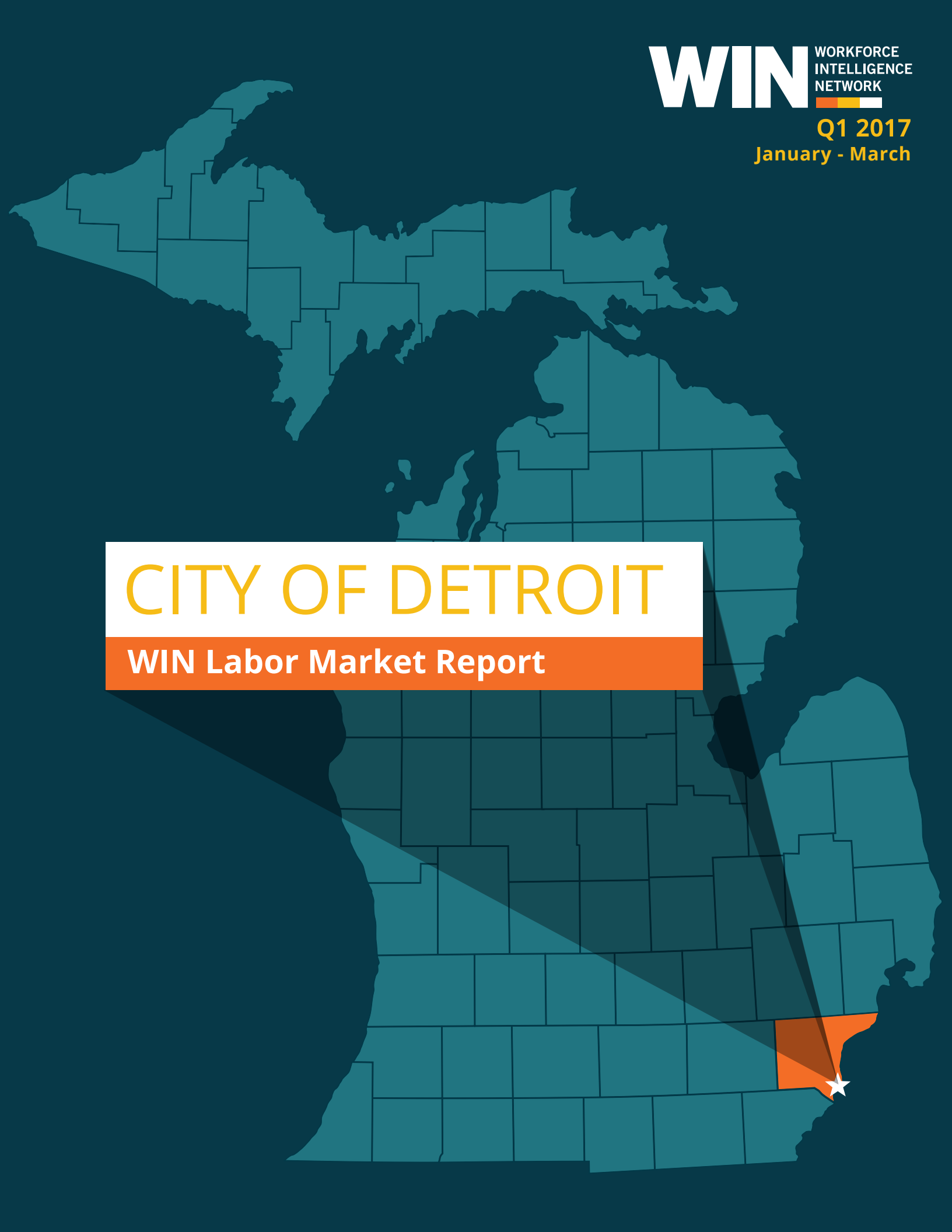


Q1 2017
January - March

CITY OF DETROIT

WIN Labor Market Report





Introduction: City of Detroit

About This Report

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

This report highlights labor market information and real-time job posting data for the City of Detroit as a whole with special sections devoted to five 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 and Finance (page 6)
- Energy (page 11)
- Health Care (page 16)
- Information Technology (page 21)
- Skilled Trades and Technicians, Manufacturing Focused (page 26)

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

Year in Review Detroit

Overall job postings declined through much of 2016, but resumed growth into Q1 2017. While a 1,500 job increase occurred between Q2 and Q3 2016, overall Detroit employment demand is 3.6 percent lower in Q1 2017 than Q1 2016. Specific occupation groups varied greatly in demand. Business and Finance postings decreased during three out of four quarters of 2016, ultimately falling from 2,393 postings to 2,276. Employer demand has been decreasing since Q3 2016, but declined by only a modest 4.9 percent. Conversely, employers in the Energy industry posted 14 percent more online ads in Q1 2017 than Q1 2016. Demand decreased between Q2 and Q4 2016, but Q1 2017 increases more than made up for this. Health care job postings experienced some volatility throughout 2016, but increased in early 2017. Postings increased from 5,228 in Q1 2016 to 5,702 in Q1 2017. Employer demand for Information technology jobs grew four percent to 4,375 postings through the first three quarters of 2016. There was a sharp drop to 3,795 ads in Q4, and a further decline into 2017. Skilled trades occupations began 2016 with 439 online job ads, and grew 14.4 percent throughout the year to 502 postings.

The labor force in Detroit increased 3.1 percent over the course of 2016, gaining 7,342 individuals for a total of 247,938. This increase mainly occurred between Q2 and Q3 2016, and remained stable afterward. Employment grew steadily each quarter, ultimately experiencing a 1.7 percent gain between Q1 2016 and Q1 2017. Due to the labor force increases outstripping the employment gains, both the annual and quarterly unemployment rates experienced slight increases.

Key Findings for Q1 2017

Job postings have increased in Health Care, and the number of job postings is much higher than any other occupation group in the city of Detroit.

There were 5,131 health care job postings in Q4 2016 and 5,702 postings in Q1 2017, an increase of 11 percent. There were more job postings in health care than in any other occupation group in this geography, suggesting a high demand for these workers that has grown without a single quarterly decline since 2009. The IT occupation group, the second most in demand group, had 3,711 postings in Q4 2016. See page 16 in the report for more information on health care job postings.

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

The occupation of managers has an entry level wage of \$21.41 per hour, a \$32.30 hourly wage at the median, and a 90th percentile wage of \$47.39 per hour which equates to \$98,950.32 per year. Despite the high wages for experienced managers, three of the other top ten occupations in Energy have a higher entry-level wage. See page 15 in the report for more Energy wage information.

Most employers posting for jobs desire students that have received a bachelor's degree.

According to Q1 2017 figures, job postings requiring for a bachelor's degree out number job postings that ask for any other type of educational attainment. Bachelor's degrees make up over 57 percent of specified education levels for job postings in this report.

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

With a 9 percent increase since last quarter, nearly 89 percent of job postings in Q1 2017 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 25 in the report for more IT wage information.

Energy job postings are up substantially for the first time since last year.

While job postings in Detroit's energy sector are the most volatile in the five occupation groups examined in this report, following the steep decline after Q2 2016, employer demand has since rebounded to comparable levels. See page 11 in the report for more information regarding the Energy occupation group.

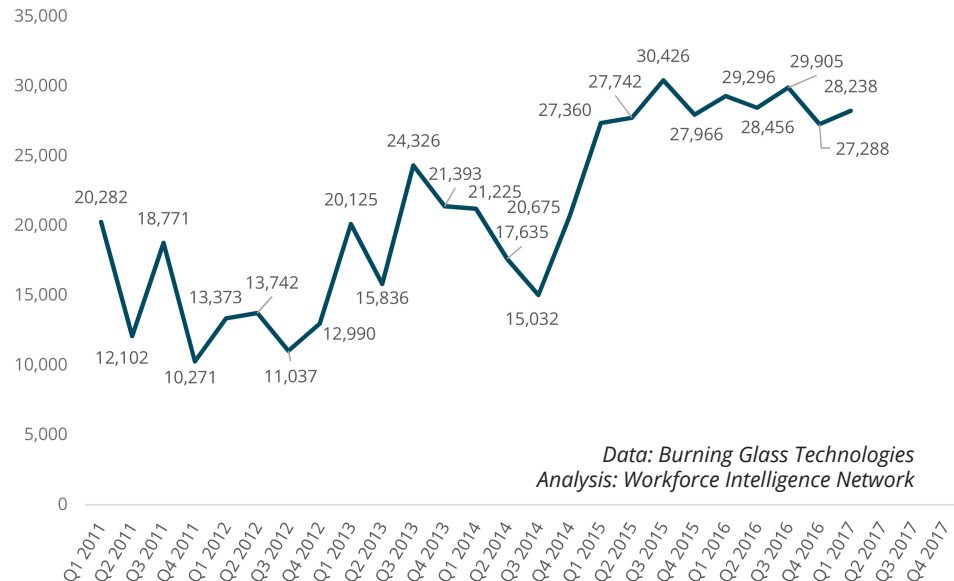


Workforce and Employer Demand Indicators

Postings over time

Online job postings for all occupations in the City of Detroit decreased by 3.4 percent between Q4 2016 and Q1 2017 to a total of 27,288 postings. This is the lowest number of postings in the city since Q3 2014, when the number hovered just over 15,000 postings. Comparatively, job postings have decreased 6.9 percent since Q1 2016 yet, overall, demand remains high, well-above pre-recession highs.

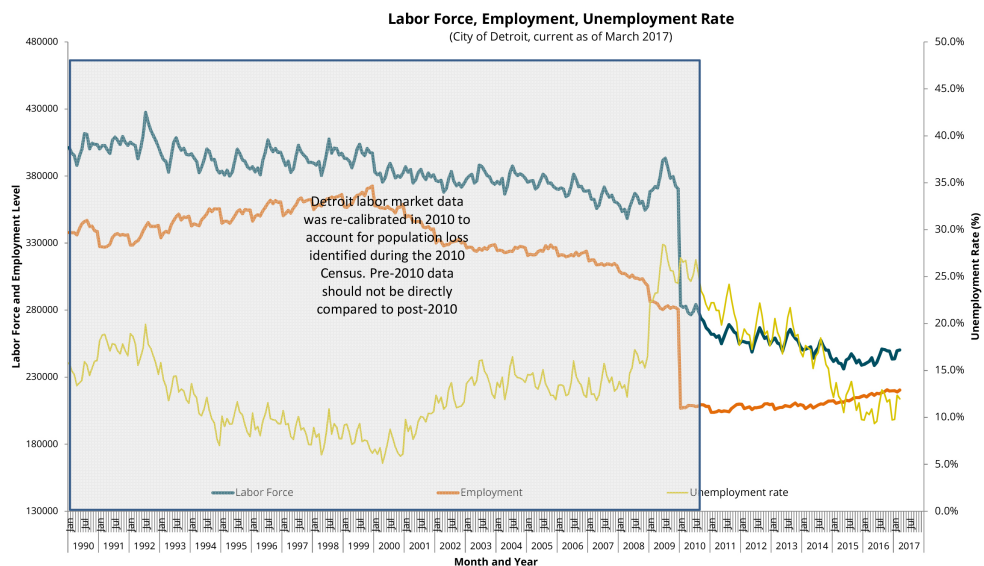
WIN Region Online Job Postings



Labor force/employment/unemployment

The labor force in the City of Detroit increased 0.2 percent, gaining 440 job seekers, between Q4 2016 and Q1 2017. Over the same period, employment fell just 0.1 percent while the unemployment rate grew 15.2 percent since Q1 2016. Still, however, year-over-year, the labor force has grown 1.3 percent since Q1 of last year. 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 and down over 10 percent from 2015.

