



**Strategic Framework
Resource Team**

ENVIRONMENTAL SCAN: LABOR MARKET FORCES

An examination of this topic relative to NKU and its current environment, as summarized by the Resource Team

December 30, 2018

Acknowledgement:

Institutions are living systems, comprised of the dedication and aspirations of its community members. Something as important as charting the future the institution requires a collective effort across that entire system. The following team worked collaboratively in utilizing their knowledge, expertise, and experience in providing the Core Team the following environmental scan. We would like to recognize them for their hard work, their dedication to NKU, and their desire to help the Core Team chart a prosperous future for NKU, our students, and our region.

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Environmental Scan: Labor Market Forces Executive Summary

The work group on labor market forces looked at the labor needs of our region. Forecasting demand for labor is inherently a difficult process. Firstly, the demand for labor rises and falls with the business cycle. Secondly, many jobs require years of post-secondary education, which leads to timing issues. It has been well documented that students graduating during the depths of a recession often leads to initial earnings losses.¹ Thirdly, changing demographics in the population impact the size of the labor force and labor force participation rates. As a consequence, it is considered a best practice to look at longer term projections. Most projections available across the United States start with 10-year projections for labor supply and demand produced by the U.S. Bureau of Labor Statistics. This was the starting point for our work group as well. In addition to looking at the demand for talent by occupation, the group addressed several specific questions:

- What are the high demand fields in the region, state, and nation?
- What are the occupations expected to be most in demand in the next 10 years?
- What are the levels of educational attainment needed for high demand fields and occupations?
- What are the important niche programs at NKU that might not make the list of high demand occupations in the forecast models?
- What is the market demand for micro credentials, digital badges, certificates, apprenticeships, etc.?
- Will changing societal attitudes about higher education negatively impact NKU?
- What are selected factors impacting a changing competitive landscape?
 - Gainful Employment Rule – Risk or Threat.
 - Marketing Budgets – Risk or Threat
 - Recruiting URM
 - Why Are For-Profits Attractive to URM?

The following executive summary summarizes our findings and references documents found within the resource folder on Basecamp

Market Demand for NKU Graduates

Most occupations that require a Bachelor's degree or higher have nation-wide market opportunities and demand. While we provided demand projections for the Northern Kentucky region, many of NKU's graduates will be recruited by employers nation-wide. Therefore, the team included national projections as well.

¹ "Graduating in a recession leads to large initial earnings losses. These losses, which amount to about 9 percent of annual earnings in the initial stage, eventually recede, but slowly -- halving within five years but not disappearing until about ten years after graduation." *The Career Effects Of Graduating In A Recession*, National Bureau of Economic Research, <https://www.nber.org/digest/nov06/w12159.html>.

Northern Kentucky Local Workforce Area Highlights 2014-2024²

- Employment is projected to grow from 194,431 to 219,430 a gain of 12.86 percent.
- Total annual job openings are expected to be about 7,309.
- Growth in employment will create about 2,579 job openings annually.
- Approximately 4,370 annual job openings will result from separations from the labor force due to retirement or those who transfer to other jobs.
- Thirty-five percent of job openings will result from growth; the remaining 65 percent will result from separations from the labor force.
- The greatest number of annual job openings will be in *Office and Administrative Support*.
- Those occupations (945) followed Food Preparation and Serving Related Occupations (863), Transportation and Material Moving Occupations (812).
- The two occupations with the largest projected number of annual job openings combined are *Food Preparation and Serving Workers*, including *Fast Food* (159) and *Team Assemblers* (155).
- The highest growth rates among occupational groups are likely to be *Healthcare Support Occupations* (36.45%) followed by *Healthcare Practitioners and Technical Occupations* (26.5%) and *Construction and Extraction Occupations* (22.38%)

When examining occupational projections there are several important items to note.

First, be aware of the difference between total openings and net employment growth. For example, the projections for teaching occupations (SOC 25-1000) in NKY show net new job growth of 34 positions per year. However, an additional 24 opening per year are projected as a result of turnover, retirement and other types of job separations creating a total demand for an estimated 58 new entrants each year. For many occupations, replacements needs meet or exceed demand arising from net new job growth.

Second, the rate of occupational growth does not necessarily equate with higher wages. For example, the demand for home health aides is projected to increase by more than 46 percent, but these jobs nationally pay, on average, just \$23,200. This is 38 percent below the average pay for all jobs.

Third, fast growth does not indicate a large increase in the number of jobs. For example, nationally, information security analyst jobs are expected to increase 28.5 percent over the next decade creating 10,400 job openings. On the other hand, the demand for accountants and auditors is expected to increase just 10 percent, but create 141,800 openings.

So what are those occupations that require a post-secondary degree, pay above the median wage of \$35,000, and are expected to demand large numbers of graduates?

² Excerpted from <https://kystats.ky.gov/Content/Reports/2014-2024%20Northern%20Kentucky%20Occupational%20Outlook.pdf>, page 3

The Bureau of Labor Statistics (BLS) identifies more than 300 occupations requiring a post-secondary degree. Of those, only 10 occupations had a median annual wage of less than \$35,000, the median for all occupations. Using a criteria of a median wage of \$50,000 or more, reduces the number of relevant occupations only slightly to 277 in total. *In other words, most occupations requiring a post-secondary degree pay well.*

Table 1 presents data on the number of job openings nationally for the top 20 occupations ranked by number of estimated openings between 2016 and 2026.

Table 1: Number of Job Openings 2016-2026, United States among Occupations Requiring a Post-secondary Degree and Paying a Median Wage of \$50,000 or More

	Number of Job Openings 2016-2026	Median Annual Wages 2017
General and operations managers	210,700	\$100,410
Registered nurses	203,700	\$ 70,000
Accountants and auditors	141,800	\$ 69,350
Elementary school teachers, except special education	112,800	\$ 57,160
Business operations specialists, all other	104,200	\$ 70,010
Software developers, applications	85,700	\$101,790
Management analysts	83,900	\$ 82,450
Secondary school teachers, except special and career/technical education	79,500	\$ 59,170
Managers, all other	79,200	\$105,610
Market research analysts and marketing specialists	77,100	\$ 63,230
Human resources specialists	57,600	\$ 60,350
Financial managers	56,900	\$125,080
Middle school teachers, except special and career/technical education	50,500	\$ 57,720
Computer systems analysts	44,900	\$ 88,270
Lawyers	40,700	\$119,250
Child, family, and school social workers	38,300	\$ 44,380
Securities, commodities, and financial services sales agents	38,000	\$ 63,780
Sales representatives, wholesale and manufacturing, technical and scientific products	37,000	\$ 78,830
Medical and health services managers	36,700	\$ 98,350
Sales managers	36,300	\$121,060

Data source: U.S. Bureau of Labor Statistics

While it is important to meet the needs of our high demand sectors, we should not lose sight of our niche programs that do not produce large numbers of graduates, but fill important positions in the region. For years, many of our niche programs have helped individuals pursue their passion for areas such as public service and non-profit management in the Northern Kentucky/Greater Cincinnati region and beyond. These students from these programs actively engage in service learning and capstone projects that have immediate positive impacts on our

region. For example, our master's in public history program produces more than half of the professional employees that serve our museums and historic sites. Without these graduates the Cincinnati Museum Center would not make their November opening, and some museums would close their doors permanently. Another example is our Industrial/ Organizational Psychology program who's graduates provide a labor force for local companies, such as human resource consultants for Cincinnati Children's, manager of associate engagement at St. E's, manager of talent acquisition at Fifth Third, and compensation manager at Kroger's. A third example is our master's in public administration program which produces graduates who lead and manage organizations that enhance the health, safety and well-being of more than 2 million residents in roles such as county administrators, city and town managers, police and fire chiefs, and managers of agencies that enhance the region's environment, public health, children's services, and the arts.

What are the skills that employers are requesting in their employees that can be generalized beyond a specific occupation and integrated across the NKU curriculum?

Little change is seen year to year in the ratings that employers give to the eight NACE career readiness competencies in terms of essential need. Critical thinking/problem solving is once again rated as most essential by this year's respondents. The top four most essential competencies have also not changed in terms of order with teamwork/collaboration, professionalism/work ethic, and oral/written communications falling second through fourth on the list, as they did last year.

The following are suggestions on how these skills, required regardless of the student major, could be integrated in the curriculum.

Revision of the general education requirements to focus on courses specifically addressing these skills.

Departments or group of departments may establish an advisory board comprised of employers or others involved in the hiring or admission of their majors. The goal of this advisory board would be to help departments develop activities embedded in their own course that would also address the desired skills for graduates in that field. These activities should be thought through and highlighted as addressing one or more of these skills. They may go more in-depth than the normal SLO of the courses. This approach might be easier to implement in the curriculum at each department level.

What is the market demand for micro credentials, digital badges, certificates, apprenticeships, etc.?

There is a significant talent gap in the greater Cincinnati region and across the US in certain industries and within certain job types. In many cases, higher education is not producing enough graduates to fill these needs. Companies and government organizations are partnering together to deal with this growing economic issue. Many of the solutions that are either in

place or are in the process of being developed deal with providing certificates, discipline specific training and apprenticeships opportunities. Programs are sprouting up for training in the areas of information technology, cybersecurity, manufacturing, health professions and many others to address the shortage of talent in new ways.

It was not possible to complete a NKU/Northern Kentucky specific demand analysis in the 30-day timeframe. It is a recommendation of the committee that such an analysis be completed.

Will societal attitudes about higher education negatively impact NKU?

There is a divergence in opinions between executives/hiring managers, which express a higher degree of confidence in the value of a college education than the general public, which is increasingly skeptical of the value of a four-year degree. This skepticism has increased interest in alternative educational opportunities such as trade schools, apprenticeships, and industry certifications.

“The number of postsecondary certificates and degrees conferred at each award level increased between 2000–01 and 2015–16. The number of certificates below the associate's level conferred during this period increased by 70 percent. The number of degrees conferred during this period increased by 74 percent at the associate's level, by 54 percent at the bachelor's level, by 66 percent at the master's level, and by 49 percent at the doctor's level.” (National Center for Education Statistics).

Recognizing the increasing prevalence of alternative educational credentials, the National Center for Education Statistics has released new detailed data on the prevalence and characteristics of certifications and licenses in the U.S. from the Adult Training and Education Survey (ATES). In 2016, a total of 27 percent of adults reported having a non-degree credential—that is, having a postsecondary certificate, a certification, or a license while 21 percent of adults reported completing a work experience program.

With rising concerns about the return on investment to education, there is increasing interest in alternatives to a four-year degree. This is both an opportunity and a threat to NKU enrollments depending on the institution's response to this changing trend.

What are selected factors impacting a changing competitive landscape?

It was beyond the scope of a 30-day analysis to consider all the potential factors impacting a changing competitive landscape. The committee opted to highlight trends with several key factors.

