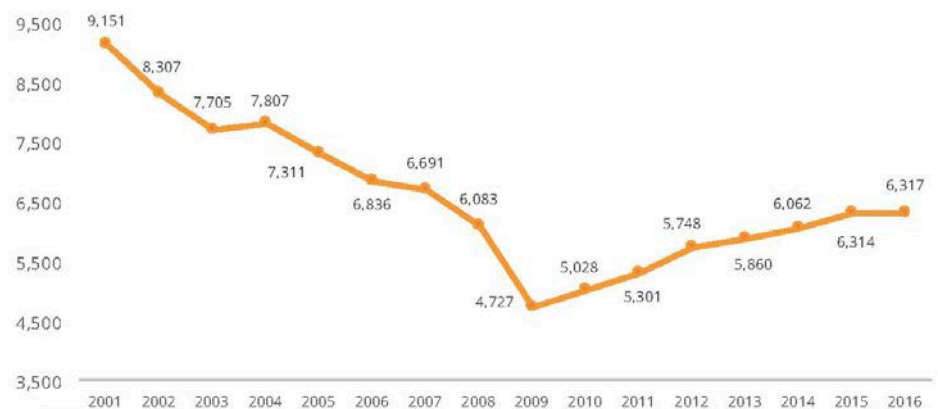
Although employment in the Skilled Trades occupations has been on decline in Detroit for far longer, this occupation group was especially hard hit by the Great Recession. Employment reached a low of 4,727 employees in 2009 and is making a slow recovery. During 2016, 6,317 Detroit workers are employed in a Skilled Trades position.