Labor Force, Employment, Unemployment Rate Quarter 1 2017

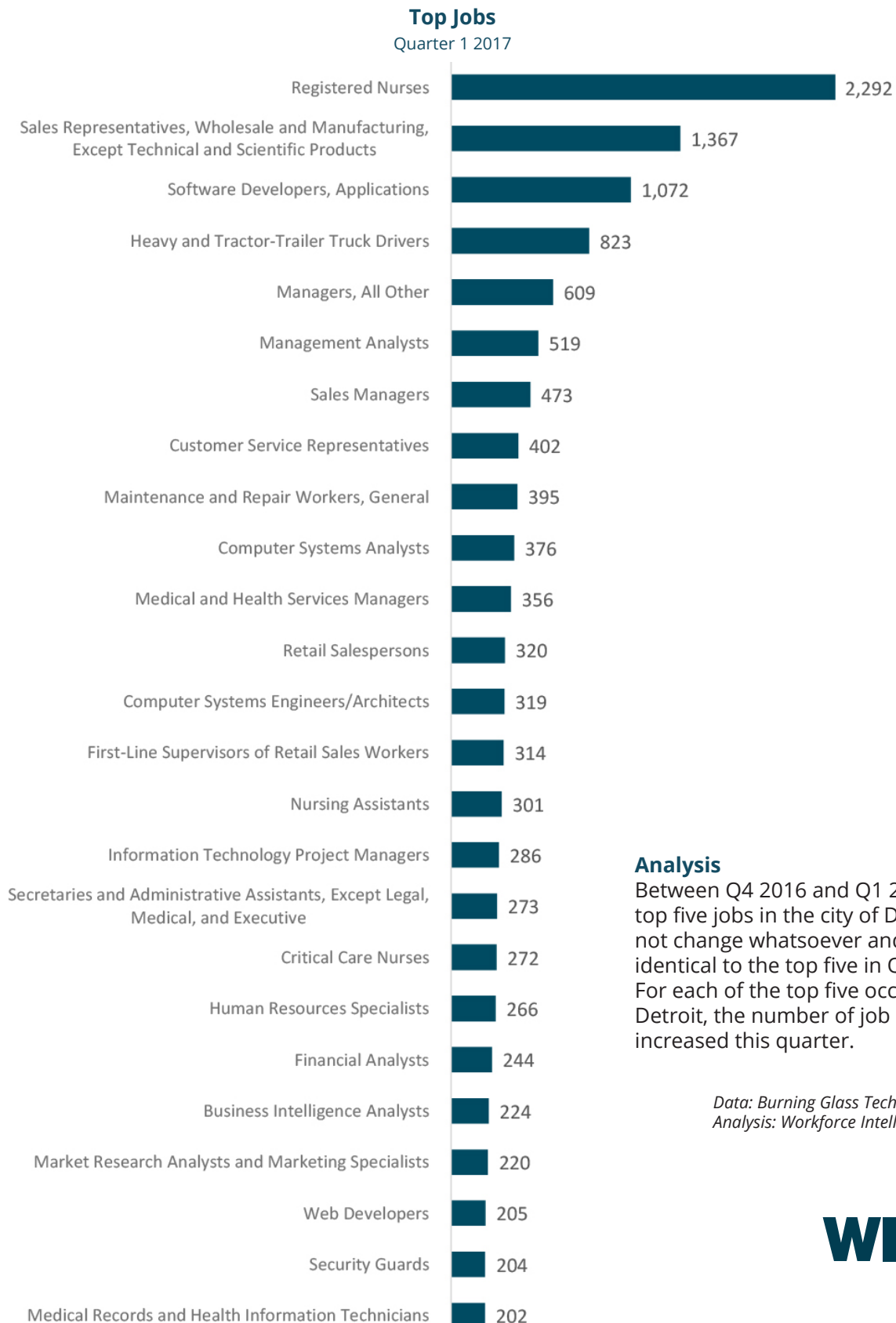


Data: BLS
Analysis: Workforce Intelligence Network



Top job: registered nurses
(2,292 job postings)

3.1%
increase in the labor force
since Q1 2016 (7,342 jobs)



Analysis

Between Q4 2016 and Q1 2017, the top five jobs in the city of Detroit did not change whatsoever and remains identical to the top five in Q4 2016. For each of the top five occupations in Detroit, the number of job postings increased this quarter.

*Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network*



Now hiring: 27,228 online job ads during Q1 2017

9.8%
unemployment rate

Top Jobs

Quarter 1 2017

First-Line Supervisors of Food Preparation and Serving Workers	201
Bookkeeping, Accounting, and Auditing Clerks	199
General and Operations Managers	194
Mechanical Engineers	192
Accountants	183
Marketing Managers	181
Combined Food Preparation and Serving Workers, Including Fast Food	180
First-Line Supervisors of Office and Administrative Support Workers	178
Physicians and Surgeons, All Other	169
Medical Assistants	168
Database Administrators	156
Pharmacy Technicians	155
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	151
Nurse Practitioners	147
Software Quality Assurance Engineers and Testers	144
Lawyers	142
Information Security Analysts	135
Insurance Sales Agents	131
Medical and Clinical Laboratory Technicians	131
Pharmacists	131
Computer Network Architects	129
First-Line Supervisors of Mechanics, Installers, and Repairers	129
Auditors	127
Architectural and Engineering Managers	124
Electrical Engineers	123

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Business & Finance

Introduction

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.

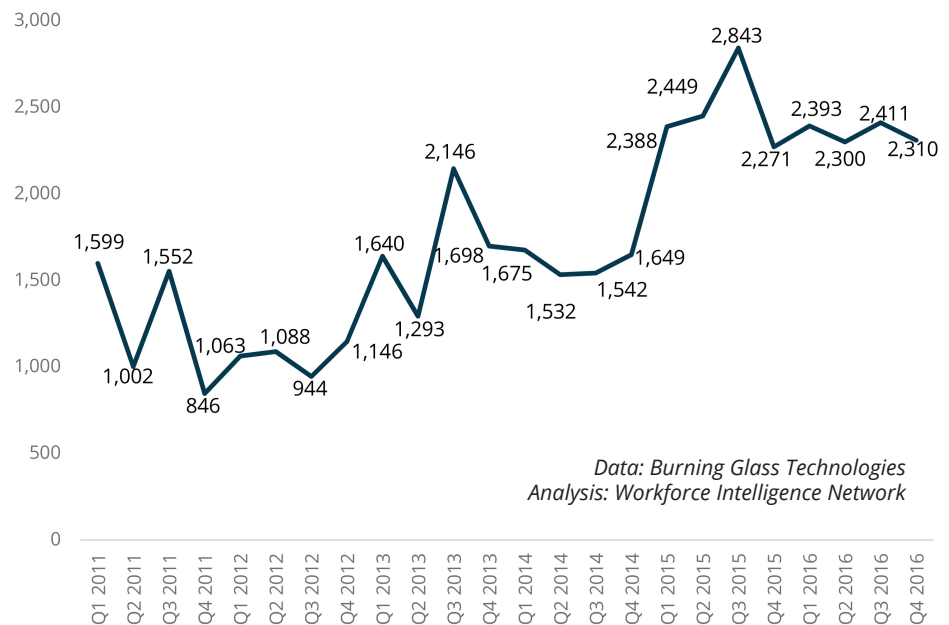
Job Posting Analysis

Employer demand for workers in the Business & Finance group has grown over the analysis period from Q1 2011 to Q1 2017, leveling out over the year 2016. Gauged by online job postings, demand decreased only one and half percent between Q4 2016 and Q1 2017, from 2,310 postings to 2,276 compared to a four percent decrease in job postings between Q3 and Q4 of 2016.

Employment Analysis

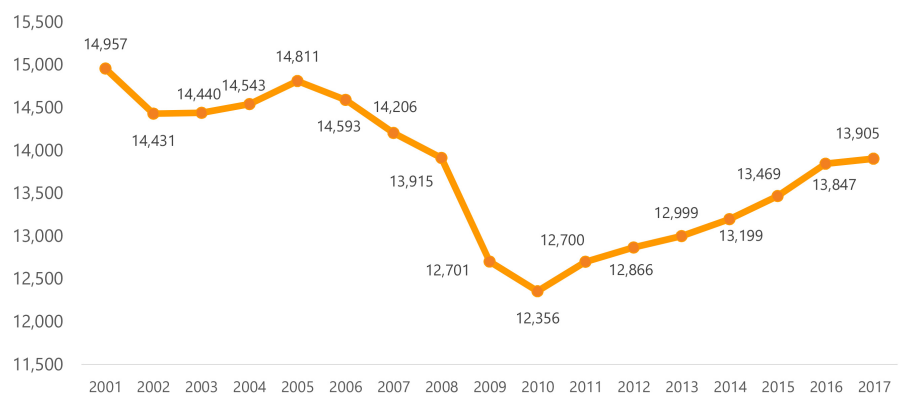
Generally, the growing demand for workers in Business & Finance has driven employment growth in these occupations in the City of Detroit. After employment reached a low during 2010 at 12,356 employees, employment levels have nearly returned to pre-recession levels. As of 2017, 13,905 workers have employment in Business & Finance related occupations in the city of Detroit.