When we think about serving the current labor and market force demand, we need to include adult students in this conversation. There are adult students who may be in those fields or hold certifications in those fields currently, but need a degree in order to advance to the next level. In order for these students to continue working, NKU has to offer more flexibility in their delivery modes. While online courses help with this, not all students are able to be successful

with online courses. In fact, many shine brighter in on-campus courses because they get to mix and mingle with other adult students and professors in their field of study. The Organizational Leadership, Integrative Studies, Business Informatics, and Computer Information Technology programs are degrees at NKU to which others can use as models. These programs offer a haven for working adult students in that they can get their entire degree through a combination of evening and online courses – only having to come to campus at a maximum of two nights a week.

In addition to course delivery mode flexibility, NKU should consider a move towards accepting more options for credit-for-prior-learning (also known as prior learning assessments). Certifications and knowledge that students already hold deserve a special look into whether NKU can offer equivalency course credit (not just a waiver). For example, if a student passes IRS Special Enrollment Examinations that include all learning outcomes covered in ACC 320, then NKU should set up an equivalent for this. We have been successful in doing this with other industry credentials. But, we need to keep up the momentum of this effort to serve our students.

It will be key to have the support of the faculty if the focus is moved to other educational pathways (different class schedules, professional adult learners etc.). Even for faculty that might be fine with a slight move away from the liberal arts education, there are several factors that may represent obstacles. For example: 1) If courses are offered late at night or over the weekend, 2) Teaching professional adults is not the same as teaching students coming straight from high school in terms of the content of the courses. Faculty are educated to teach from the “bottom up” not from the “up to the upper”. This means that faculty may need professional development in specific areas before being able to teach other professionals. That also means that the credentials currently used for hiring new faculty may have to be changed: we may not want to hire a brand new Ph.D., but a seasoned professional.

The potential relaxing of the *Gainful Employment Rule*, could be damaging to NKU. Generally, in order to be eligible for funding under the Higher Education Act Title IV student assistance programs, an educational program must lead to a degree at a non-profit or public institution, or it must prepare students for "gainful employment in a recognized occupation. Upon implementation, the rule resulted in the closure of 800 (mostly for-profit) programs in the United States. There has been speculation in the media that the U.S. Department of Education under the leadership of Betsy DeVos would move to weaken if not scrap the rule, which could increase competition within the market. As of December 2018, no announcement of rescinding or changing the Gainful Employment regulations has been announced.

Finally, the challenges of recruiting URM students. In general, underrepresented minorities are more likely to receive their credentials from for-profit schools. So why are URM more likely to attend for-profit schools? Logistics play a part. The physical campuses are kept small and are usually located on direct bus routes. Program structure also plays a part. Prospective students are generally walked through a very streamlined enrollment process, tuition is all-inclusive (no

lab fees or textbook fees), and much of the paperwork is completed for the students. Additionally, for-profit institutions are engaged in targeted marketing aimed at URM populations.

What impact will dwindling state funds and changing societal attitudes have on higher education?

The biggest risks to educational opportunity for the region and state are dwindling state funding and souring societal perceptions of higher education. This will likely limit opportunity by first limiting faculty, staff, and resources at our university. With that, the students' cost to attend will also go up, so there are two negative factors possibly keeping someone from accessing higher education. The less financially stable a student and his or her family is, the less likely they'll be to have access. Additionally, rising costs will have a similar effect on retention year to year. Students are one poor decision or one catastrophic life event away from not being able to persist. The financial realities that have students working more hours than we'd recommend also put access and retention at risk. They simply have to work more than 20 hours per week for the most part and we have to find a way to adapt to that academically.

Drastically cutting funds for higher education will put the region and state at risk by effectively limiting the number of college-educated citizens ready and qualified for global economy engagement. Kentucky must adapt to the world stage economically and in regard to workforce. The funding path it's on at this point isn't conducive to that.

The discrepancy between the way elected officials in government positions characterize the value of higher education and the way the private sector values a college degree should concern us. When the governor of Kentucky says things like, "if you're studying interpretive dance, God bless you, but there's not a lot of jobs right now in America looking for people with that as a skill set," he demonstrates a fundamental lack of awareness about what a college education means. Looking at the AAC&U surveys of 1,000 business executives and hiring managers across the country, the findings overwhelmingly support the idea that a college education significantly contributes to success in the workplace and increases one's potential for advancement. Moreover, the value of a four-year degree, according to these surveys, is not based on trade-specific training, but, rather, on the way a college education produces well-rounded, responsible, culturally sensitive, independent thinking, and adaptable citizens of the world. A serious potential risk NKU faces in this current political climate that devalues a liberal arts education and increasingly pushes toward a trade school approach is capitulating to those false perceptions by radically redesigning itself or leaning away from its mission as a four-year, comprehensive university. We should be cautious about abandoning NKU's mission to deliver innovative, student-centered education that engages in impactful scholarly and creative endeavors. We should be able to meet the labor needs of the region without compromising our commitment to a liberal arts education.

What can NKU do relative to access and completion for underserved students to ensure the diverse workforce that our business partners want and need?

NKU engages in a variety of best practices designed to ensure achievement in knowledge, adaptive skills, and hands-on experiences to prepare our students for evolving careers, underserved students included.

However, what is “multicultural tapestry of knowledge,” and how do we ensure that our students experience it, much less appreciate it? Are we fully seeking diversity, equity and inclusion in these efforts? Is cultural competence actually a goal of our programs? For instance, our cultural pluralism requirement in the Foundation of Knowledge is only three hours — one class. A student could take one course focused on one culture (perhaps his or her own) and be finished with it. How can one class encourage cultural competence?

Is cultural competence addressed in our first-year programs, learning communities, undergraduate research, and experiential learning? Is cultural competence addressed in each class and in each academic program? In order to ensure the diverse workforce our business partners want, it should be and we should aspire to make sure of it. We must ensure that every major and minor identify where in their program students are asked to demonstrate cultural competence within the program and we should collect artifacts.

Additional Insights

The following section provides some additional information around some of the topics contained in the executive summary. While this information did not make its way into the executive summary, it was felt that it should still be provided to the Core Team, along with the materials provided in the appendices.

Market Demand for NKU Graduates

The U.S. Bureau of Labor Statistics (BLS) produces employment projections for the nation. The latest forecast covers the 2016-2026 decade.¹ From the U.S. projections, state projections are prepared by the labor market information section of State Employment Security Agencies within each state using methodology prescribed by the BLS ensuring consistency across states.

Indiana LMI occupational projections: <http://www.hoosierdata.in.gov/FD/landing.aspx>

Kentucky LMI occupational projections: <https://kystats.ky.gov/KYLMI/Index/>

Ohio LMI occupational projections: <http://ohiolmi.com/proj/projections.htm>

The **Ohio LMI** provides projections, as a regional unit, just for five Ohio counties of the total 15 counties comprising the Cincinnati MSA. Ohio has projections through 2026.

The **Kentucky LMI** provides projections by Area Development District. The NKY ADD is comprised of eight counties. Boone, Campbell, Gallatin, Grant, Kenton and Pendleton are part of the Cincinnati MSA. Carroll and Owen counties are part of the NKYADD, but are not part of the Cincinnati MSA. Bracken is part of the Cincinnati MSA, but not included in the NKYADD definition. Kentucky has projections through 2024.

The **Indiana LMI** provides projections by economic growth region. The three Indiana counties, which are part of the Cincinnati MSA (Dearborn, Ohio, and Union spans two Indiana regions). Indiana has projections through 2026.

While each of the three relevant states provides projections, it is beyond the scope of a 30-day analysis to calculate projections specifically for the 15-county Cincinnati MSA geography. PDF documents providing projections for NKYADD and the Cincinnati 5-county region (Appendices A and B) have been uploaded to basecamp and attached as Appendices. Additionally, an Excel workbook with the national forecasts was collected and can be provided as well.

¹ The BLS publishes an extensive summary of its projection methodology online:
<https://www.bls.gov/opub/mlr/2017/article/projections-overview-and-highlights-2016-26.htm>

What are the skills that employers are requesting in their employees that can be generalized beyond a specific occupation and integrated across the NKU curriculum?

Utilizing the NACE 2019 Job Outlook Survey (Appendix C), one can see that there is little change in the year to year ratings that employers give to the eight NACE career readiness competencies in terms of essential need. Critical thinking/problem solving is once again rated as most essential by this year's respondents (See Figure 42). The top four essential competencies have also not changed in terms of order with teamwork/collaboration, professionalism/work ethic, and oral/written communications falling second through fourth on the list, similar to how they were ranked last year. In addition, all of the four top-rated competencies are rated above "essential."

However, competencies that are rated between "somewhat essential" and "essential" have changed order. This year, digital technology is the fifth most essential competency, according to respondents, and leadership is sixth. This is interesting since, earlier in this report, we found that leadership skills were also lower on this year's list of attributes that employers look for on a student's resume. The two lowest-rated competencies, career management and global/multi-cultural fluency, remain in the same order, but their average ratings fell.

*FIGURE 42 (Per NACE Report). Employers Rate the Essential Need of the Career Readiness Competencies

Competencies	Weighted Avg. Rating*
Critical Thinking/Problem Solving	4.66
Teamwork/Collaboration	4.48
Professionalism/Work Ethic	4.41
Oral/Written Communications	4.30
Digital Technology	3.84
Leadership	3.65
Career Management	3.38
Global/Multi-cultural Fluency	2.78

**5-point scale, where 1=Not essential, 2=Not very essential, 3=Somewhat essential, 4=Essential, 5=Absolutely essential*

In terms of proficiency, employers gave students slightly higher marks in all eight competencies this year, but all ratings still fall in the range between "somewhat proficient" and "very proficient." Employers feel that recent graduates are most proficient in teamwork/collaboration, digital technology, and critical thinking/problem solving.

Through their proficiency ratings, employers kept the top six competencies in the same order as they were last year. However, students are rated more proficient in global/multi-cultural fluency than career management this year. (See Figure 43).