### Online Job Postings



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

### Employment Over Time



Data: EMSI, BLS  
Analysis: Workforce Intelligence Network



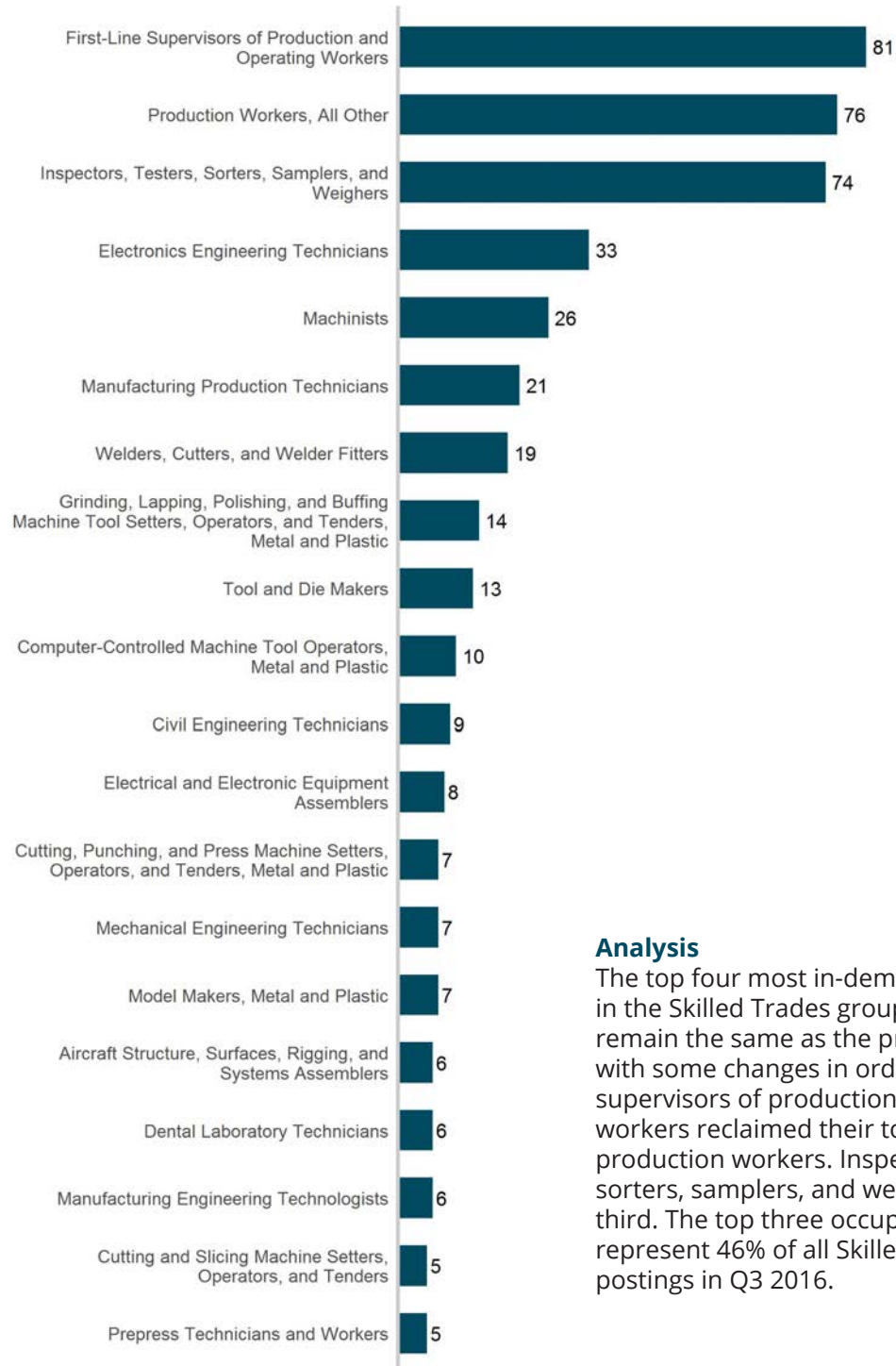
500 Online Job Postings



11% increase in employer demand from Q2 to Q3

### Skilled Trades & Technicians Top Jobs

Quarter 3 2016



#### Analysis

The top four most in-demand occupations in the Skilled Trades group in Q3 2016 remain the same as the previous quarter with some changes in order. The first-line supervisors of production and operating workers reclaimed their top spot from production workers. Inspectors, testers, sorters, samplers, and weighers came in third. The top three occupations also represent 46% of all Skilled Trades job postings in Q3 2016.





Most positions request high school or vocational training

%

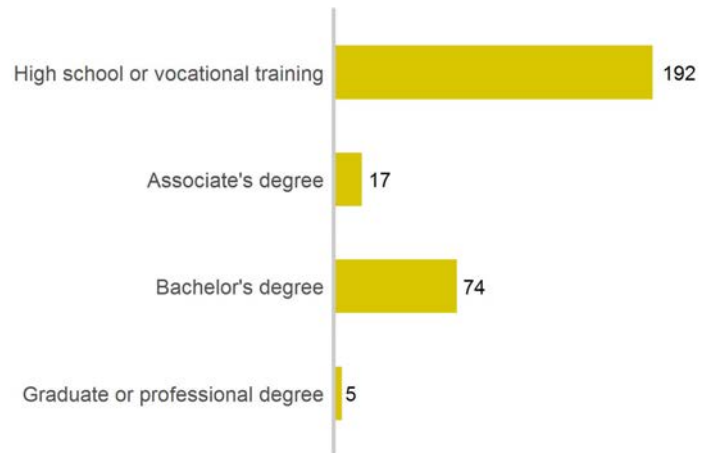
84% of postings were available for workers with less than 5 years of experience

### Skilled Trades & Technicians Educational Attainment & Experience Required

Many Skilled Trades positions in Detroit are open to jobseekers with relevant training or an associate's degree. Of the Q3 2016 job postings that specified a required level of educational attainment, 73 percent were open to candidates with some post-secondary training or a related two-year degree. Another 26 percent of job postings required candidates to hold a bachelor's degree.

Most Skilled Trades jobs in the City of Detroit can be viewed as entry-level positions. Forty-five percent of Q3 2016 postings are open to workers with less than two years of experience in the Skilled Trades. The majority of postings (84 percent) desired candidates with less than 5 years of experience.