Online Job Postings



Employment Over Time

2017



Data: EMSI
Analysis: Workforce Intelligence Network

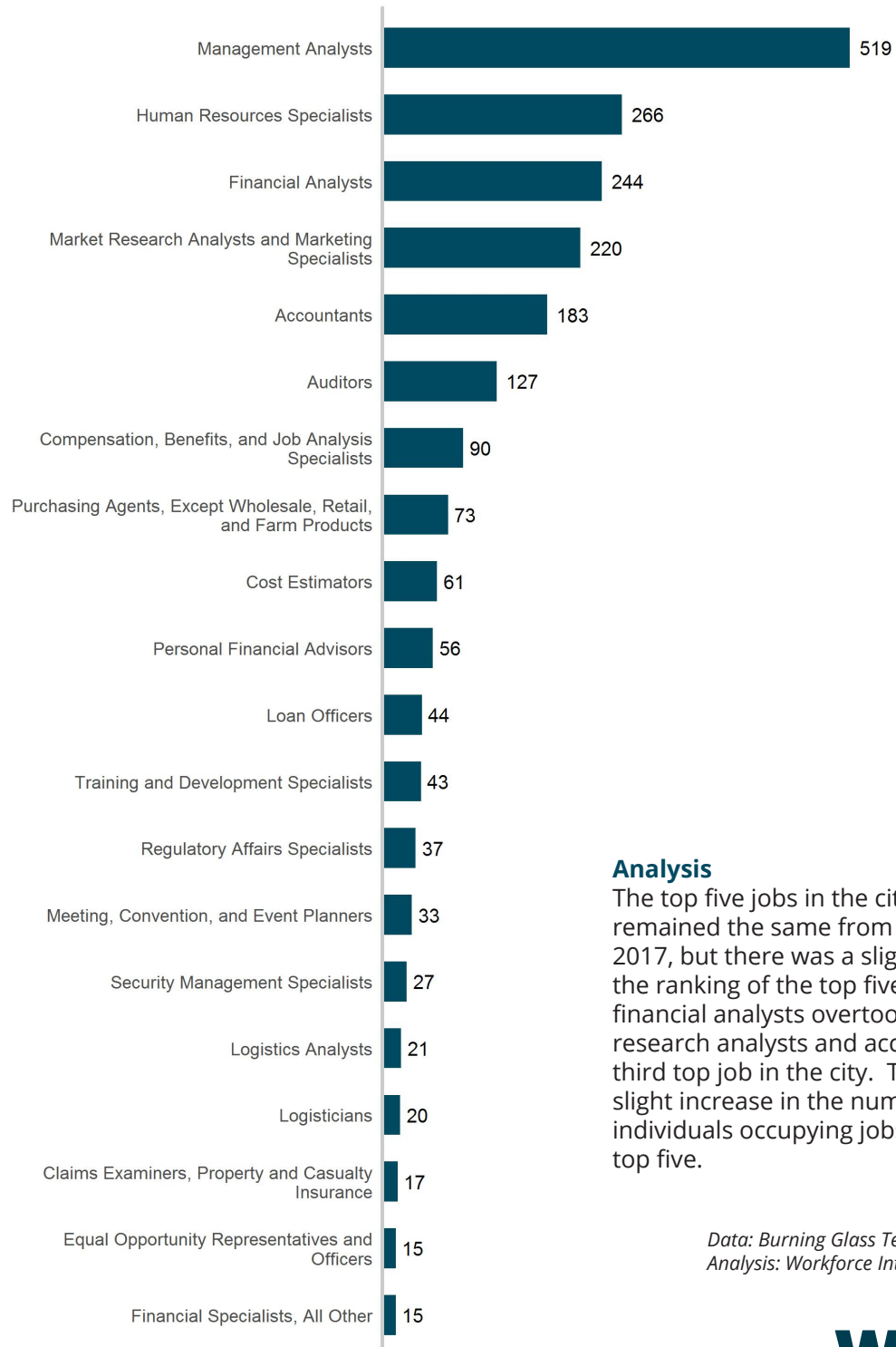


Now hiring: 2,276 openings



13,905 employees in
Business & Finance

Business & Finance
Top Jobs
Quarter 1 2017



Analysis

The top five jobs in the city of Detroit remained the same from Q4 2016 to Q1 2017, but there was a slight change in the ranking of the top five jobs. In Q4, financial analysts overtook market research analysts and accounts as the third top job in the city. There was a slight increase in the number of individuals occupying jobs in each of the top five.

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Education required:
bachelor's degree



Experience required:
less than 5 years

Business & Finance Educational Attainment Required

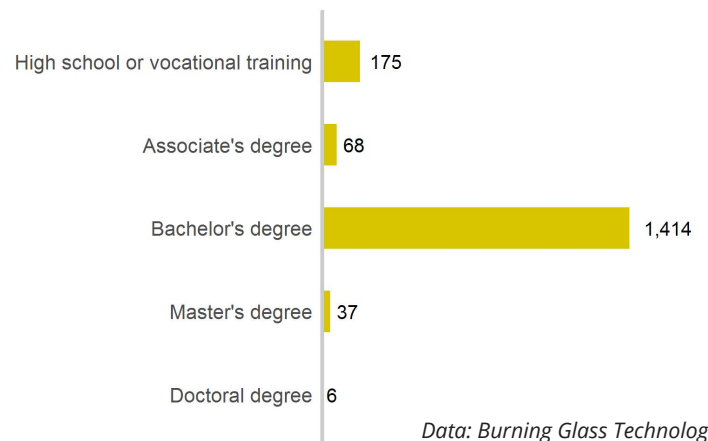
Of the 1,700 online job postings in Q1 2017 that specified a desired level of educational attainment, 83 percent required job candidates to hold a bachelor's degree. Only 12 percent of postings required candidates to have an associate's degree or high school or vocational training.

City of Detroit employers hiring Business & Finance workers during Q1 2017 were open to candidates with less than five years of experience. Only 1,480 of Q1 job postings specified a desired level of experience, but 88 percent of those were available to workers with less than 5 years of experience.

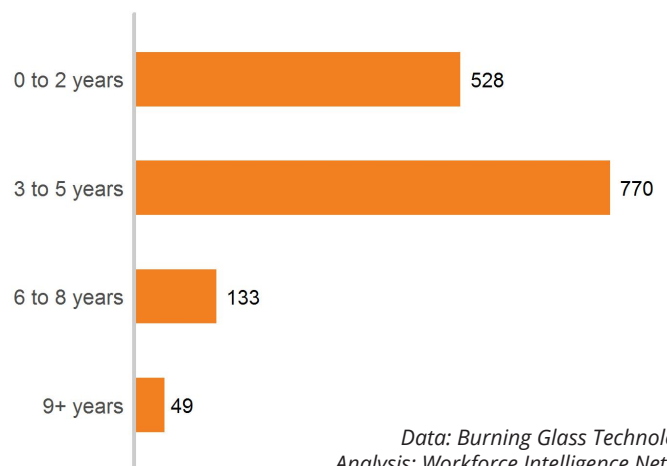
In-Demand Areas of Study

- Accounting
- Business administration and management
- Finance
- Economics
- Computer science

Educational Attainment



Experience Required





Average advertised salary:
\$68,238 per year

48%
of the open Business &
Finance positions are full-time

Business & Finance in-Demand Skills

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 should combine with more foundational skills that are imperative to succeeding in any 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
- Microsoft Office
- Project Management
- Budgeting
- Financial Analysis

Foundational In-Demand Skills

- Communication Skills
- Writing
- Problem Solving
- Planning
- Research

Job Type

- Temporary: 2.7%
- Full-time: 47.9%
- Part-time: 2.7%

Certifications Required

- Certified Public Accountant (CPA)
- Project Management Certification (e.g. PMP)
- Financial Accounting Standards Board (FASB)
- Certified Information Systems Auditor (CISA)
- Mortgage License



Knowledge areas: accounting,
business management, finance



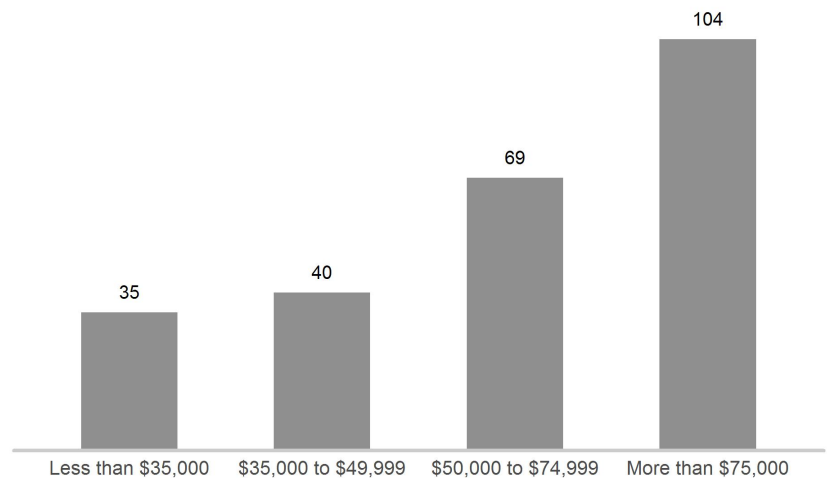
In-demand certifications:
CPA, PMP, FASB, CISA

Business & Finance Wages

Only 11 percent (248 postings) of Q1 Business & Finance job postings in Detroit advertised an hourly wage or annual salary. Among those that did, 70 percent advertised salaries greater than \$50,000 a year and 41 percent advertised a salary over \$75,000. Wage data from the Bureau of Labor Statistics reaffirm that many of the top in-demand Business & Finance occupations in Detroit can earn high hourly wages.

Advertised Wages in Job Postings

Q1 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
13-1111	Management Analysts	\$23.72	\$30.57	\$39.02	\$49.68	\$63.66
13-1071	Human Resources Specialists	\$16.68	\$21.42	\$27.91	\$35.97	\$46.11
13-2051	Financial Analysts	\$23.91	\$29.53	\$38.05	\$46.71	\$56.41
13-1161	Market Research Analysts and Marketing Specialists	\$18.52	\$23.66	\$32.02	\$42.59	\$52.77
13-2011	Accountants	\$19.32	\$23.86	\$31.72	\$42.09	\$54.49
13-2011	Auditors	\$19.32	\$23.86	\$31.72	\$42.09	\$54.49
13-1141	Compensation, Benefits, and Job Analysis Specialists	\$20.53	\$24.42	\$29.83	\$38.27	\$47.33
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	\$20.12	\$25.13	\$33.08	\$42.72	\$52.93
13-1051	Cost Estimators	\$18.21	\$22.31	\$29.04	\$37.54	\$45.69
13-2052	Personal Financial Advisors	\$20.28	\$26.19	\$33.25	\$57.74	\$79.47

Data: EMSI, BLS
Analysis: Workforce Intelligence Network

Introduction

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

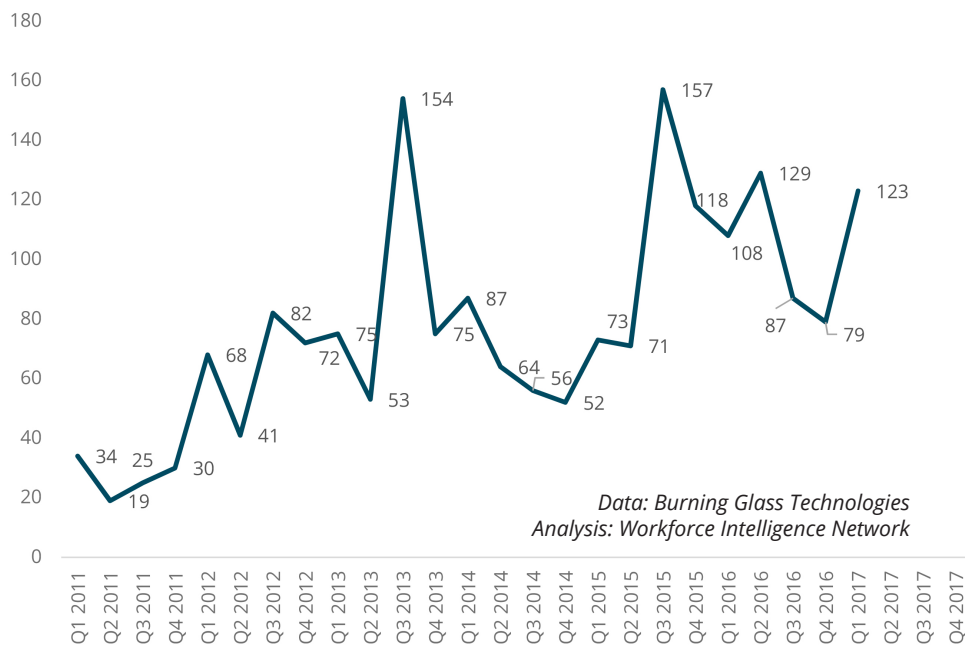
Job Posting Analysis

Compared to other occupation groups, postings for Energy occupations are low and, therefore, appear more volatile. Employer demand for Energy workers, as demonstrated by online job postings, fluctuate from quarter to quarter. Postings in Q1 2017 are up 55.7 percent (42 job postings) to 121 from 79 postings in Q4 2016. Demand, though small in comparison to other occupations, has grown over the analysis period beginning in 2011.

Employment Analysis

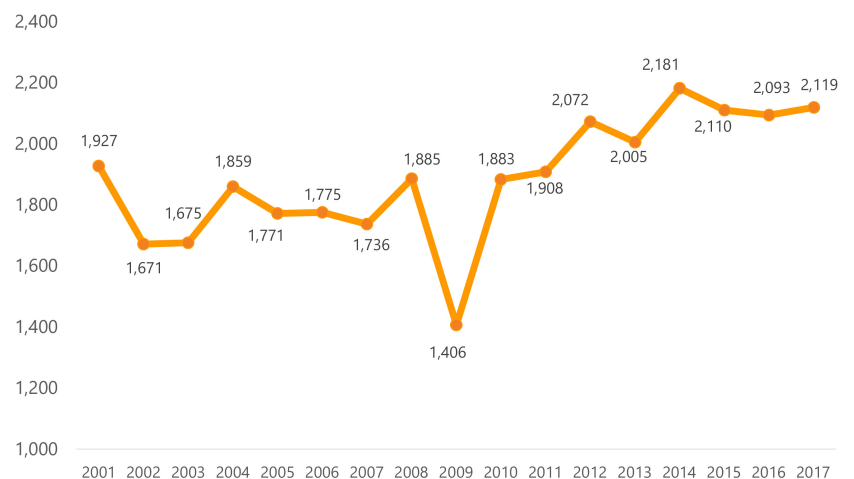
The data presented in the graph to the right represents the City of Detroit's total employment in the Energy industries (NAICS 2111, 2131, 2211, 2212, 2371), not just WIN-designated Energy occupations. Like many other occupation groups and industries, employment in the Energy industries in Detroit declined during the Great Recession, shedding 479 of 1,885 employees from 2008 to 2009. Employment in these industries, however, has made a swift recovery, with employment over the past six years surpassing pre-recession levels. Since 2014, employment figures in Detroit's energy sector have consolidated between 2,000 and 2,200 jobs.