*FIGURE 43. Employers Rate Recent Graduates on the Eight Career Readiness Competencies

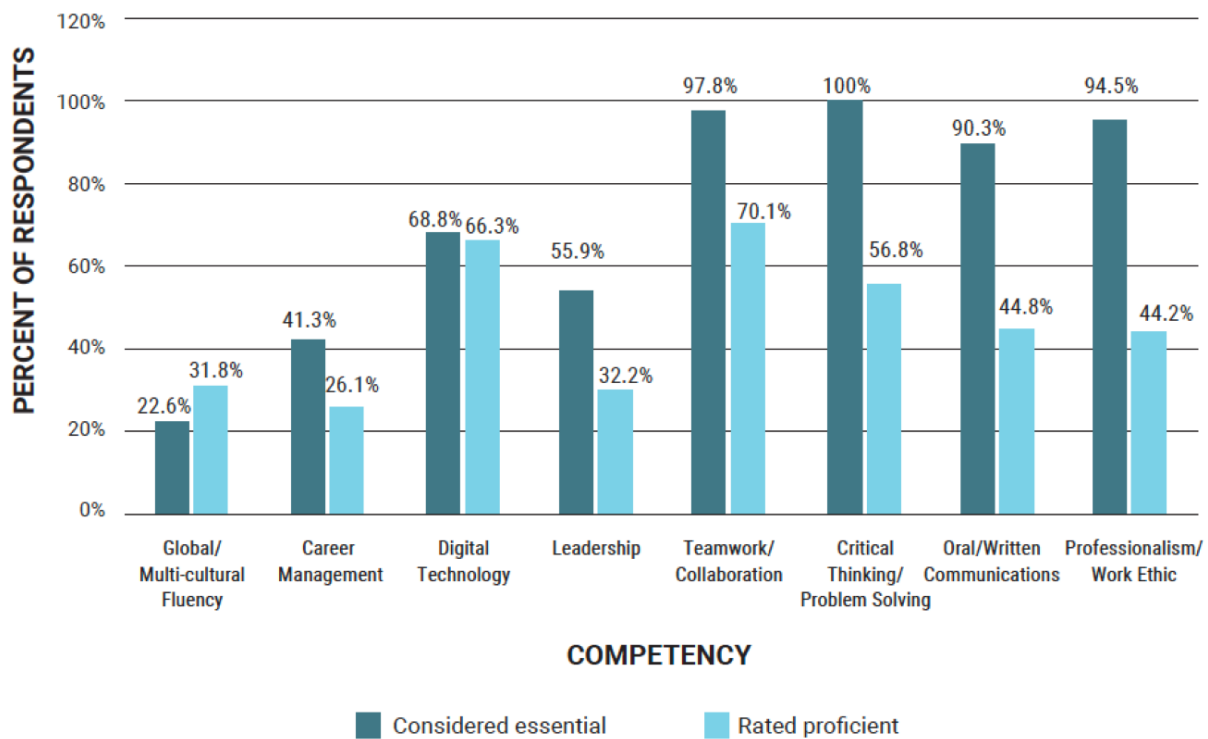
Competencies	Weighted Avg. Rating*
Teamwork/Collaboration	3.83
Digital Technology	3.76
Critical Thinking/Problem Solving	3.64
Oral/Written Communications	3.49
Professionalism/Work Ethic	3.47
Leadership	3.31
Global/Multi-cultural Fluency	3.13
Career Management	3.05

*5-point scale, where 1=Not at all proficient, 2=Not very proficient, 3=Somewhat proficient, 4=Very proficient, 5=Extremely proficient.

In examining the need vs. proficiency ratings of all eight career readiness competencies, the findings show that skill gaps remain in certain areas. (See Figure 44).

FIGURE 44

Need vs. Proficiency on Career Readiness Competencies, by Percent of Respondents



*The percentages corresponding to "considered essential" represent, among all responding employers, the percentage who, on a five-point scale, indicated that the respective competency was either "essential" (4) or "absolutely essential" (5) for college graduates to enter their work force. The percentages corresponding to "rated proficient" represent, among all responding employers, the percentage who, on a five-point scale, rated recent graduates either "very" (4) or "extremely" (5) proficient in the respective competency.

Among the four top-rated competencies in terms of need (critical thinking/problem solving, teamwork, professionalism/work ethic, and oral/written communications) the difference between the need and proficiency ratings are the greatest. They range from 27.7 percent for teamwork to 50.3 percent for professionalism. Also, just 56.8 percent of respondents consider students proficient in critical thinking/problem solving, yet 100 percent of employers rated the competency as very or extremely essential.

There are, however, two competencies for which students are meeting or exceeding employers' expectations. While 68.8 percent of respondents consider digital technology to be essential, an almost equal percentage (i.e., 66.3 percent) consider students to be proficient. In addition, global/multi-cultural fluency is rated highly in terms of essential need by just 22.6 percent of respondents, but more than 31 percent of employers rated students as proficient.

What is the market demand for micro credentials, digital badges, certificates, apprenticeships, etc.?

There is a significant opportunity for NKU to further impact the economics and overall talent gap of the region and beyond. For example, in a recent study, Redi Cincinnati (Appendix D) indicated that roughly 1,600 graduates would enter the market for application software developer roles, but the demand was at least 2,200. For this specific job type, that leaves a gap of 600 for simply one year.

IT Talent Demand – 1st Example

There are roughly 40,000 IT workers in the greater Cincinnati region (per Cincinnati Chamber of Commerce) with a current estimate of 2,500 – 3,500 current and unfilled openings. It is projected that by 2020 there will be 11,000 unfilled tech jobs in the region. These circumstances are driving the business community to find talent via non-traditional means. Organizations are turning to certificates, coding camps, apprenticeships and other creative scenarios as a way to fill the talent gap. Furthermore, some believe that technology is changing so rapidly that adult education in the IT areas will become even more important than it is today. The Cincinnati Chamber of Commerce has launched a major effort with <https://apprenticareers.org/> to retrain the existing workforce in IT skills. All of this seems to point to a risk for NKU that there will be other significant paths forward in solving the talent gap unless NKU moves forward quickly in the IT adult education/professional development area. As this seems like a risk, it is also an opportunity to build on the already leadership role that NKU plays in the IT community with the College of Informatics.

Background Links

<http://cincyisit.com/>

<http://www.cincinnati-chamber.com/talent-initiatives/workforce>

<https://www.geekwire.com/2017/wtias-apprenti-program-turning-skilled-tech-workers-dozens-no-tuition-costs/>

<https://www.nytimes.com/2018/07/19/us/politics/trump-worker-training.html>

<https://www.dol.gov/apprenticeship/docs/20180410-Subcommittee-White-Papers.pdf>

<https://www.securitymagazine.com/articles/87871-could-cybersecurity-apprentices-fix-the-nations-talent-shortage>

Legal Technology Demand – 2nd Example

While demand for lawyers is projected to grow 8% in the next 10 years, as in keeping with other professions, the ratio of new legal positions to new attorneys graduating law school is not increasing at the same rate and competition for attorney positions remains very strong. Law firms are not hiring at the same rate as in previous decades and companies have decreased their outsource legal spend and are moving costs internally. As stated above, there is an IT and, more specifically, cybersecurity talent gap in the region. Cybersecurity Ventures projects that companies and consumers will spend over \$1 trillion globally over the next five years on cybersecurity (projected growth of 12-15% as compared to the 8% projected in other industries). The Coalition of Technology Resources for Lawyers and the Information Governance Initiative found a 550% increase in the number of projections that law firms will begin using analytics for legal technology programs. While 99% of practitioners at Relativity Fest Chicago (<https://relativityfest.com/>) believe that analytics “will be very important, will be considered indispensable, and use will be widespread,” many practitioners are not prepared to adapt their practice to the changing technology. Law firms suffered some of the worst cybersecurity breaches in the past few years, which has resulted in a 65.5% increase in Information Governance budgets at firms. The need for credentialing and licensing in technology for practitioners and those seeking to fill the cybersecurity need has grown tremendously and is not matched by the output of attorneys and other university graduates with technology expertise.

Background Links

<https://www.bls.gov/opub/mlr/2013/article/pdf/occupational-employment-projections-to-2022.pdf>

<https://www.careerbuilder.com/advice/employers-looking-for-more-educated-workers>

<https://www.bls.gov/ooh/legal/lawyers.htm#tab-6>

<https://cybersecurityventures.com/cybersecurity-market-report/>

How will state funds and societal attitudes about higher education negatively impact NKU?

Value of College Degrees in Business Sector

According to a recent report put out by the Association of American Colleges & Universities (AAC&U) (Appendix E), there is great confidence in higher education among those in the business sector. The report summarizes selected findings from two parallel national surveys, one of 501 business executives at private sector and nonprofit organizations and another of 500 hiring managers whose current job responsibilities include recruiting, interviewing, and/or hiring new employees. Both executives and hiring managers express a higher degree of confidence in colleges and universities than does the American public. They also agree upon the value of college and believe that it is both important and worth the investment of time and money (Association of American Colleges & Universities, 2018).

Specifically, executives and hiring managers ranked the skills for recent graduates that they valued most. The most valued skill by executives and hiring managers was oral communication followed by critical thinking and analytical reasoning skills. Other valued skills were the ability to

make ethical judgements, work effectively in teams, and write. The results of this survey demonstrate the continued commitment to teach students skills and knowledge that cut across majors. In other words, a liberal arts education is still the best option for long-term success in the workforce.

Other notable findings from the AAC&U report include demonstrated value placed upon project-based learning experiences, particularly internships and apprenticeships. An overwhelming majority of executives and hiring managers said they would be more likely to hire a recent graduate who has held an internship or apprenticeship with a company or organization. Increasing experiential learning opportunities for students would not only better prepare them for the workforce but would help market NKU as a networking asset.

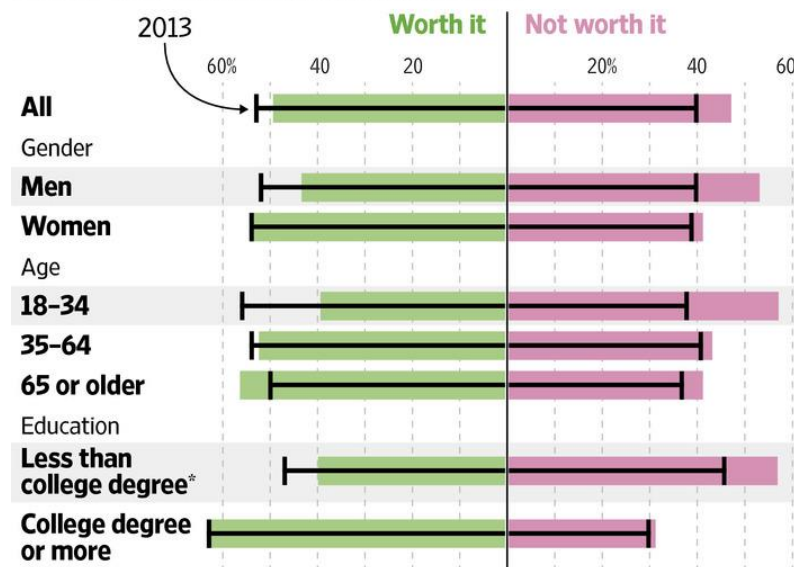
Low Favorability of a College Degree in General Public

Unfortunately, the favorability of the four-year college degree in the business sector does not translate to the general public. In a Wall Street Journal/NBC News survey conducted in 2017, results indicated “an increase in public skepticism of higher education from just four years ago” with divisions in opinion “falling along gender, educational, regional and partisan lines” (Belkin, 2018).

Slipping Grades for Higher Education

Fewer see the benefits of a college education, especially younger people and those without a four-year college degree.

Is a four-year college degree worth the cost?



*Including those with a degree from a two-year institution

Sources: WSJ/NBC News telephone poll of 1,200 adults conducted from Aug. 5-9; Margin of error +/- 2.82 pct. pts.; CNBC AAES June 2013 survey

THE WALL STREET JOURNAL.

According to the Wall Street Journal report, the rise in public skepticism of higher education is largely because of increases in student debt—\$1.3 trillion to date. The strong labor market and increases in college tuitions make trade-school options much more attractive to certain sectors of the population, at least in the short term.

Kentucky Dual Credit

The allure of trade schools has driven the agenda of Kentucky's State Legislature. In particular, Governor Matt Bevin has signaled his desire to fund programs that will increasingly allow students to curtail a liberal arts education and/or funnel them into technical fields.