### Minimum Educational Attainment Required Q3 2016

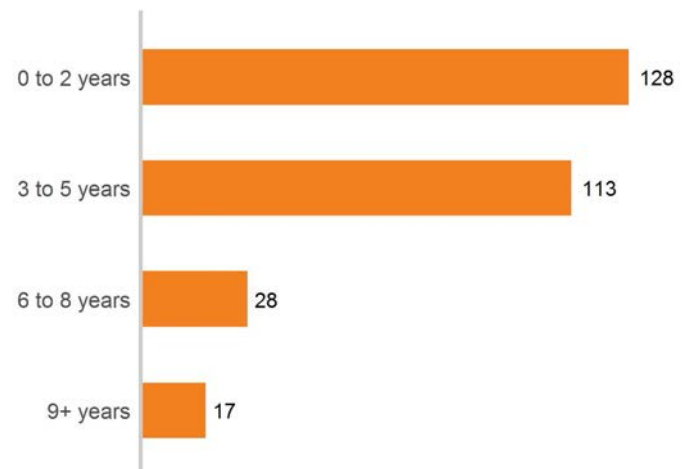


Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

### Areas of Study in-Demand Q3 2016

- Engineering, general
- Business administration and management
- Computer science
- Electrical and electronic engineering technologies
- Mechanical engineering

### Experience Required Q3 2016



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network



First line supervisors of  
production workers take  
back top job spot



The sixth most popular area of  
study was Automotive Engineering  
Technology/Technician

### Skilled Trades & Technicians in-Demand Skills Q3 2016

The occupations in the Skilled Trades group require a wide array of high-level technical skills. Traditional skills like machining and welding are still present in Skilled Trades job postings. While Skilled Trades workers need these technical skills, they also need to maintain more traditional foundational skills critical to succeeding in a workplace. Employers hiring Skilled Trades workers often post for employability skills like communication, troubleshooting, multi-tasking, and creativity/analytical ability in their advertisements. These types of skills are crucial for Skilled Trades so that they can collaborate effectively and especially in high-demand supervisor roles.

#### Technical in-Demand Skills

- Inspection, repair
- Scheduling
- Machining, computer numerical control (CNC)
- Supervisory skills
- Welding

#### Foundational In-Demand Skills

- Communication skills
- Quality assurance and control
- Problem solving, troubleshooting
- Computer skills
- Writing

#### Job Type

- Temporary: 6.3%
- Full-time: 55.3%
- Part-time: 4.3%

#### Certifications In-Demand

- Certified registered central service technician
- Automotive Service Excellence (ASE) certification
- Boiler operator license
- Commercial driver's license (CDL)
- Forklift operator certification