Online Job Postings



Employment Over Time

2017



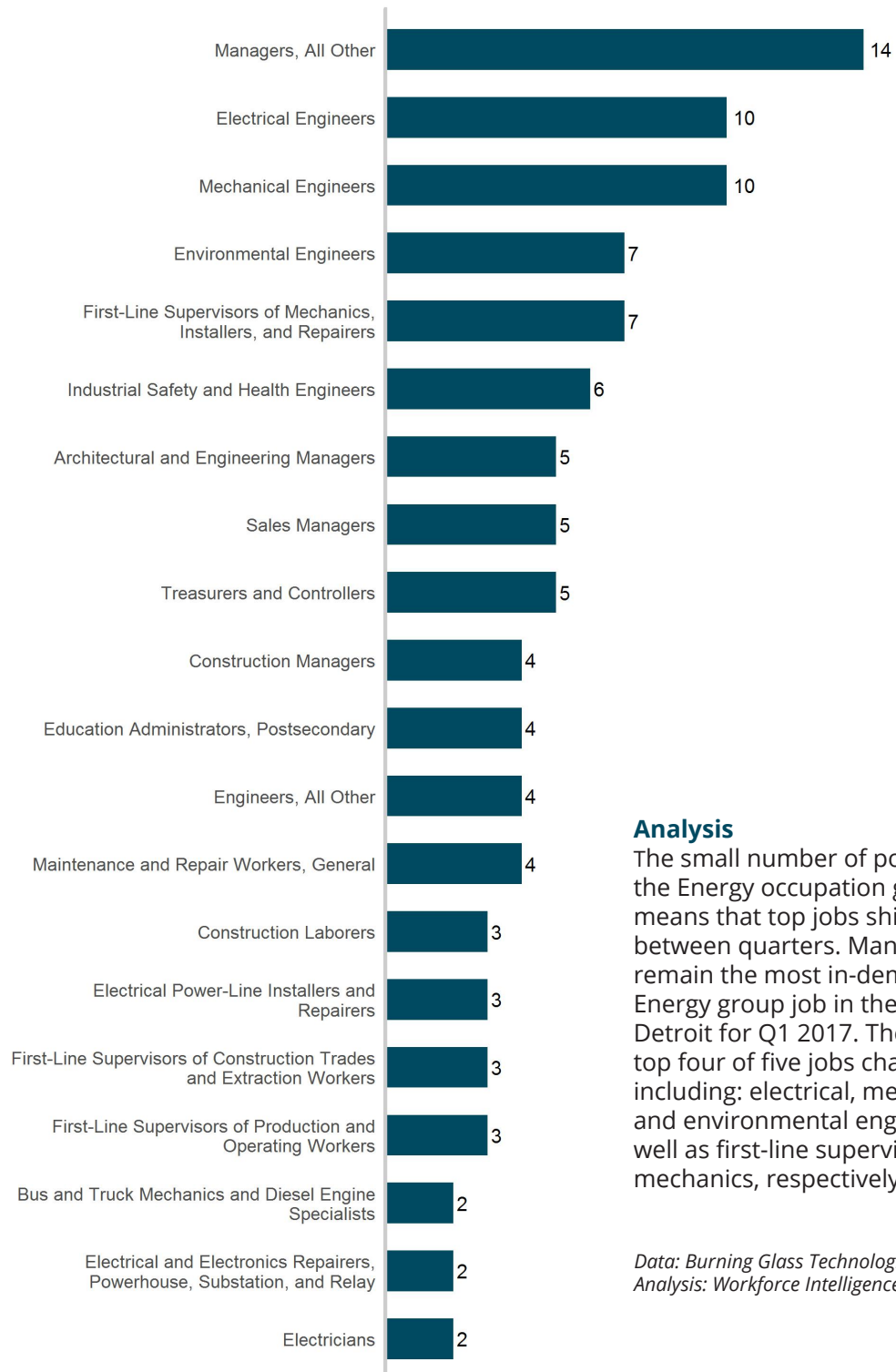


Now hiring: 123 job postings



Employment in Energy industries has steadily increased since Q2 2016

**Energy
Top Jobs**
Quarter 1 2017



Analysis

The small number of postings in the Energy occupation group means that top jobs shift rapidly between quarters. Managers remain the most in-demand Energy group job in the City of Detroit for Q1 2017. The remaining top four of five jobs changed including: electrical, mechanical, and environmental engineers as well as first-line supervisors of mechanics, respectively.

*Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network*



High variability in
employer demand



Education required:
bachelor's degree

Energy Educational Attainment Required

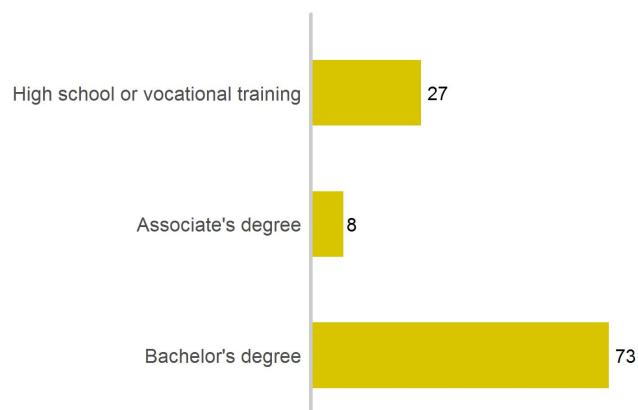
Most Energy job postings from Q1 2017 required job candidates to hold a bachelor's degree. Approximately 88 percent of job ads specified minimum education criteria. The high demand for engineers and managers in this occupation group necessitates higher educational attainment – nearly 67 percent of Q1 job ads that advertised a minimum level of education required a bachelor's degree. Only 32 percent of the job postings required anything less than a bachelor's degree.

The demand for managers in the Energy group reflects the desired experience requirements. Fifty-eight percent of Q1 job postings specified a desired level of experience. Among those that did, 92 percent preferred candidates with three or more years of experience, however, the desired experience level skews (66 percent) towards three to five years.

In-Demand Areas of Study

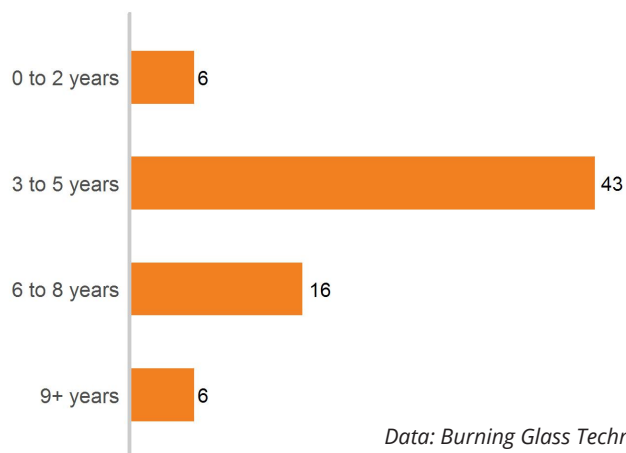
- Engineering, general
- Business administration and management
- Engineering Technology
- Electrical and electronic engineering technologies
- Mechanical Engineering

Educational Attainment



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Experience Required



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Knowledge areas: engineering, business administration and management

%

In-demand certifications: PMP, air brake certified

Energy In-Demand Skills

The high demand for managers in the Energy occupation group reflects the technical skills specified in job postings. Q4 2016 job postings cited supervisory skills, budgeting, 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 and especially in high-demand supervisor rolls.

Technical In-Demand Skills

- Budgeting
- Microsoft Office
- Supervisory Skills
- Project Management
- Scheduling

Foundational In-Demand Skills

- Problem Solving
- Writing
- Communication Skills
- Planning
- Presentation Skills

Job Type

- Temporary: 0.8%
- Full-time: 36.6%
- Part-time: data not available

Certifications Required

- Air Brake Certified
- Project Management Certification (e.g. PMP)
- Professional Engineer
- Certified Industrial Hygienist
- Certified Safety Professional



Critical skills: budgeting, Microsoft Office, problem solving

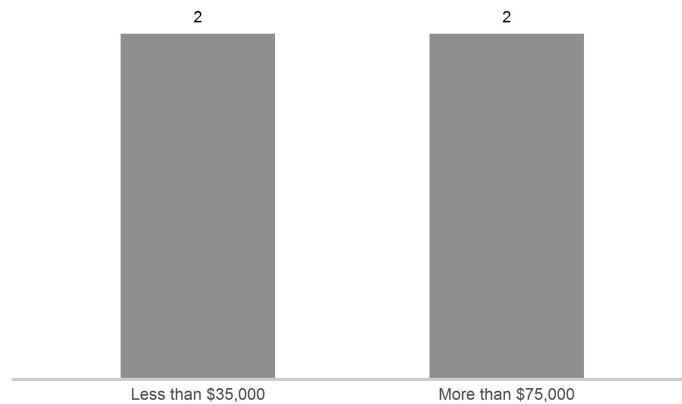


High advertised salaries and median hourly wages management

Energy Wages

Only four Q1 2017 job postings (3 percent of the total 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 Wages in Job Postings Q1 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
11-9199	Managers, All Other	\$21.41	\$26.15	\$32.30	\$39.48	\$47.39
17-2071	Electrical Engineers	\$28.97	\$34.90	\$42.69	\$50.55	\$60.05
17-2141	Mechanical Engineers	\$29.12	\$36.05	\$44.27	\$53.43	\$60.42
17-2081	Environmental Engineers	\$26.22	\$34.95	\$43.05	\$52.25	\$61.21
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$18.99	\$24.16	\$31.33	\$39.79	\$47.58
17-2111	Industrial Safety and Health Engineers	\$31.50	\$38.49	\$47.12	\$56.50	\$64.15
11-9041	Architectural and Engineering Managers	\$40.65	\$49.46	\$60.17	\$72.35	\$85.16
11-2022	Sales Managers	\$31.26	\$42.44	\$55.93	\$73.41	\$114.67
11-3031	Treasurers and Controllers	\$30.69	\$39.32	\$51.61	\$68.84	\$103.86

Data: EMSI, BLS
Analysis: Workforce Intelligence Network

Introduction

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

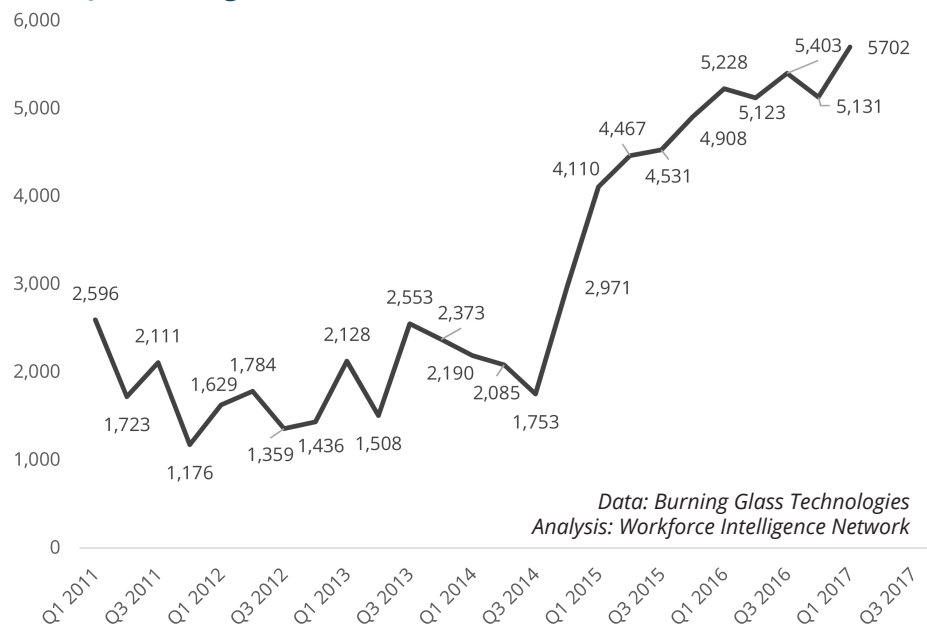
Job Posting Analysis

Demand for Health Care workers has grown since the start of analysis in 2011, but the number of postings decreased in Q4 2016. Postings for these occupations increased 11 percent (571 job postings) between Q4 and Q1 2017 to a total of 5,702 postings. The overall growth in job postings reflects an unmet demand for Health Care workers in Detroit and across southeast Michigan and the country.