The Dual Credit program is particularly pernicious to higher education, student success, and, ultimately, the region's labor force. The Dual Credit program allows high school students to gain both high school and college credit by taking a college-accredited course taught either on a high school or college campus. Ostensibly designed to decrease tuition costs for students entering college by allowing them to cover more credit hours in high school, the program's fundamental flaw is assuming a course taught by a high school teacher is equivalent to the college-level. Moreover, the assumption that the first-year college experience is insignificant to the development and success of individuals is deeply short-sighted.

The negative by-product of the Dual Credit system for students is manifold. Because high school students who have earned dual credit enter college as Sophomores and sometimes Juniors, they 1) miss the experience of being part of a supportive cohort 2) miss opportunities to develop relationships with professors who are experts in their field 3) are developmentally behind their fellow classmates 4) have a higher risk for failure because they have not been given the necessary preparation to succeed in a college environment with higher demands and expectations.

Ultimately, the Dual Credit system enables students to bypass General Education at the college-level by allowing them to cover those courses in high school. This negatively impacts not only the ability for students to succeed in college but also in the workforce. If the labor market values oral and written communication, critical thinking skills, and the ability to make ethical judgements and work effectively in teams, then ideologies driving state initiatives to diminish the scope and effectiveness of higher education will not advantageously serve the region or its citizens.

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Selected factors impacting a changing competitive landscape?

Gainful Employment Rule (look at website to add to this section)

Generally, in order to be eligible for funding under the Higher Education Act Title IV student assistance programs, an educational program must lead to a degree at a non-profit or public institution or it must prepare students for "gainful employment in a recognized occupation." Therefore, with very few exceptions, any non-degree program offered by non-profit or public institutions and all educational programs offered at for-profit institutions must lead to gainful employment (<https://studentaid.ed.gov/sa/about/data-center/school/ge>).

Debt-to-Earnings rates (D/E rates) are used to determine whether a gainful employment (GE) program prepares students for gainful employment in a recognized occupation. A D/E rate is based on the typical loan debt and earnings of a cohort of the program's former students who completed the program, usually those who completed during a two-year period concluding two years prior to the D/E rate calculation year. This delay is to account for the ramping up of the students' earnings upon completion of the program (<https://studentaid.ed.gov/sa/about/data-center/school/ge>).

Two D/E rates, the *Annual Earnings Rate* and the *Discretionary Income Rate*, are calculated for each program as a measure of the ability of program completers to reasonably repay the educational debt incurred for their attendance in the program.

For the *Annual Earnings Rate*, the numerator is the calculated annual loan payment amount—an estimate of the annual loan repayment amount based on the median educational debt of the members of the cohort. The denominator is the higher of the cohort's mean or median earnings obtained from the Social Security Administration (SSA). The *Discretionary Income Rate* uses the same annual loan payment amount in the numerator as the Annual Earnings Rate but the denominator is the higher of the mean or median earnings minus 150% of the poverty guideline.

Annual Earnings Rates of less than or equal to 8% are considered passing rates, meaning that 8% or less of their income goes towards student loan debt. Annual Earnings Rates greater than 8% but less than or equal to 12% are zone rates (e.g., acceptable), while Annual Earnings Rates greater than 12% are failing rates, meaning that more than 12% of the annual income is used for educational debt. Discretionary Income Rates less than or equal to 20% are passing rates, indicating that after accounting for living expenses less than 20% of discretionary income goes towards educational debt. Rates greater than 20% but less than or equal to 30% are zone rates, while rates greater than 30% are failing rates (indicating that nearly a third of discretionary income goes towards educational debt).

The US Department of Education announced in the summer of 2018 the intention to repeal the Gainful Employment Rule. This has been delayed until the end of the year (<https://www.acenet.edu/news-room/Pages/ED-Delays-Final-Regulations-on-Borrower-Defense-Gainful-Employment.aspx>).

What factors regarding recruiting underrepresented minorities impact a changing competitive landscape?

According to another AACU report by Taylor, Milem, and Coleman (2016), *Bridging the Research to Practice Gap: Achieving Mission-Driven Diversity and Inclusion Goals*, pedagogy and curricular offerings are key to our diversity goals and, thus, recruiting underrepresented minorities. Negative classroom experiences for underrepresented students may have a negative impact on their overall attitude and their success. It is important NKU minimize these negative effects as best we can (<https://www.aacu.org/sites/default/files/BridgingResearchPracticeGap.pdf>).

A diverse faculty and staff indicates the cultural competency of the university and would encourage that of our students. NKU must commit to a truly diverse faculty and staff. Prioritizing cultural competence in ourselves, in our classes, and in our programs would encourage the same in our students, our graduates, and in turn, our future students. While more work must be done, NKU is committed to access and inclusion of all students. According to the NKU Office of Inclusive Excellence, we are “committed to and accountable for advancing principles and practices of diversity, equity and inclusion into the core aspects of the university.”

We believe that our efforts at inclusion ensure success for diverse students, leverages the educational and institutional benefits of diversity and creates the conditions for the flourishing of all students, faculty and staff. The university, through the Office of Inclusive Excellence, claims “a culture of inclusion” which promotes “individual uniqueness, whereby all members of the NKU community experience a sense of belonging through respectful interactions, equitable policies and procedures, and opportunities to fully participate in the life of the university.”

Furthermore, according to this office, NKU’s 2022 Inclusive Excellence Plan provides the vision and the practices to make visible the University’s commitment to becoming a diverse, equitable, and inclusive community. The question becomes “how is that vision put into practice?”

NKU has, in fact, engaged in initiatives around hiring diverse faculty with extensive process aids in recruitment of diverse candidates, understanding bias, evaluation rubrics and more. We have offered a campus climate survey and a diversity dialogue series. The university has a variety of academic programs, classroom resources and other resources that are designed to commit us to inclusion and equity. Among the campus resources available to students, alumni, faculty and staff are:

- Adult-Centered Education
- African-American Programs and Services
- American English Language Program
- Black Faculty/Staff Association
- Compliance and Institutional Ethics
- Disability Programs and Services
- Office of Education Abroad
- Office of International Students and Scholars
- Latino Programs and Services
- LEAP
- LGBTQ Programs and Services
- Norse Violence Prevention Center
- SAFE: Staff, Administrators and Faculty for Equality
- TRiO
- Veterans Resource Station

Many of these support services are for students who opt in or are included in one or more demographics. Those students who do not identify as URM are possibly not involved in inclusive-excellence efforts because these are offered to identity-based groups currently. Of course, more can and should be done if we are to remain an access institution committed to providing opportunities for social, civic and economic mobility for everybody. As society further defines the scope of inclusion and what equity means, NKU must continue to adapt in good faith. And as we adapt, we must make these offerings known to the community and prospective students.

Marketing towards URM students – How and Why

Targeting URM students via data analytics is not new. While much marketing is done online; TV ads are very pervasive (<https://www.youtube.com/watch?v=v2lkZZmd6RA&feature=youtu.be>). The previous linked ad mentions single working mothers, rural farmers, veterans, working adults, immigrants, URM, and just about anyone who can would qualify for a PELL grant and/or Title IV funding. It states that “a degree is a degree” – playing to the idea that it doesn’t matter what the degree or where you get it - as long as the credential is obtained.

This was created by the 180LA Agency (<https://www.insidehighered.com/news/2016/02/18/u-phoenix-looks-rise-again-new-advertising-campaign>). This commercial has been run during daytime talk shows, late night infomercials, and the TV show *Blackish*. The video was also run on YouTube during a video about black hair weaves and on Spotify in-between Johnny Cash and Willie Nelson songs.

These targeted marketing campaigns also use the *familiar* or use familiar *imagery*. Lower income students have seen family members in scrubs; allied health programs are often used in commercials to attract URM students. As are imagery from the criminal/cop shows or typing at PC’s. These images are also used online. These familiar images cuts down on “decision fatigue” URM students experience in their day to day lives (<https://www.one.org/us/blog/how-decision-fatigue-can-exacerbate-poverty/>).

These campaigns also preach the “Higher Education Gospel” ([How For-Profit Colleges Sell “Risky Education” to the Most Vulnerable](#), or [Lower Ed: The troubling rise of for-profits colleges in the new economy](#)). Marketing continues during phone calls and during enrollment with statements like, “How are you changing your life today?” *For-profits* will call a perspective student repeatedly, every 2-3 days. A Resource Member disclosed that they signed up through an ad for doctorate programs this summer. The nonprofit schools stopped calling after 2-3 weeks; however the *for-profit* schools continued for 2-3 months and one continued for six months.

URM students are often operating under information poverty. They frequently select colleges with no information other than what they have seen on the advertisements. The *for-profits* trade on this and the prospective student’s urgency to land a job (<https://journals.sagepub.com/doi/pdf/10.1177/0038040716666607>).

Why Are For-Profits Attractive to URM students?

Three main areas that attract URM students to *for-profit* institutions: Marketing, Logistics, and Program Structure. The tactics and behaviors demonstrated in the marketing of URM students

was already covered, but there are a number of factors when considering logistics and program structures.

The physical campuses are kept to mostly under 500 students and are located on direct bus routes. For example, Norwood ITT and Dayton Kaplan locations had bus stops directly outside the front door. Additionally, the campuses are usually near at least one day care center that has an agreement with the campus for reduced rates for attending students, often within walking distance. (*Institute for Women's Policy Research* <https://iwpr.org/publications/single-mothers-overrepresented-profit-colleges/>). There are frequently licensed social workers on campus for direct referrals to needed programs and for case management.