%

60% advertise salaries of \$35k  
per year or less

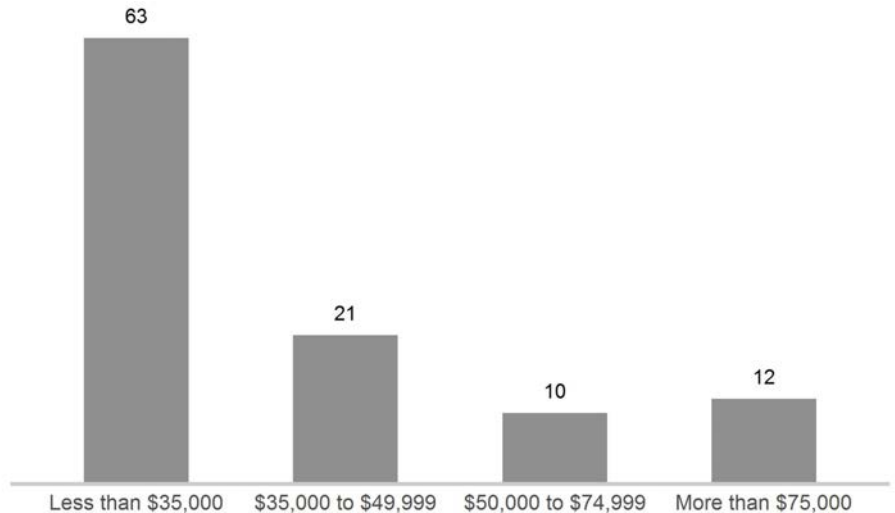


The sixth most popular certification  
was Reactor Operator License

## Skilled Trades & Technicians Wages

The Skilled Trades occupations tend to be some of the lowest paid in the City of Detroit, and across southeast Michigan and the nation. Just 106 Q3 2016 job postings advertised an hourly wage or annual salary. Of those that did, the majority (60 percent) were for salaries less than \$35,000 a year. Wage data from the Bureau of Labor Statistics show that all of the top ten most in-demand Skilled Trades occupations in Detroit earn a living wage over \$15 an hour at the median.

## Advertised Salaries Quarter 3 2016



Data: Burning Glass Technologies  
Analysis: Workforce Intelligence Network

## Wage Data from Bureau of Labor Statistics 2015

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
51-9199	First-Line Supervisors of Production and Operating Workers	\$9.79	\$11.10	\$16.05	\$23.21	\$33.71
51-1011	Production Workers, All Other	\$17.67	\$22.66	\$30.33	\$40.50	\$47.94
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$9.16	\$11.99	\$16.71	\$23.77	\$29.77
17-3023	Electronics Engineering Technicians	\$16.25	\$24.25	\$30.59	\$34.52	\$37.74
51-4041	Machinists	\$12.48	\$15.47	\$19.38	\$25.54	\$33.72
17-3029	Manufacturing Production Technicians	\$16.36	\$21.28	\$28.69	\$36.16	\$44.06
51-4121	Welders, Cutters, and Welder Fitters	\$13.15	\$15.96	\$19.41	\$26.90	\$33.74
51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$10.67	\$13.45	\$16.49	\$18.67	\$22.46
51-4111	Tool and Die Makers	\$19.90	\$24.42	\$30.59	\$34.00	\$36.04
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	\$10.03	\$11.47	\$15.71	\$22.15	\$31.33

Data: EMSI, BLS  
Analysis: Workforce Intelligence Network

### Annual Labor Market Data

	2010 Annual	2011 Annual	2012 Annual	2013 Annual	2014 Annual	2015 Annual	2016 to-date (through Sept 2016)	Change from 2015	Percent Change from 2015
Labor Force	802,754	774,443	769,010	770,236	762,011	750,854	<b>769,541</b>	18,687	2.5%
Employment	678,426	674,177	679,096	681,158	687,553	696,033	<b>719,771</b>	23,738	3.4%
Unemployment	124,328	100,266	89,914	89,078	74,459	54,821	<b>49,770</b>	-5,051	-9.2%
Unemployment Rate	15.5%	12.9%	11.7%	11.6%	9.8%	7.3%	<b>6.5%</b>	-0.8%	na

*\*Note: Monthly data averaged by year*

Data: Bureau of Labor Statistics

### Quarterly Labor Market Data

	3rd Quarter 2015	4th Quarter 2015	1st Quarter 2016	2nd Quarter 2016	3rd Quarter 2016	Change from 2nd Quarter 2016	Percent Change from 2nd Quarter 2016	One-Year Change from 3rd Quarter 2015	One-Year Percent Change from 3rd Quarter 2015
Labor Force	757,189	750,729	760,056	766,218	<b>782,348</b>	16,130	2.1%	25,158	3.3%
Employment	699,174	701,318	711,498	720,740	<b>727,074</b>	6,334	0.9%	27,900	4.0%
Unemployment	58,015	49,411	48,559	45,478	<b>55,273</b>	9,796	21.5%	-2,742	-4.7%
Unemployment Rate	7.7%	6.6%	6.4%	5.9%	<b>7.1%</b>	1.1%	na	-0.6%	na