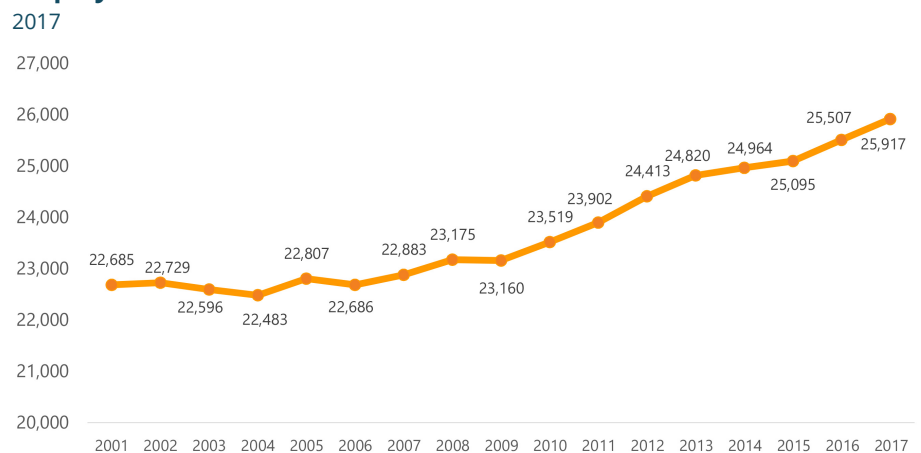
Employment Analysis

Employment in Health Care industries has remained strong and continued to grow in the City of Detroit over the past 15 years. In 2017, nearly 26,000 employees work 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



Employment Over Time



Source: EMSI
Analysis: Workforce Intelligence Network

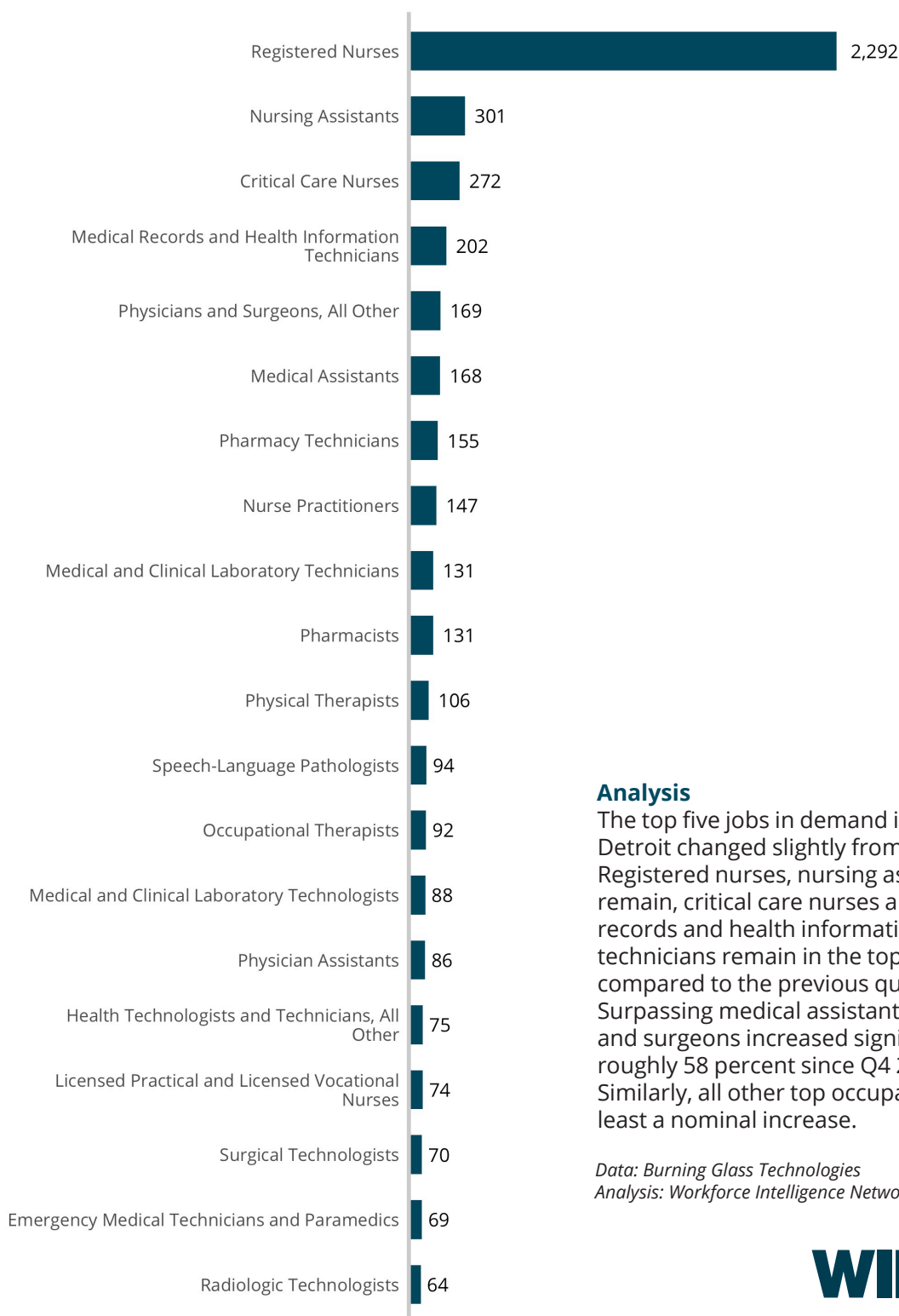
Data: EMSI
Analysis: Workforce Intelligence Network

11%
increase in employer
demand: 5,702 job postings



25,917 Health Care workers
in the City of Detroit

**Health Care
Top Jobs**
Quarter 1 2017



Analysis

The top five jobs in demand in the city of Detroit changed slightly from Q1 2017. Registered nurses, nursing assistants remain, critical care nurses and Medical records and health information technicians remain in the top 4 compared to the previous quarter. Surpassing medical assistants, physicians and surgeons increased significantly by roughly 58 percent since Q4 2016. Similarly, all other top occupations saw at least a nominal increase.

*Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network*



Experience required:
0 to 2 years



Steady overall employment growth
in Health Care occupations

Health Care Educational Attainment Required

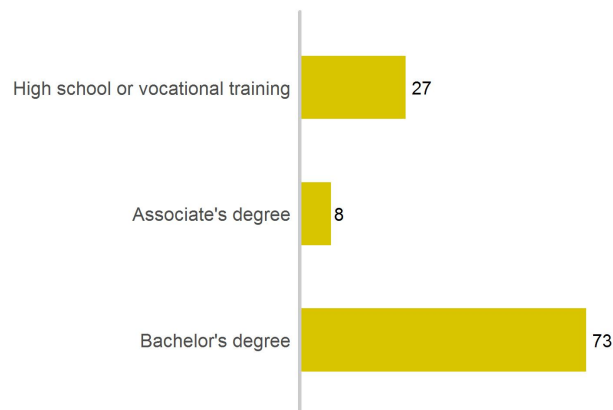
Of the 4,327 online job postings for Health Care occupations in the City of Detroit during Q1 2017 that listed an educational requirement, most required some type of post-secondary degree for employment. 46 percent of postings required an associate's degree; candidates with a two-year degree are eligible to work as a medical assistant, for example. Many employers prefer nurses with a bachelor's degree, which explains why 21% of Q1 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. Among job postings that specified a desired level of experience, 2,080 (74 percent) were for entry-level positions, requiring zero to two years of experience.

In-Demand Areas of Study

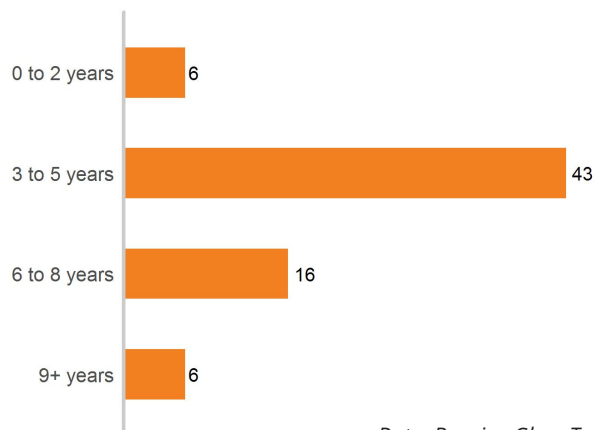
- Nursing science
- Physical therapy
- Business administration and management
- Public health
- Occupational therapy

Educational Attainment



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Experience Required



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Education required: associate's degree or bachelor's degree



Desired skills: patient care, teamwork/collaboration

Health Care In-Demand Skills

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 apparent 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, communication skills, and building effective relationships in 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
- Supervisory skills
- Patient monitoring and evaluation
- Teaching
- Patient/family education instruction

Foundational In-Demand Skills

- Teamwork/collaboration
- Communication skills
- Building effective relationships
- Mentoring
- Planning

Job Type

- Temporary: 10.4%
- Full-time: 55.1%
- Part-time: 8.1%

Certifications Required

- Registered nurse
- Critical care registered nurse (CCRN)
- Certified nursing assistant
- Emergency medical technician (EMT)
- Basic cardiac life support certification



Basic cardiac life support is fifth most popular certification



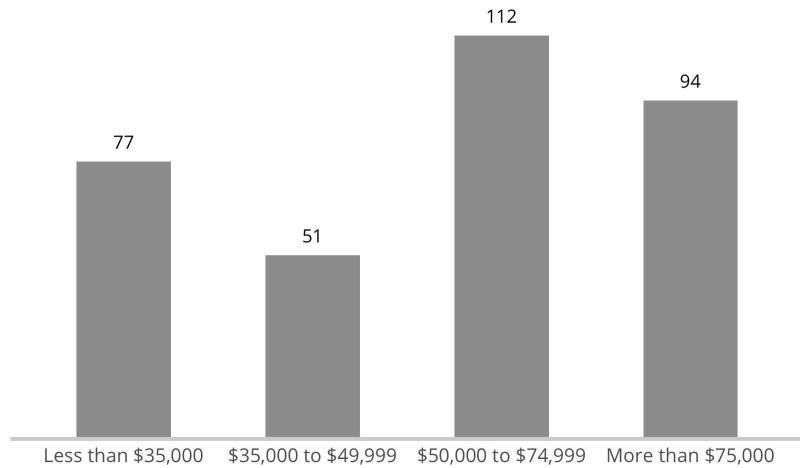
\$67,567 average advertised salary

Health Care Wages

With varying educational and experience requirements among the Health Care occupations, employers in Detroit advertise a range of annual salaries. Only 307 (6 percent) of job postings advertised an hourly wage or annual salary and of these postings, nearly 64 percent advertise a wage \$50,000 or higher. Wage data from the Bureau of Labor Statistics can sharpen data from job posting to show that Health Care professions requiring higher educational attainment, like nurse practitioners and physical therapists, earn higher median hourly wages.