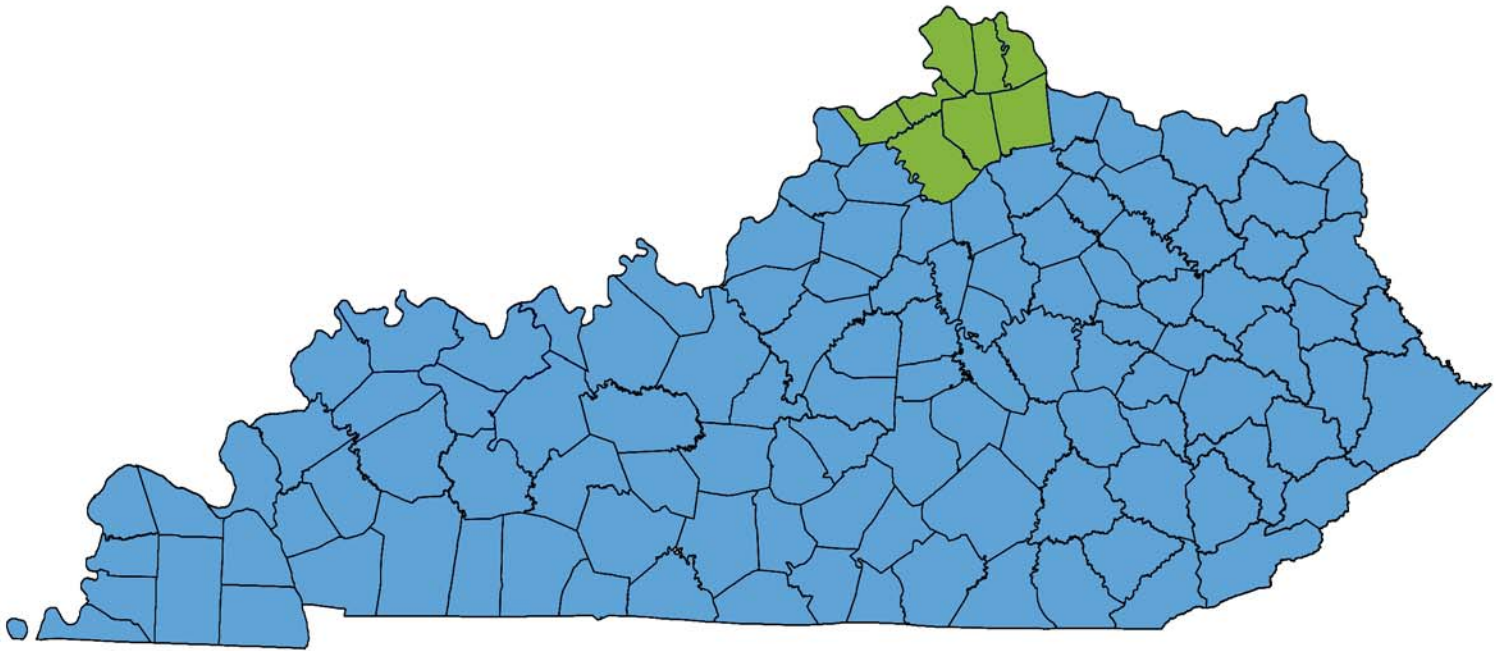
When considering the program structures, the perceived benefits can be: the school ordering their transcripts for them, no included fees, and no undecided/undeclared students. Additionally, tuition is *all-inclusive*. Books, tablets, laptops, and lab materials are assigned per the program sheet the students are handed after registration. Enrollment, FAFSA, and a visit to the bookstore is done in one day unless the student must return with tax documents. Students are called every 2-3 days with reminders until they return. Students do not fill out their own FAFSA. Their appointment with Financial Aid is generally for the purpose of filling out their FAFSA, getting their tax paperwork together, signing Pell Grant forms, and whatever else needs to be completed. Loans are explained and applied for onsite. Private loans are done over the phone. GI paperwork is kept in the FA office, usually online.

There are also differences with class scheduling. Most classes at many physical *for-profits* are offered during second and third shifts to accommodate students who work. Classes are scheduled around bus schedules. "Block Scheduling" is used. There are no electives. This cuts down on students' decision fatigue.

Most programs require an internship as part of the program and most of these internships are paid usually over minimum wage. Agreements are set and maintained with various (mostly small) businesses in the area to hire the students for a semester. Finally, all students are *required* to do a resume review, a mock interview, and attend job fairs. This work is embedded in their program curriculums.

Appendix A: NKY ADD Report

Northern Kentucky Local Workforce Area Occupational Outlook to 2024



KENTUCKY CENTER FOR
EDUCATION & WORKFORCE STATISTICS

Northern Kentucky Local Workforce Area Occupational Outlook to 2024

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September 2017

EQUAL OPPORTUNITY EMPLOYER/PROGRAM

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PREFACE

The information and projections contained in this publication are based on a broad range of labor market information and statistics that are collected and analyzed by the staff of the Labor Market Information (LMI) section.

The Occupational Employment Statistics (OES) survey of approximately 20,000 Kentucky employers provided the occupational employment data used in the study. The data obtained from the Current Employment Statistics (CES) and the Quarterly Census of Employment and Wages (QCEW) programs were used to project industries to the year 2024. Staff utilized data from all programs to create the 2024 occupational outlook publications for each of the Local Workforce Areas (LWAs) below:

West Kentucky	Lincoln Trail	Kentuckiana Works
Northern Kentucky	TENCO	EKCEP
Cumverlands	Bluegrass	Green River
South Central		

The U.S. Department of Labor (USDOL), Employment and Training Administration (ETA) provided funding for the publication and projections. The national industry and occupational projections developed by the U. S. Department of Labor, Bureau of Labor Statistics (BLS), were used in conjunction with state and regional trends to project Kentucky's industries and occupations. The Bureau of Labor Statistics and the U.S. Department of Commerce, Bureau of Economic Analysis, provided additional statistics necessary in the projection process. The Utah Department of Economic Security developed the personal computer-based model used for the projections. Special thanks to Kentucky employers who completed the questionnaires that provide the employment information necessary to complete this project.

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INTRODUCTION

Northern Kentucky Local Workforce Area

Which jobs will be in demand? Which occupations will provide the largest number of job openings? Which are likely to grow or decline? The *Northern Kentucky Local Workforce Area Occupational Outlook to 2024* offers answers and insight regarding these often-asked questions. Students, job seekers, counselors and others will find this information beneficial.

Tables listing the 25 occupations with the largest number of annual job openings and the 25 fastest-growing occupations are included. They also provide occupational employment projections, the number and percentage of expected change and the average number of annual job openings for the period 2014 to 2024.

Please note that the estimates and projections are subject to limitations that are a part of any effort to determine future conditions. Long-term job trends offer insight into the occupational growth or decline in the area. The projections are carefully prepared using accepted methods within a framework of national, state and area assumptions. However, they will be modified in future publications if long-term changes occur in the area's economic outlook or as more current information becomes available.

The estimates in this report reflect only the demand for labor from 2014 through 2024. The supply, or the number of educated or trained workers available to fill future job openings, is beyond the scope of this report.

The development and utilization of our human resources is always a priority for those concerned with employment training. It is crucial that education and training planners, business, labor, government, and job seekers have the necessary occupational information to aid them in the development of education and training programs. This publication was intended to assist in these efforts.

NOTE: Prior to 2000, the Occupational Employment Statistics (OES) codes were used to classify occupations. The 2014-2024 projections use the Standard Occupational Classification (SOC) system. Because of this change, the titles and content of major occupational groups and many detailed occupations are substantially different from those used before 2000. Several major groups have been renamed, combined or reorganized. Some individual occupations have been renamed, reclassified, or are no longer listed. Many newer occupations may be listed for the first time. Because of these changes, the 2014-2024 projections are not comparable to those completed before 2000. Information on the SOC system is available on the U.S. Bureau of Labor Statistics SOC Home Page <http://www.bls.gov/soc/home.htm>.

Northern Kentucky Local Workforce Area
HIGHLIGHTS
2014-2024

- Employment is projected to grow from 194,431 to 219,430 a gain of 12.86 percent.
- Total annual job openings are expected to be about 7,309
- Growth in employment will create about 2,579 job openings annually.
- Approximately 4,370 annual job openings will result from separations from the labor force due to retirement or those who transfer to other jobs.
- Thirty-five percent of job openings will result from growth; the remaining 65 percent will result from separations from the labor force.
- The greatest number of annual job openings will be in Office and Administrative Support Occupations (945) followed Food Preparation and Serving Related Occupations (863), Transportation and Material Moving Occupations (812).
- The two occupations with the largest projected number of annual job openings Combined Food Preparation and Serving Workers, Including Fast Food (159) and Team Assemblers (155).
- The highest growth rates among occupational groups are likely to be Healthcare Support Occupations (36.45%) followed by Healthcare Practitioners and Technical Occupations (26.5%) and Construction and Extraction Occupations (22.38%).

USER'S GUIDE TO OCCUPATIONAL OUTLOOK STATISTICS

When looking at an occupation, what key outlook data should you review?	Total average annual job openings, and employment change expressed as a percentage. The total number of job openings estimates the likely annual demand for workers in each occupation. The percentage of employment change shows how much each occupation is likely to grow or decline.
What creates job openings?	Employment growth (new jobs), and employment separations (job vacancies created by persons separating from an occupation).
What causes employment change?	<i>Industrial growth or decline</i> has the greatest influence. This occurs when the demand for goods and services rises, thus the demand for workers increases. <i>Technological change</i> may raise the demand for some skills while eliminating the demand for others. Self-service, out-sourcing, or 24 hour operations can also affect employment change.
What about employment separations?	Employment separations are still important when evaluating the potential outlook for an occupation. Job openings are created when employees separate from occupations because of retirements, promotions, career changes, death, etc. The number of separations can exceed new jobs.
Do workers tend to leave one occupation more than other occupations?	Every occupation has a different rate of employment separation. Occupations requiring more education and training and/or having a high percentage of full time workers tend to have low separation rates. Those requiring little education and/or training tend to have higher separation rates.
What factors affect the number of job openings for an occupation?	The number of workers who are currently employed, the number of job vacancies created by worker separation, and the rate of change, i.e., how fast the occupation is growing or declining.
Which factor is more important?	The size of employment and separation rate is more important than rate of change.
What is the best way to compare one occupation with another?	Look at the total average annual job openings, not just openings resulting from growth. A large number of openings indicate it should be relatively easy to find a job in that occupation. Also, consider the rate of employment change. A high percentage increase denotes there may be excellent chances for advancement and for earnings increases because demand is likely to remain strong for some time.

**Top 25 Fastest Growing Northern Kentucky Local Workforce Area Occupations
Most Annual Openings**

Rank	Code	Occupational Title	Employment		Change		Annual Openings
			2014 Estimated	2024 Projected	Number	Percent	
1	35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	6,997	7,708	711	10.16	297
2	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	5,880	6,710	830	14.12	258
3	41-2031	Retail Salespersons	5,327	6,030	703	13.20	255
4	41-2011	Cashiers	4,705	5,025	320	6.80	232
5	29-1141	Registered Nurses	3,426	4,483	1,057	30.85	187
6	35-3031	Waiters and Waitresses	3,757	3,801	44	1.17	185
7	43-5081	Stock Clerks and Order Fillers	3,711	4,203	492	13.26	167
8	31-1014	Nursing Assistants	1,856	2,712	856	46.12	128
9	43-4051	Customer Service Representatives	3,059	3,503	444	14.51	119
10	11-1021	General and Operations Managers	2,721	3,065	344	12.64	103
11	53-3032	Heavy and Tractor-Trailer Truck Drivers	3,073	3,573	500	16.27	102
12	53-7051	Industrial Truck and Tractor Operators	2,239	2,590	351	15.68	91
13	53-7064	Packers and Packers, Hand	2,193	2,491	298	13.59	88
14	39-9011	Childcare Workers	2,164	2,379	215	9.94	86
15	51-2092	Team Assemblers	2,700	2,957	257	9.52	84
16	41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical	2,184	2,531	347	15.89	80
17	37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	2,397	2,668	271	11.31	75
18	43-9061	Office Clerks, General	2,221	2,444	223	10.04	70
19	35-2014	Cooks, Restaurant	1,790	2,014	224	12.51	69
20	49-9071	Maintenance and Repair Workers, General	1,832	2,033	201	10.97	68
21	13-2011	Accountants and Auditors	1,524	1,774	250	16.40	66
22	35-1012	First-Line Supervisors of Food Preparation and Serving Workers	1,654	1,810	156	9.43	65
23	51-9111	Packaging and Filling Machine Operators and Tenders	1,358	1,532	174	12.81	65
24	41-1011	First-Line Supervisors of Retail Sales Workers	1,932	2,109	177	9.16	61
25	43-1011	First-Line Supervisors of Office and Administrative Support Workers	2,130	2,423	293	13.76	61