*\*Note: Monthly data averaged by quarter*

Data: Bureau of Labor Statistics







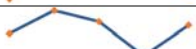




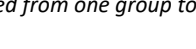
### Monthly Labor Market Data

	July 2015	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016	February 2016	March 2016	April 2016	May 2016	June 2017	July 2017	August 2017	September 2017
Labor Force	762,721	759,556	749,291	754,575	747,241	750,371	752,791	759,537	767,841	758,192	767,644	772,817	781,402	782,114	783,527
Employment	696,790	701,442	699,291	698,663	702,213	703,077	703,746	712,251	718,496	718,192	723,857	720,171	724,008	724,778	732,437
Unemployment	65,931	58,114	50,000	55,912	45,028	47,294	49,045	47,286	49,345	40,000	43,787	52,646	57,394	57,336	51,090
Unemployment Rate	8.6%	7.7%	6.7%	7.4%	6.0%	6.3%	6.5%	6.2%	6.4%	5.3%	5.7%	6.8%	7.3%	7.3%	6.5%

*\* Note: Data shown for 15 most recently available months*












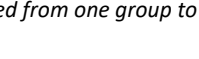
Data: Bureau of Labor Statistics

# City of Detroit Job Posting Data by Occupation Group\* Over Time

	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Change Over Time	Annual Change Q3 2015-Q3 2016	Quarter Growth Q1 2016-Q3 2016
Total Postings	27,742	30,426	27,966	28,456	29,905		7.8%	6.9%
Agriculture	353	375	316	384	351		-0.6%	11.1%
Business & finance	2,449	2,843	2,271	2,300	2,411		-1.6%	6.2%
Construction	204	236	220	215	261		27.9%	18.6%
Customer service	4,485	4,919	4,857	5,240	5,415		20.7%	11.5%
Education	698	482	404	413	391		-44.0%	-3.2%
Energy	71	157	118	129	87		22.5%	-26.3%
Engineers & designers	1,214	1,378	1,298	1,057	1,273		4.9%	-1.9%
Health care	4,467	4,531	4,908	5,123	5,403		21.0%	10.1%
Information technology	4,554	5,770	4,459	4,285	4,375		-3.9%	-1.9%
Skilled trades & technicians	419	503	443	446	494		17.9%	11.5%
Transportation, distribution, and logistics	1,571	1,622	1,492	1,652	1,704		8.5%	14.2%

*\*Note: Some overlap exists between groups, the occupational groups are not mutually exclusive. Thus, postings should not be added from one group to another but instead should be analyzed on their own.*

## Job Posting Data by Occupation Group\* Over Time

	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Change Over Time	Annual Change Q3 2015-Q3 2016	Quarter Growth Q1 2016-Q3 2016
Total Postings	129,794	140,225	126,959	139,765	149,379		15.1%	17.7%
Agriculture	1,644	1,578	1,426	1,835	1,776		8.0%	24.5%
Business & finance	9,437	10,547	8,884	9,011	9,044		-4.2%	1.8%
Construction	1,096	1,183	917	1,281	1,492		36.1%	62.7%
Customer service	25,802	30,285	27,235	30,303	34,218		32.6%	25.6%
Education	2,227	2,584	2,219	2,114	3,034		36.2%	36.7%
Energy	224	264	211	272	259		15.6%	22.7%
Engineers & designers	9,753	10,433	9,675	9,454	8,977		-8.0%	-7.2%
Health care	17,394	17,110	17,666	17,880	20,099		15.6%	13.8%
Information technology	16,922	19,360	16,403	17,335	16,966		0.3%	3.4%
Skilled trades & technicians	3,961	4,409	3,675	4,503	4,755		20.0%	29.4%
Transportation, distribution, and logistics	9,901	8,405	7,909	11,380	13,548		36.8%	71.3%

*\*Note: Some overlap exists between groups, the occupational groups are not mutually exclusive. Thus, postings should not be added from one group to another but instead should be analyzed on their own.*

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