Advertised Wages in Job Postings

Q1 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
29-1141	Registered Nurses	\$25.13	\$28.55	\$33.18	\$38.42	\$46.58
31-1014	Nursing Assistants	\$9.96	\$11.65	\$13.46	\$15.52	\$17.56
29-1141	Critical Care Nurses	\$25.13	\$28.55	\$33.18	\$38.42	\$46.58
29-2071	Medical Records and Health Information Technicians	\$11.74	\$14.25	\$17.98	\$22.66	\$27.43
29-1069	Physicians and Surgeons, All Other	\$31.18	\$49.06	\$80.93	\$96.43	\$149.38
31-9092	Medical Assistants	\$10.78	\$12.34	\$14.06	\$16.32	\$18.78
29-2052	Pharmacy Technicians	\$10.04	\$11.90	\$14.61	\$17.31	\$19.25
29-1171	Nurse Practitioners	\$34.95	\$40.57	\$45.46	\$52.12	\$59.70
29-2012	Medical and Clinical Laboratory Technicians	\$10.79	\$12.75	\$15.28	\$19.12	\$27.00
29-1051	Pharmacists	\$42.61	\$50.21	\$55.49	\$60.30	\$66.40

Data: EMSI, BLS
Analysis: Workforce Intelligence Network



Information Technology

Introduction

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.

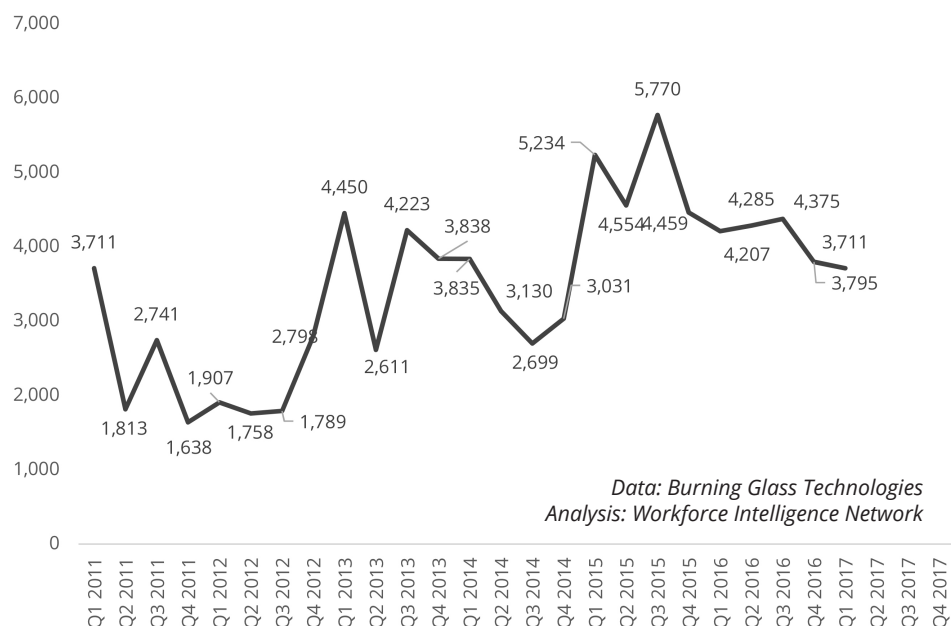
Job Posting Analysis

Online job ads for occupations related to IT decreased 2.2% (84 job ads) between Q4 2016 and Q1 2017, from 3,795 to 3,711 postings. Since Q1 of 2016, job postings are down 11.8% from 4,207 to 3,711, a difference of 496 job ads. 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.

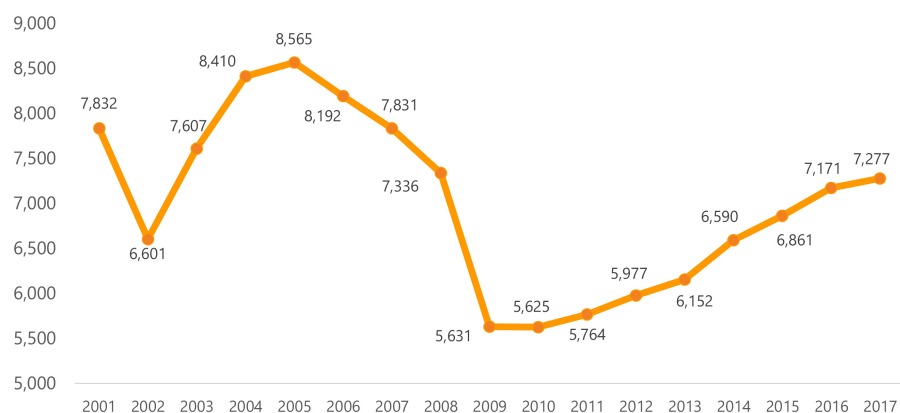
Employment Analysis

As in other parts of southeast Michigan and in other occupation groups, employment for the IT occupations declined steeply during the Great Recession. Employment reached its lowest point in 2009, with 5,631 people employed in IT occupations in the City of Detroit. Employment has grown each year since 2009, nearing pre-recession levels, with 7,171 employees in 2016. As of 2017, IT employment improves incrementally with 7,277 employed.

Online Job Postings



Employment Over Time Q1 2017



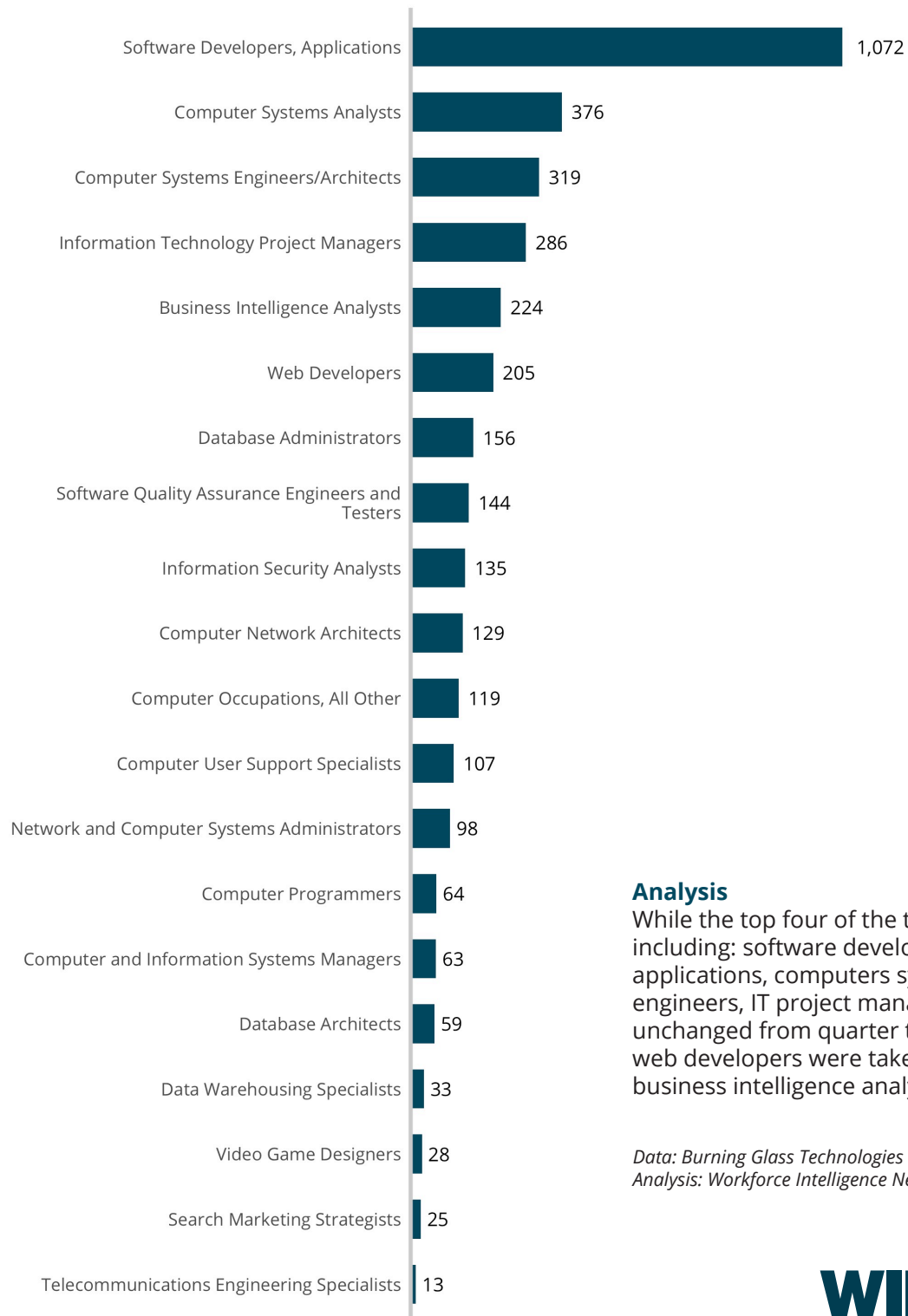


Now hiring: 3,711 job postings



7,277 employees; employment
nearing pre-recession levels

Information Technology Top Jobs Quarter 1 2017



Analysis

While the top four of the top five, including: software developers for applications, computers systems engineers, IT project managers remain unchanged from quarter to quarter, web developers were taken over by business intelligence analysts.

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Education required:
bachelor's degree

2.2%

decrease in employer
demand between quarters

Information Technology Educational Attainment Required

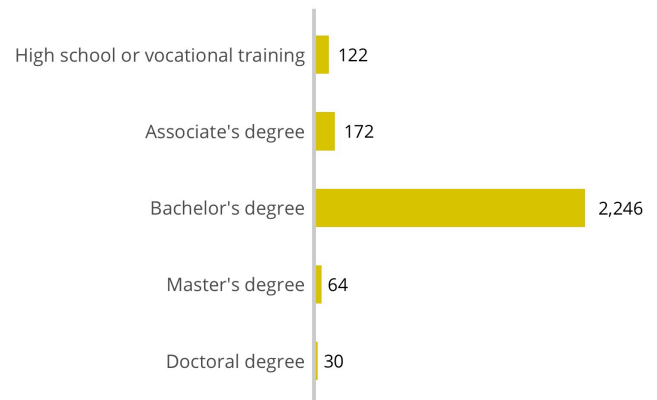
Of the 2,634 IT group job postings that specified a desired level of educational attainment during Q1 2017, 85% required applicants to have a bachelor's degree. The high educational attainment requirements in this group often translate into high wages especially when combined with an elevated level of experience, as seen in the following pages.

Most IT occupations in Detroit also prefer candidates with experience in the field. Of the 2,355 postings that listed required experience levels in Q1 2017, 62 percent preferred candidates with three to five years of experience, a 6 percent increase since Q4 2016 alone. Only 22 percent of postings were open to entry level workers with less than 2 years of experience.