Top 25 Fastest Growing Northern Kentucky Local Workforce Area Occupations
Highest Percent Change

Rank	Code	Occupational Title	Employment		Change		Annual Openings
			2014 Estimated	2024 Projected	Number	Percent	
1	47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble	17	25	8	47.06	1
2	31-2021	Physical Therapist Assistants	86	126	40	46.51	6
3	31-1014	Nursing Assistants	1,856	2,712	856	46.12	128
4	47-2021	Brickmasons and Blockmasons	49	70	21	42.86	2
5	29-1071	Physician Assistants	32	45	13	40.62	2
6	29-1122	Occupational Therapists	158	221	63	39.87	9
7	29-1123	Physical Therapists	248	341	93	37.50	16
8	29-2061	Licensed Practical and Licensed Vocational Nurses	920	1,262	342	37.17	60
9	21-1022	Healthcare Social Workers	137	187	50	36.50	8
10	49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	322	437	115	35.71	17
11	47-2051	Cement Masons and Concrete Finishers	223	299	76	34.08	11
12	25-1072	Nursing Instructors and Teachers, Postsecondary	106	142	36	33.96	6
13	19-3031	Clinical, Counseling, and School Psychologists	187	250	63	33.69	10
14	31-2022	Physical Therapist Aides	18	24	6	33.33	1
15	47-2181	Roofers	91	121	30	32.97	4
16	21-1014	Mental Health Counselors	239	316	77	32.22	13
17	11-9111	Medical and Health Services Managers	309	408	99	32.04	18
18	39-9041	Residential Advisors	345	453	108	31.30	21
19	21-2011	Clergy	77	101	24	31.17	4
20	29-1141	Registered Nurses	3,426	4,483	1,057	30.85	187
21	29-1127	Speech-Language Pathologists	168	219	51	30.36	9
22	29-1041	Optometrists	66	86	20	30.30	4
23	11-9151	Social and Community Service Managers	163	212	49	30.06	9
24	13-2052	Personal Financial Advisors	376	486	110	29.26	20
25	47-2111	Electricians	574	741	167	29.09	26

Explanation of Data Elements in the Occupational Outlook Table

Occupational Employment Outlook

Occupational		Employment 2014 2024		Job Growth 2014 2024		Average Annual Job Openings, 2014-2024			Average Wage	Education/ Training Required
Code	Title	Estimated	Projected	Number	Percent	Growth	Separations	Total	2016	
Occupational Codes & Titles used in this report are based on the Standard Occupational Coding (SOC) structure.		Estimated 2014 employment is based on the Occupational Employment Statistics (OES) Survey of employers. Projected 2024 levels of occupational employment are based on projections of industry employment and projections of occupational change factors between 2014 and 2024. NOTE: The occupational employment estimates for 2014 to 2024 include all classes of workers such as public and private, wage and salaried workers; agricultural workers; private household workers; and self-employed.		Number The total number of jobs in an occupation gained or lost over the 2014 to 2024 period. Percent Percent change in employment in an occupation over the 10 year period. NOTE: In Kentucky, the average growth for all occupations is projected to be 15.2 percent from 2014-2024. The growth of an occupation is classified as one of the following based on its projected percent change in employment: 1) Declining (< 0%) 2) Stable (0% - 6.99%) 3) Growing (7.0% - 12.99%) 4) Fast Growing (13.0% - 17.99%) 5) Very Fast Growing (> 18.0%)		Growth Provides estimates of the average number of job openings expected to occur each year between 2014 and 2024. Separations Provides estimates of the average number of job openings expected to occur each year in an occupation from workers separating or leaving for reasons such as retirement, promotion, or simply transferring among occupations. These separations would require replacement workers. Total The sum of openings due to growth and openings due to separations for an occupation. NOTE: If employment growth is negative, the total number of job openings will equal the number of separations.			Average Wage in this report always refers to the 2015 mean hourly wage. NOTE: Average hourly wages for each of the teacher occupations in this report were calculated from the average annual wage by assuming 9.5 working months per year at 40 hours per week.	Education and/or Training Levels Required are developed by the Bureau of Labor Statistics (BLS). NOTE: The various categories are described in detail on page 12 of this report.

Occupational Code Breakdown

Occupational Code	SOC
Management Occupations	11-0000
Top Executives	11-1000
Advert., Market., Promotions, Pub. Relations, & Sales Mgrs.	11-2000
Operations Specialties Managers	11-3000
Other Management Occupations	11-9000
Business and Financial Operations Occupations	13-0000
Business Operations Specialists	13-1000
Financial Specialists	13-2000
Computer and Mathematical Occupations	15-0000
Computer Occupations	15-1100
Mathematical Science Occupations	15-2000
Architecture and Engineering Occupations	17-0000
Architects, Surveyors, and Cartographers	17-1000
Engineers	17-2000
Drafters, Engineering Technicians, and Mapping Technicians	17-3000
Life, Physical, and Social Science Occupations	19-0000
Life Scientists	19-1000
Physical Scientists	19-2000
Social Scientists and Related Workers	19-3000
Life, Physical, and Social Science Technicians	19-4000
Community and Social Service Occupations	21-0000
Counselors, Social Wkrs, & Other Comm. & Social Service Spec.	21-1000
Religious Workers	21-2000
Legal Occupations	23-0000
Lawyers, Judges, and Related Workers	23-1000
Legal Support Workers	23-2000
Education, Training, and Library Occupations	25-0000
Postsecondary Teachers	25-1000
Preschool, Primary, Secondary, and Special Education School Teachers	25-2000
Other Teachers and Instructors	25-3000

Occupational Code Breakdown

Occupational Code	SOC
Librarians, Curators, and Archivists	25-4000
Other Education, Training, and Library Occupations	25-9000
Arts, Design, Entertainment, Sports, and Media Occupations	27-0000
Art and Design Workers	27-1000
Entertainers and Performers, Sports and Related Workers	27-2000
Media and Communication Workers	27-3000
Media and Communication Equipment Workers	27-4000
Healthcare Practitioners and Technical Occupations	29-0000
Health Diagnosing and Treating Practitioners	29-1000
Health Technologists and Technicians	29-2000
Other Healthcare Practitioners and Technical Occupations	29-9000
Healthcare Support Occupations	31-0000
Nursing, Psychiatric, and Home Health Aides	31-1000
Occupational Therapy & Physical Therapist Assistants & Aides	31-2000
Other Healthcare Support Occupations	31-9000
Protective Service Occupations	33-0000
Supervisors of Protective Service Workers	33-1000
Fire Fighting and Prevention Workers	33-2000
Law Enforcement Workers	33-3000
Other Protective Service Workers	33-9000
Food Preparation and Serving Related Occupations	35-0000
Supervisors of Food Preparation and Serving Workers	35-1000
Cooks and Food Preparation Workers	35-2000
Food and Beverage Serving Workers	35-3000
Other Food Preparation and Serving Related Workers	35-9000
Building and Grounds Cleaning and Maintenance Occupations	37-0000
Supervisors of Building & Grounds Cleaning and Maintenance Workers	37-1000
Building Cleaning and Pest Control Workers	37-2000
Grounds Maintenance Workers	37-3000
Personal Care and Service Occupations	39-0000

Occupational Code Breakdown

Occupational Code	SOC
Supervisors of Personal Care and Service Workers	39-1000
Animal Care and Service Workers	39-2000
Entertainment Attendants and Related Workers	39-3000
Funeral Service Workers	39-4000
Personal Appearance Workers	39-5000
Baggage Porters, Bellhops, and Concierges	39-6000
Tour and Travel Guides	39-7000
Other Personal Care and Service Workers	39-9000
Sales and Related Occupations	41-0000
Supervisors of Sales Workers	41-1000
Retail Sales Workers	41-2000
Sales Representatives, Services	41-3000
Sales Representatives, Wholesale and Manufacturing	41-4000
Other Sales and Related Workers	41-9000
Office and Administrative Support Occupations	43-0000
Supervisors of Office and Administrative Support Workers	43-1000
Financial Clerks	43-3000
Information and Record Clerks	43-4000
Material Recording, Scheduling, Dispatching, and Distributing Workers	43-5000
Secretaries and Administrative Assistants	43-6000
Other Office and Administrative Support Workers	43-9000
Farming, Fishing, and Forestry Occupations	45-0000
Supervisors of Farming, Fishing, and Forestry Workers	45-1000
Agricultural Workers	45-2000
Forest, Conservation, and Logging Workers	45-4000
Construction and Extraction Occupations	47-0000
Supervisors of Construction and Extraction Workers	47-1000
Construction Trades Workers	47-2000
Helpers, Construction Trades	47-3000
Other Construction and Related Workers	47-4000

Occupational Code Breakdown

Occupational Code	SOC
Extraction Workers	47-5000
Installation, Maintenance, and Repair Occupations	49-0000
Electrical & Electronic Equipment Mechanics, Installers, and Repairers	49-2000
Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	49-3000
Other Installation, Maintenance, and Repair Occupations	49-9000
Production Occupations	51-0000
Supervisors of Production Workers	51-1000
Assemblers and Fabricators	51-2000
Food Processing Workers	51-3000
Metal Workers and Plastic Workers	51-4000
Printing Workers	51-5100
Textile, Apparel, and Furnishings Workers	51-6000
Woodworkers	51-7000
Plant and System Operators	51-8000
Other Production Occupations	51-9000
Transportation and Material Moving Occupations	53-0000
Supervisors of Transportation and Material Moving Workers	53-1000
Air Transportation Workers	53-2000
Motor Vehicle Operators	53-3000
Rail Transportation Workers	53-4000
Water Transportation Workers	53-5000
Other Transportation Workers	53-6000
Material Moving Workers	53-7000

Educational/Training Classifications

The Bureau of Labor Statistics (BLS) provides individual assignments to each occupation for three dimensions: education; work experience in a related field; and on-the-job training. The objective of this system is to present a complete picture of the education and training needed for entry into a given occupation and to become competent at performing the occupation.

Entry Level Education: Represents the typical education level needed to enter an occupation. There are eight possible assignments for this category.

- 1) **Doctoral or Professional Degree:** Completion of a doctoral degree (Ph.D.) usually requires at least 3 years of full-time academic work beyond a bachelor's degree. Completion of a professional degree usually requires at least 3 years of full-time academic study beyond a bachelor's degree. Examples of occupations for which a professional degree is the typical form of entry-level education include lawyers, physicians and surgeons, and dentists.
- 2) **Master's Degree:** Completion of this degree usually requires 1 or 2 years of full-time academic study beyond a bachelor's degree. Examples of occupations in this category include statisticians, physician assistants, and educational, vocational, and school counselors.
- 3) **Bachelor's Degree:** Completion of this degree generally requires at least 4 years, but not more than 5 years, of full-time academic study beyond high school. Examples of occupations in this category include budget analysts, dietitians, and civil engineers.
- 4) **Associate's Degree:** Completion of this degree usually requires at least 2 years but not more than 4 years of full-time academic study beyond high school. Examples of occupations in this category include mechanical drafters, respiratory therapists, and dental hygienists.
- 5) **Postsecondary Non-Degree Award:** These programs lead to a certificate or other award, but not a degree. The certificate is awarded by the educational institution and is the result of completing formal postsecondary schooling. Certification, which is issued by a professional organization or certifying body, is not included here. Some postsecondary non-degree award programs last only a few weeks, while others may last 1 to 2 years. Examples of occupations in this category include nursing aides, emergency medical technicians (EMTs) and paramedics, and hairstylists.
- 6) **Some College, No Degree:** This category signifies the achievement of a high school diploma or equivalent plus the completion of one or more postsecondary courses that did not result in a degree or award. Examples of occupations in this category are actors and computer support specialists.
- 7) **High School Diploma or Equivalent:** This category signifies the completion of high school or an equivalent program resulting in the award of a high school diploma or an equivalent, such as the General Educational Development (GED) credential. Examples of occupations in this category include social and human service assistants and pharmacy technicians.
- 8) **Less than High School:** This category signifies the completion of any level of primary or secondary education that did not result in the award of a high school diploma or equivalent. Examples of occupations in this category include janitors and cleaners, cashiers, and carpet installers.

Work Experience in a Related Occupation: For some occupations, work experience in a related occupation may be a typical method of entry. The majority of occupations in this category are first-line supervisors or managers of service, sales, and production occupations. Although work experience in a related occupation is beneficial for all occupations, this metric is meant to capture work experience that is commonly considered necessary by employers, or is a commonly accepted substitute for other, more formal types of training or education. Occupations are assigned one of the following four categories that deal with length of time spent gaining related work experience:

- 1) **More than 5 years:** This is assigned to occupations if more than 5 years of work experience in a related occupation is typically needed for entry. Examples include construction managers and computer and information systems managers.
- 2) **1 to 5 years:** To enter occupations in this category, workers typically need 1-5 years of work experience in a related occupation. Examples include marketing managers and database administrators.

- 3) **Less than 1 year:** Examples of occupations that typically need less than 1 year of work experience in a related occupation include restaurant cooks and industrial truck and tractor operators.
- 4) **None:** No work experience in a related occupation is typically needed. Examples are audiologists and actuaries.

Typical On-The-Job Training Needed to Attain Competency in the Occupation: This category encompasses any additional training or preparation that is typically needed, once employed in an occupation, to attain competency in the skills needed in that occupation. Training is occupation-specific rather than job-specific; skills learned can be transferred to another job in the same occupation. Occupations are assigned one of the following six training categories:

- 1) **Internship/Residency:** An internship or residency is training that involves preparation in a field such as medicine or teaching, generally under supervision in a professional setting, such as a hospital or classroom. This type of training may occur before one is employed. Completion of an internship or residency program is commonly required for state licensure or certification in fields including medicine, counseling, architecture, and teaching. This category does not include internships that are suggested for advancement. Examples of occupations in the internship/residency category include physicians and surgeons and marriage and family therapists.
- 2) **Apprenticeship:** An apprenticeship is a formal relationship between a worker and sponsor that consists of a combination of on-the-job training and related occupation-specific technical instruction in which the worker learns the practical and theoretical aspects of an occupation. Apprenticeship programs are sponsored by individual employers, joint employer-and-labor groups, and employer associations. The typical apprenticeship program provides at least 144 hours of occupation-specific technical instruction and 2,000 hours of on-the-job training per year over a 3-to-5 year period. Examples of occupations in the apprenticeship category include electricians and structural iron and steel workers.
- 3) **Long-Term On-The-Job Training:** More than 12 months of on-the-job training or, alternatively, combined work experience and formal classroom instruction, are needed for workers to develop the skills to attain competency. Training is occupation specific rather than job specific; therefore, skills learned can be transferred to another job in the same occupation. This on-the-job training category also includes employer-sponsored training programs. Such programs include those offered by fire and police academies and schools for air traffic controllers and flight attendants. In other occupations—nuclear power reactor operators, for example—trainees take formal courses, often provided at the jobsite, to prepare for the required licensing exams. This category excludes apprenticeships. Examples of occupations in the long-term on-the-job training category include opticians and automotive service technicians and mechanics.
- 4) **Moderate-Term On-The-Job Training:** Skills needed for a worker to attain competency in an occupation that can be acquired during 1 to 12 months of combined on-the-job experience and informal training. Training is occupation-specific rather than job-specific; therefore, skills learned can be transferred to another job in the same occupation. This on-the-job training category also includes employer-sponsored training programs. Examples of occupations in the moderate-term category include school bus drivers and advertising sales agents.
- 5) **Short-Term On-The-Job Training:** Skills needed for a worker to attain competency in an occupation that can be acquired during 1 month or less of on-the-job experience and informal training. Training is occupation-specific rather than job specific; therefore, skills learned can be transferred to another job in the same occupation. This on-the-job training category also includes employer sponsored training programs. Examples of occupations in the short-term category include retail salespersons and maids and housekeeping cleaners.
- 6) **None:** There is no additional occupation-specific training or preparation typically required to attain competency in the occupation. Examples of occupations that do not require occupation-specific on-the-job training include geographers and pharmacists.

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
00-0000	Total, All Occupations	194,431	219,430	24,999	12.86	2,579	4,730	7,309	N/A	\$21.32
11-0000	Management Occupations	10,787	12,160	1373	12.73	138	250	388	N/A	\$47.76
11-1000	Top Executives	3,167	3,538	371	11.71	37	76	113	N/A	N/A
11-1011	Chief Executives	*	*	*	*	*	*	*	3	\$83.33
11-1021	General and Operations Managers	2,721	3,065	344	12.64	34	69	103	3	\$47.56
11-2000	Advertising, Marketing, Promotions, Public Relations, and Sales Managers	712	815	103	14.47	10	18	28	N/A	N/A
11-2011	Advertising and Promotions Managers	*	*	*	*	*	*	*	3	\$49.92
11-2021	Marketing Managers	176	207	31	17.61	3	4	7	3	\$47.55
11-2022	Sales Managers	456	516	60	13.16	6	11	17	3	\$59.31
11-2031	Public Relations and Fundraising Managers	*	*	*	*	*	*	*	3	\$40.58
11-3000	Operations Specialties Managers	2,759	3,131	372	13.48	37	63	100	N/A	N/A
11-3011	Administrative Services Managers	392	443	51	13.01	5	7	12	3	\$41.23
11-3021	Computer and Information Systems Managers	265	326	61	23.02	6	3	9	3	\$53.51
11-3031	Financial Managers	742	848	106	14.29	11	18	29	3	\$55.10
11-3051	Industrial Production Managers	487	526	39	8.01	4	14	18	3	\$44.91
11-3061	Purchasing Managers	221	250	29	13.12	3	5	8	3	\$52.06
11-3071	Transportation, Storage, and Distribution Managers	374	420	46	12.3	5	8	13	7	\$44.29
11-3111	Compensation and Benefits Managers	19	21	2	10.53	0	1	1	3	\$43.66
11-3121	Human Resources Managers	201	234	33	16.42	3	6	9	3	\$55.56

*Employment under 10 and/or unreliable data suppressed, N/A Not Available, Education and Training Codes Page 12

Source: Kentucky Center for Education and Workforce Statistics

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
11-3131	Training and Development Managers	58	63	5	8.62	0	2	2	3	\$55.53
11-9000	Other Management Occupations	4,149	4,676	527	12.7	53	92	145	N/A	N/A
11-9013	Farmers, Ranchers, and Other Agricultural Managers	61	70	9	14.75	1	1	2	7	N/A
11-9021	Construction Managers	479	518	39	8.14	4	7	11	3	\$42.36
11-9031	Education Administrators, Preschool and Childcare Center/Program	*	*	*	*	*	*	*	3	\$21.92
11-9032	Education Administrators, Elementary and Secondary School	312	369	57	18.27	6	9	15	2	N/A
11-9033	Education Administrators, Postsecondary	100	122	22	22	2	3	5	2	\$45.42
11-9039	Education Administrators, All Other	19	21	2	10.53	0	1	1	3	\$25.04
11-9041	Architectural and Engineering Managers	345	384	39	11.3	4	11	15	3	\$52.96
11-9051	Food Service Managers	547	578	31	5.67	3	11	14	7	\$24.62
11-9061	Funeral Service Managers	37	39	2	5.41	0	1	1	4	\$25.12
11-9071	Gaming Managers	*	*	*	*	*	*	*	7	N/A
11-9081	Lodging Managers	62	75	13	20.97	1	1	2	7	\$29.99
11-9111	Medical and Health Services Managers	309	408	99	32.04	10	8	18	3	\$48.50
11-9121	Natural Sciences Managers	28	31	3	10.71	0	1	1	3	\$53.62
11-9131	Postmasters and Mail Superintendents	21	19	-2	-9.52	0	0	0	7	\$36.33
11-9141	Property, Real Estate, and Community Association Managers	457	505	48	10.5	5	8	13	7	\$29.59
11-9151	Social and Community Service Managers	163	212	49	30.06	5	4	9	3	\$28.85
11-9161	Emergency Management Directors	15	16	1	6.67	0	0	0	3	\$19.20

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Source: Kentucky Center for Education and Workforce Statistics

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
11-9199	Managers, All Other	1,147	1,258	111	9.68	11	25	36	3	\$45.83
13-0000	Business and Financial Operations Occupations	9,161	10,295	1134	12.38	117	221	338	N/A	\$32.26
13-1000	Business Operations Specialists	4,721	5,358	637	13.49	64	92	156	N/A	N/A
13-1021	Buyers and Purchasing Agents, Farm Products	*	*	*	*	*	*	*	3	N/A
13-1022	Wholesale and Retail Buyers, Except Farm Products	*	*	*	*	*	*	*	3	\$23.47
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	655	732	77	11.76	8	18	26	3	\$34.02
13-1031	Claims Adjusters, Examiners, and Investigators	34	37	3	8.82	0	1	1	7	\$34.49
13-1032	Insurance Appraisers, Auto Damage	*	*	*	*	*	*	*	5	N/A
13-1041	Compliance Officers	286	318	32	11.19	3	4	7	3	\$32.96
13-1051	Cost Estimators	192	228	36	18.75	4	6	10	3	\$29.74
13-1071	Human Resources Specialists	745	824	79	10.6	8	18	26	3	\$29.80
13-1075	Labor Relations Specialists	154	156	2	1.3	0	4	4	3	\$34.28
13-1081	Logisticians	507	558	51	10.06	5	7	12	3	\$35.86
13-1111	Management Analysts	*	*	*	*	*	*	*	3	\$45.78
13-1121	Meeting, Convention, and Event Planners	121	137	16	13.22	2	1	3	3	\$18.61
13-1131	Fundraisers	38	43	5	13.16	0	0	0	3	\$24.12
13-1141	Compensation, Benefits, and Job Analysis Specialists	63	70	7	11.11	1	2	3	3	\$31.87
13-1151	Training and Development Specialists	360	414	54	15	5	9	14	3	\$32.38
13-1161	Market Research Analysts and Marketing Specialists	459	579	120	26.14	12	6	18	3	\$27.84