In-Demand Areas of Study

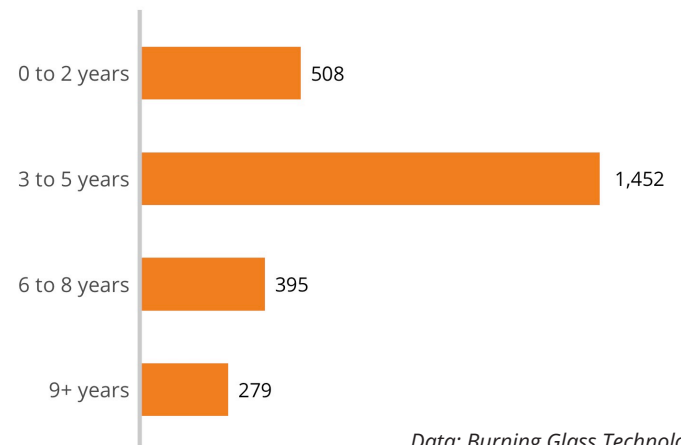
- Computer science
- Engineering, general
- Business administration and management
- Management information systems
- Electrical and electronic engineering technologies

Educational Attainment



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Experience Required



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



Experience required:
3 to 5 years



Knowledge areas:
computer science, engineering

Information Technology In-Demand Skills

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 Q1 2017's skills list. While IT workers continue to need advanced technical skills, they also need to maintain more traditional foundational skills critical to thrive in the workplace. Employers hiring IT workers stress the importance of employability skills like writing, 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 particularly in high-demand supervisory roles.

Technical In-Demand Skills

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

Foundational In-Demand Skills

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

Job Type

- Temporary: 2.1%
- Full-time: 44.4%
- Part-time: 0.8%

Certifications Required

- Certified Information Systems Security Professional
- Project Management Certification (e.g. PMP)
- Certified Information Systems Auditor (CISA)
- SANS/GIAC Certification
- Microsoft Certified Solutions Expert (MCSA)



In-demand certifications:
CISSP, PMP, CISA



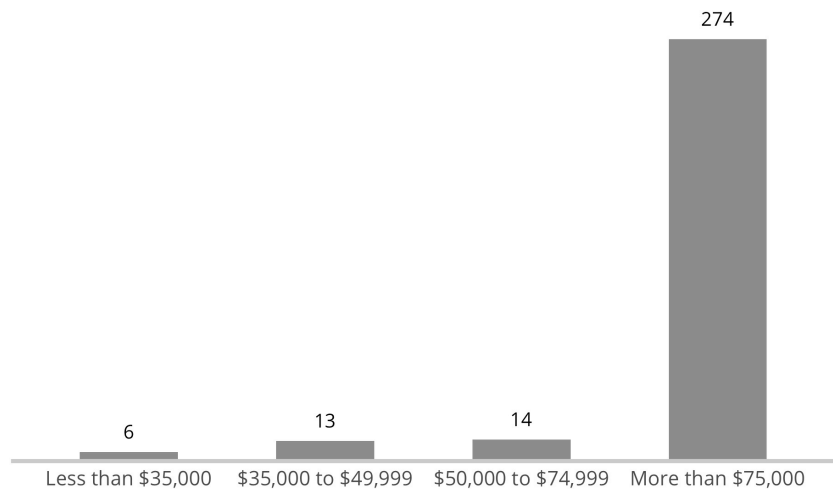
\$80,722 average advertised
salary among top ten IT jobs

Information Technology Wages

Only 307 Q4 2016 IT job postings advertised an hourly wage or annual salary. Of those that did, the majority (89 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 Wages in Job Postings

Q1 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
15-1132	Software Developers, Applications	\$24.49	\$31.41	\$41.29	\$52.84	\$62.33
15-1121	Computer Systems Analysts	\$24.90	\$32.41	\$42.22	\$52.19	\$61.08
15-1199	Computer Systems Engineers/Architects	\$19.41	\$26.22	\$35.31	\$46.22	\$55.56
15-1199	Information Technology Project Managers	\$19.41	\$26.22	\$35.31	\$46.22	\$55.56
15-1199	Business Intelligence Analysts	\$19.41	\$26.22	\$35.31	\$46.22	\$55.56
15-1134	Web Developers	\$17.84	\$20.97	\$26.29	\$32.47	\$38.64
15-1141	Database Administrators	\$25.15	\$32.59	\$42.84	\$51.69	\$59.65
15-1199	Software Quality Assurance Engineers and Testers	\$19.41	\$26.22	\$35.31	\$46.22	\$55.56
15-1122	Information Security Analysts	\$24.92	\$29.70	\$41.41	\$50.49	\$59.52
15-1143	Computer Network Architects	\$35.87	\$42.58	\$51.30	\$59.64	\$70.77

Data: EMSI, BLS
Analysis: Workforce Intelligence Network



Skilled Trades & Technicians (Manufacturing Focused)

Introduction

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.

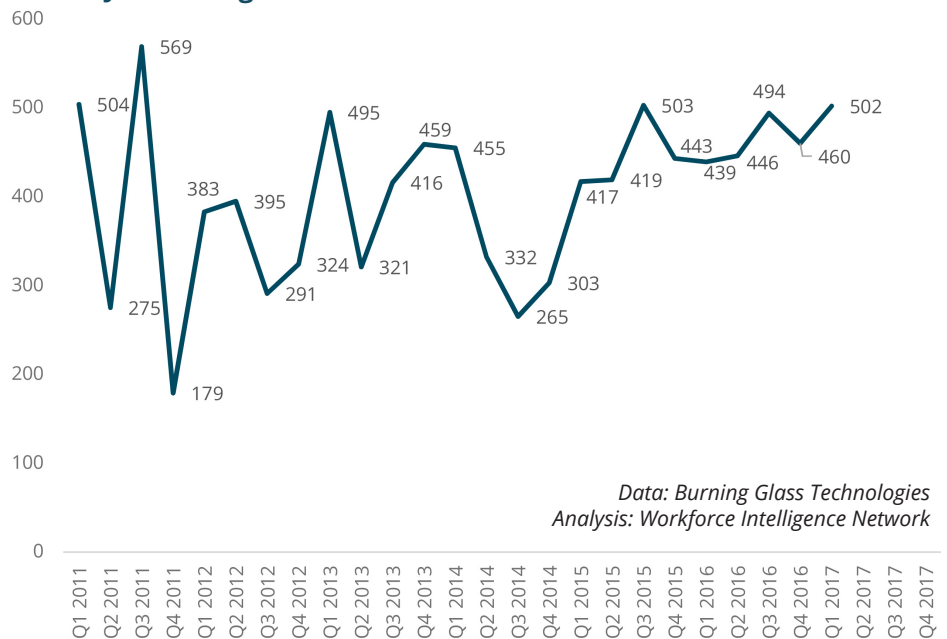
Job Posting Analysis

Online job demand for Skilled Trades workers in Detroit has increased 9.1 percent (42 postings) between quarters, from 460 postings in Q4 2016 to 502 in Q1 2017. 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 Analysis

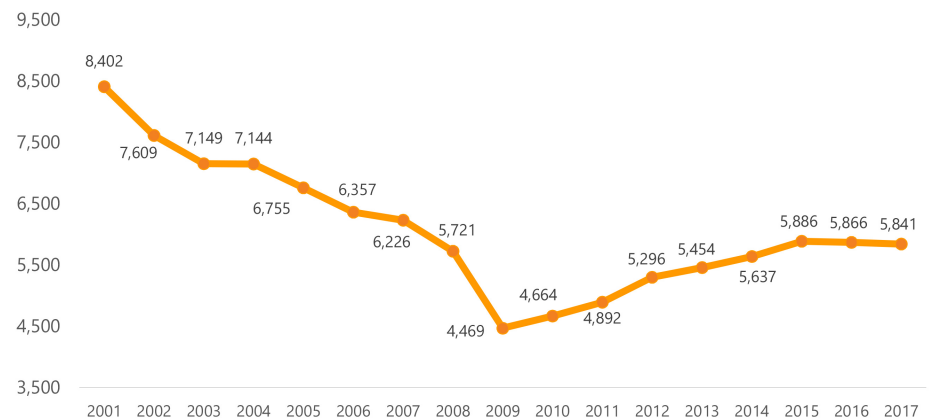
Although employment in the Skilled Trades occupations has been on decline in Detroit for far longer, this occupation group was especially hard hit by the Great Recession. Employment reached a low of 4,469 employees in 2009 and is making a slow recovery. During 2017, 5,841 Detroit workers have employment in a Skilled Trades position.

Online Job Postings



Employment Over Time

Q1 2017





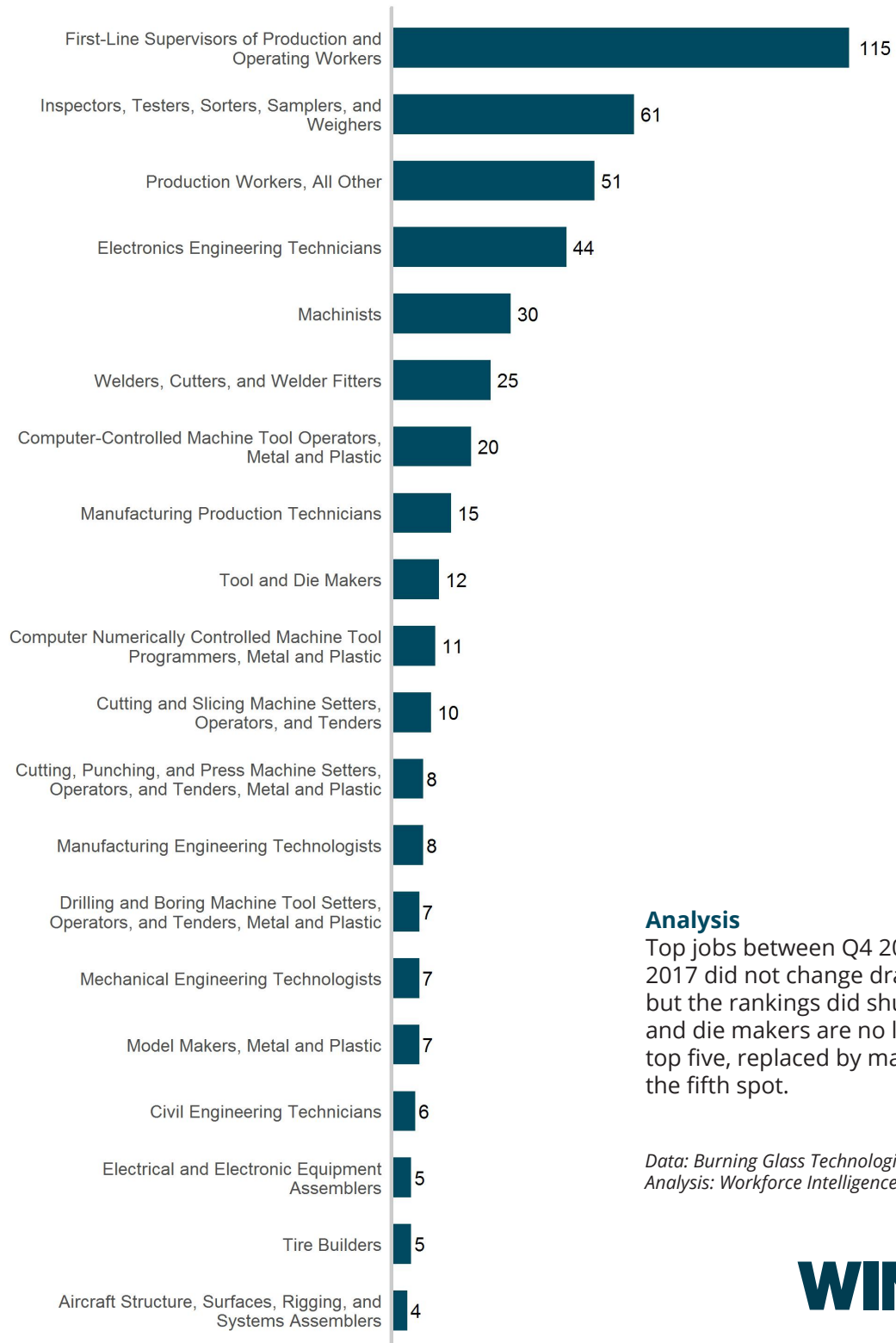
Now hiring:
502 online job postings

9.1%
increase in employer demand
between Q4 2016 and Q1 2017

Skilled Trades & Technicians

Top Jobs

Quarter 1 2017



Analysis

Top jobs between Q4 2016 and Q1 2017 did not change dramatically, but the rankings did shuffle. Tool and die makers are no longer in the top five, replaced by machinists in the fifth spot.

Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network



5,841 employees in Skilled Trades occupations



\$51,803 median advertised salary among top ten occupations

Skilled Trades & Technicians Educational Attainment Required

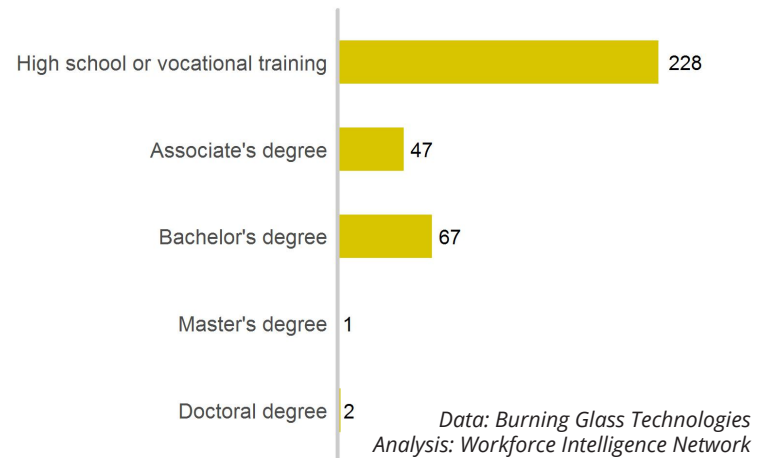
Many Skilled Trades positions in Detroit are open to jobseekers with relevant training or an associate's degree. Of the Q1 2017 job postings that specified a required level of educational attainment, 79 percent were open to candidates with some post-secondary training or a related two-year degree. Another 19 percent of job postings required candidates to hold a bachelor's degree.

Most Skilled Trades jobs in the City of Detroit are open to those with less than 5 years of experience. 42 percent of Q1 2017 postings are open to workers with less than two years of experience in the Skilled Trades. Most postings (50.6 percent) desired candidates with three to five years of experience.

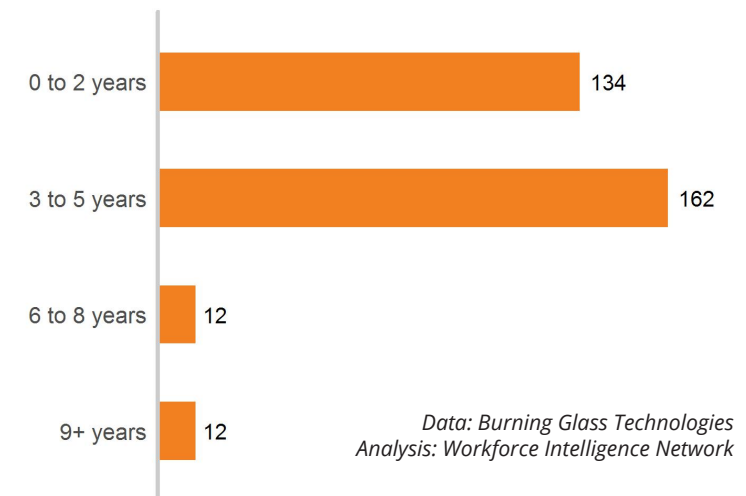
In-Demand Areas of Study

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

Educational Attainment



Experience Required





Education required: short-term training or associate's degree



Experience required: less than 5 years

Skilled Trades & Technicians In-Demand Skills

The occupations in the Skilled Trades group require a wide array of high-level technical skills. Traditional skills involving repair and machinery 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 and problem solving 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
- Supervisory skills
- Machining

Foundational In-Demand Skills

- Communication skills
- Problem solving, troubleshooting
- Physical demand
- Mathematics
- Quality assurance and control

Job Type

- Temporary: 4.4%
- Full-time: 58.2%
- Part-time: 6.6%

Certifications Required

- Civil service certification
- CDL Class A
- Basic computer skills
- American Chemical Society (ACS) certified
- Automotive service excellence (ASE) certification



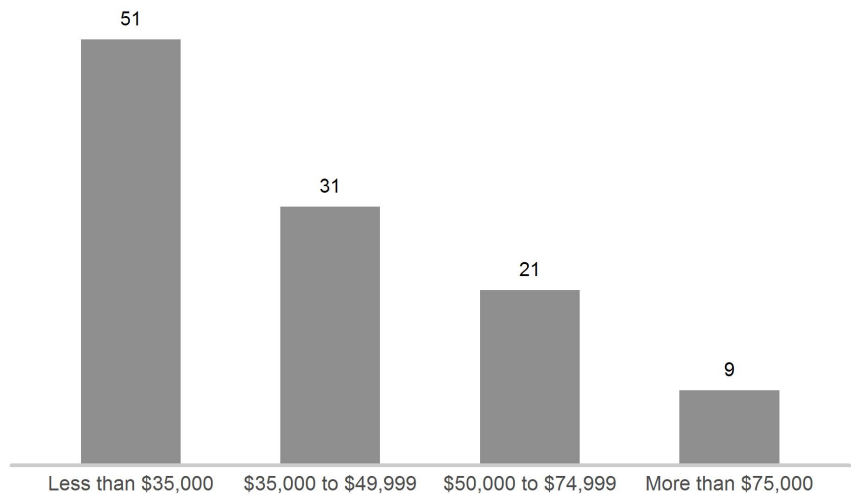
In-demand certifications:
ASE, CDL, ACS

58.2%
of the advertised Skilled Trades
jobs are full-time positions

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. Only 112 Q1 2017 job postings advertised an hourly wage or annual salary. Among those that did, the majority (45 percent) were for salaries less than \$35,000 a year. Wage data from the Bureau of Labor Statistics show that all the top ten most in-demand Skilled Trades occupations in Detroit earn a living wage over \$15 an hour at the median.

Advertised Wages in Job Postings 2017



Data: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Wage Data from Bureau of Labor Statistics 2016

Occupation Code	Occupation Name	10th Percentile Wages	25th Percentile Wages	Median Wages	75th Percentile Wages	90th Percentile Wages
51-1011	First-Line Supervisors of Production and Operating Workers	\$17.40	\$22.18	\$29.48	\$38.86	\$47.50
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$9.81	\$11.55	\$15.46	\$21.68	\$28.32
51-9199	Production Workers, All Other	\$10.77	\$13.64	\$16.54	\$18.93	\$24.89
17-3023	Electronics Engineering Technicians	\$15.77	\$19.62	\$24.77	\$31.12	\$36.94
51-4041	Machinists	\$12.71	\$15.79	\$19.49	\$24.55	\$29.91
51-4121	Welders, Cutters, and Welder Fitters	\$12.73	\$15.15	\$17.87	\$22.25	\$28.27
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	\$11.38	\$13.62	\$18.70	\$23.08	\$28.44
17-3029	Manufacturing Production Technicians	\$20.49	\$26.65	\$31.91	\$36.96	\$44.69
51-4111	Tool and Die Makers	\$16.99	\$21.20	\$26.38	\$32.46	\$36.25
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	\$16.84	\$20.04	\$24.64	\$29.31	\$33.34

Data: EMSI, BLS
Analysis: Workforce Intelligence Network

Annual Labor Market Data

	2010 Annual	2011 Annual	2012 Annual	2013 Annual	2014 Annual	2015 Annual	2016 Annual	2017 Annual (Thru 1st Quarter)	Change from 2016	Percent Change from 2016
Labor Force	276,884	261,767	257,697	257,498	250,489	241,961	244,664	247,938	3,274	1.3%
Employment	208,289	205,723	208,112	208,421	209,316	212,912	217,994	219,648	1,653	0.8%
Unemployment	68,596	56,043	49,585	49,077	41,173	29,050	26,670	28,291	1,621	6.1%
Unemployment Rate	24.8%	21.4%	19.2%	19.1%	16.4%	12.0%	10.9%	11.4%	0.5%	na

**Note: Monthly data averaged by year*

Data: Bureau of Labor Statistics

Quarterly Labor Market Data

	1st Quarter 2016	2nd Quarter 2016	3rd Quarter 2016	4th Quarter 2016	1st Quarter 2017	Change from 4th Quarter 2016	Percent Change from 4th Quarter 2016	One-Year Change from 1st Quarter 2016	One-Year Percent Change from 1st Quarter 2016
Labor Force	240,596	241,426	249,136	247,499	247,938	440	0.2%	7,342	3.1%
Employment	216,104	217,410	218,433	220,030	219,726	-304	-0.1%	3,622	1.7%
Unemployment	24,492	24,015	30,703	27,468	28,212	744	2.7%	3,720	15.2%
Unemployment Rate	10.2%	9.9%	12.3%	11.1%	11.4%	0.3%	na	1.2%	na

**Note: Monthly data averaged by quarter*

Data: Bureau of Labor Statistics












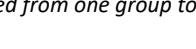
Monthly Labor Market Data

	January 2016	February 2016	March 2016	April 2016	May 2016	June 2016	July 2016	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017	February 2017	March 2017
Labor Force	239,506	240,626	241,656	244,462	238,767	241,048	245,852	250,986	250,569	249,656	249,306	243,534	243,710	249,773	250,332
Employment	216,279	215,237	216,796	217,816	216,471	217,944	217,592	218,535	219,172	220,583	219,660	219,848	219,883	218,947	220,348
Unemployment	23,227	25,389	24,860	26,646	22,296	23,104	28,260	32,451	31,397	29,073	29,646	23,686	23,827	30,826	29,984
Unemployment Rate	9.7%	10.6%	10.3%	10.9%	9.3%	9.6%	11.5%	12.9%	12.5%	11.6%	11.9%	9.7%	9.8%	12.3%	12.0%

** 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

	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Change Over Time	Annual Change Q1 2016-Q1 2017	Quarter Growth Q4 2016-Q1 2017
Total Postings	29,296	28,456	29,905	27,288	28,238		-3.6%	-0.8%
Agriculture	353	384	351	384	386		9.3%	0.5%
Business & finance	2,393	2,300	2,411	2,310	2,276		-4.9%	-1.0%
Construction	197	215	261	253	235		19.3%	9.3%
Customer service	5,283	5,240	5,415	4,888	5,044		-4.5%	-3.7%
Education	389	413	391	538	491		26.2%	18.9%
Energy	108	129	87	79	123		13.9%	-4.7%
Engineers & designers	1,130	1,057	1,273	977	1,001		-11.4%	-5.3%
Health care	5,228	5,123	5,403	5,131	5,702		9.1%	11.3%
Information technology	4,207	4,285	4,375	3,795	3,711		-11.8%	-13.4%
Skilled trades & technicians	439	446	494	460	502		14.4%	12.6%
Transportation, distribution, and logistics	1,780	1,652	1,704	1,541	1,339		-24.8%	-18.9%

**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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