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Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
13-1199	Business Operations Specialists, All Other	534	587	53	9.93	5	6	11	3	\$33.38
13-2000	Financial Specialists	4,440	4,937	497	11.19	54	129	183	N/A	N/A
13-2011	Accountants and Auditors	1,524	1,774	250	16.4	25	41	66	3	\$35.23
13-2021	Appraisers and Assessors of Real Estate	*	*	*	*	*	*	*	3	\$35.18
13-2031	Budget Analysts	*	*	*	*	*	*	*	3	\$34.69
13-2041	Credit Analysts	40	49	9	22.5	1	2	3	3	\$29.01
13-2051	Financial Analysts	262	303	41	15.65	4	5	9	3	\$37.55
13-2052	Personal Financial Advisors	376	486	110	29.26	11	9	20	3	\$48.44
13-2053	Insurance Underwriters	*	*	*	*	*	*	*	3	N/A
13-2061	Financial Examiners	30	38	8	26.67	1	1	2	3	\$23.56
13-2071	Credit Counselors	22	27	5	22.73	0	0	0	3	\$21.37
13-2072	Loan Officers	322	396	74	22.98	7	5	12	3	\$38.49
13-2081	Tax Examiners and Collectors, and Revenue Agents	1,402	1,363	-39	-2.78	0	58	58	3	\$24.05
13-2082	Tax Preparers	207	213	6	2.9	1	5	6	7	\$16.24
13-2099	Financial Specialists, All Other	212	240	28	13.21	3	2	5	3	\$31.04
15-0000	Computer and Mathematical Occupations	3,444	4,118	674	19.57	68	48	116	N/A	\$35.12
15-1100	Computer Occupations	3,331	3,962	631	18.94	63	46	109	N/A	N/A
15-1111	Computer and Information Research Scientists	*	*	*	*	*	*	*	1	N/A
15-1121	Computer Systems Analysts	433	540	107	24.71	11	6	17	3	\$38.44

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Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
15-1122	Information Security Analysts	62	69	7	11.29	1	1	2	3	\$34.40
15-1131	Computer Programmers	*	*	*	*	*	*	*	3	\$35.94
15-1132	Software Developers, Applications	345	409	64	18.55	6	5	11	3	\$36.90
15-1133	Software Developers, Systems Software	225	276	51	22.67	5	3	8	3	\$41.64
15-1134	Web Developers	*	*	*	*	*	*	*	4	\$23.25
15-1141	Database Administrators	*	*	*	*	*	*	*	3	\$39.93
15-1142	Network and Computer Systems Administrators	530	600	70	13.21	7	7	14	3	\$37.06
15-1143	Computer Network Architects	138	163	25	18.12	2	2	4	3	\$36.82
15-1151	Computer User Support Specialists	810	990	180	22.22	18	10	28	6	\$28.75
15-1152	Computer Network Support Specialists	214	250	36	16.82	4	3	7	4	\$31.12
15-1199	Computer Occupations, All Other	198	219	21	10.61	2	2	4	3	\$38.25
15-2000	Mathematical Science Occupations	113	156	43	38.05	4	2	6	N/A	N/A
15-2021	Mathematicians	*	*	*	*	*	*	*	2	N/A
15-2031	Operations Research Analysts	*	*	*	*	*	*	*	3	\$37.87
15-2041	Statisticians	*	*	*	*	*	*	*	2	N/A
17-0000	Architecture and Engineering Occupations	3,129	3,443	314	10.04	32	80	112	N/A	\$36.39
17-1000	Architects, Surveyors, and Cartographers	144	155	11	7.64	1	3	4	N/A	N/A
17-1011	Architects, Except Landscape and Naval	92	100	8	8.7	1	2	3	3	\$33.35
17-1012	Landscape Architects	*	*	*	*	*	*	*	3	\$26.98

*Employment under 10 and/or unreliable data suppressed, N/A Not Available, Education and Training Codes Page 12

Source: Kentucky Center for Education and Workforce Statistics

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
17-1021	Cartographers and Photogrammetrists	*	*	*	*	*	*	*	3	N/A
17-1022	Surveyors	22	22	0	0	0	1	1	3	\$26.67
17-2000	Engineers	2,143	2,390	247	11.53	25	61	86	N/A	N/A
17-2021	Agricultural Engineers	*	*	*	*	*	*	*	3	N/A
17-2031	Biomedical Engineers	*	*	*	*	*	*	*	3	N/A
17-2041	Chemical Engineers	44	47	3	6.82	0	1	1	3	\$47.88
17-2051	Civil Engineers	177	196	19	10.73	2	5	7	3	\$36.33
17-2061	Computer Hardware Engineers	*	*	*	*	*	*	*	3	\$25.82
17-2071	Electrical Engineers	195	211	16	8.21	2	4	6	3	\$37.93
17-2072	Electronics Engineers, Except Computer	*	*	*	*	*	*	*	3	\$52.87
17-2081	Environmental Engineers	*	*	*	*	*	*	*	3	\$51.33
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	*	*	*	*	*	*	*	3	N/A
17-2112	Industrial Engineers	1,127	1,260	133	11.8	13	33	46	3	\$40.47
17-2131	Materials Engineers	*	*	*	*	*	*	*	3	\$41.98
17-2141	Mechanical Engineers	340	378	38	11.18	4	11	15	3	\$37.39
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers	*	*	*	*	*	*	*	3	N/A
17-2199	Engineers, All Other	103	114	11	10.68	1	2	3	3	\$34.92
17-3000	Drafters, Engineering Technicians, and Mapping Technicians	842	898	56	6.65	6	17	23	N/A	N/A
17-3011	Architectural and Civil Drafters	126	125	-1	-0.79	0	2	2	4	\$25.22

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Source: Kentucky Center for Education and Workforce Statistics

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
17-3012	Electrical and Electronics Drafters	*	*	*	*	*	*	*	4	\$27.49
17-3013	Mechanical Drafters	67	68	1	1.49	0	1	1	4	\$25.13
17-3019	Drafters, All Other	*	*	*	*	*	*	*	4	N/A
17-3022	Civil Engineering Technicians	81	86	5	6.17	0	2	2	4	\$22.64
17-3023	Electrical and Electronics Engineering Technicians	28	31	3	10.71	0	1	1	4	\$35.06
17-3024	Electro-Mechanical Technicians	*	*	*	*	*	*	*	4	N/A
17-3025	Environmental Engineering Technicians	*	*	*	*	*	*	*	4	N/A
17-3026	Industrial Engineering Technicians	290	320	30	10.34	3	7	10	4	\$35.57
17-3027	Mechanical Engineering Technicians	44	47	3	6.82	0	1	1	4	\$28.11
17-3029	Engineering Technicians, Except Drafters, All Other	*	*	*	*	*	*	*	4	\$23.73
17-3031	Surveying and Mapping Technicians	*	*	*	*	*	*	*	7	\$18.75
19-0000	Life, Physical, and Social Science Occupations	1,208	1,375	167	13.82	17	30	47	N/A	\$30.66
19-1000	Life Scientists	272	308	36	13.24	4	8	12	N/A	N/A
19-1012	Food Scientists and Technologists	*	*	*	*	*	*	*	3	N/A
19-1013	Soil and Plant Scientists	*	*	*	*	*	*	*	3	N/A
19-1021	Biochemists and Biophysicists	*	*	*	*	*	*	*	1	\$35.29
19-1023	Zoologists and Wildlife Biologists	*	*	*	*	*	*	*	3	\$32.23
19-1029	Biological Scientists, All Other	17	19	2	11.76	0	0	0	3	\$32.78
19-1031	Conservation Scientists	*	*	*	*	*	*	*	3	N/A

*Employment under 10 and/or unreliable data suppressed, N/A Not Available, Education and Training Codes Page 12

Source: Kentucky Center for Education and Workforce Statistics

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
19-1032	Foresters	*	*	*	*	*	*	*	3	N/A
19-1041	Epidemiologists	*	*	*	*	*	*	*	2	N/A
19-1042	Medical Scientists, Except Epidemiologists	17	19	2	11.76	0	0	0	1	\$36.26
19-1099	Life Scientists, All Other	*	*	*	*	*	*	*	3	N/A
19-2000	Physical Scientists	424	459	35	8.25	4	9	13	N/A	N/A
19-2011	Astronomers	*	*	*	*	*	*	*	1	N/A
19-2012	Physicists	*	*	*	*	*	*	*	1	N/A
19-2031	Chemists	*	*	*	*	*	*	*	3	\$31.68
19-2032	Materials Scientists	*	*	*	*	*	*	*	3	N/A
19-2041	Environmental Scientists and Specialists, Including Health	41	46	5	12.2	0	1	1	3	\$26.42
19-2042	Geoscientists, Except Hydrologists and Geographers	*	*	*	*	*	*	*	3	N/A
19-2099	Physical Scientists, All Other	*	*	*	*	*	*	*	3	N/A
19-3000	Social Scientists and Related Workers	289	364	75	25.95	8	6	14	N/A	N/A
19-3011	Economists	*	*	*	*	*	*	*	2	N/A
19-3022	Survey Researchers	*	*	*	*	*	*	*	2	N/A
19-3031	Clinical, Counseling, and School Psychologists	187	250	63	33.69	6	4	10	1	\$30.98
19-3039	Psychologists, All Other	26	30	4	15.38	0	1	1	2	N/A
19-3051	Urban and Regional Planners	16	17	1	6.25	0	0	0	2	\$30.47
19-3091	Anthropologists and Archeologists	*	*	*	*	*	*	*	2	N/A

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Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
19-3093	Historians	*	*	*	*	*	*	*	2	N/A
19-3099	Social Scientists and Related Workers, All Other	*	*	*	*	*	*	*	3	N/A
19-4000	Life, Physical, and Social Science Technicians	223	244	21	9.42	2	8	10	N/A	N/A
19-4011	Agricultural and Food Science Technicians	15	16	1	6.67	0	0	0	4	N/A
19-4021	Biological Technicians	35	38	3	8.57	0	1	1	3	\$16.76
19-4031	Chemical Technicians	103	115	12	11.65	1	3	4	4	\$22.69
19-4041	Geological and Petroleum Technicians	*	*	*	*	*	*	*	4	N/A
19-4061	Social Science Research Assistants	*	*	*	*	*	*	*	3	N/A
19-4091	Environmental Science and Protection Technicians, Including Health	39	43	4	10.26	0	2	2	4	\$23.08
19-4092	Forensic Science Technicians	*	*	*	*	*	*	*	3	N/A
19-4093	Forest and Conservation Technicians	*	*	*	*	*	*	*	4	N/A
19-4099	Life, Physical, and Social Science Technicians, All Other	16	18	2	12.5	0	1	1	4	\$22.37
21-0000	Community and Social Service Occupations	2,041	2,450	409	20.04	41	45	86	N/A	\$21.74
21-1000	Counselors, Social Workers, and Other Community and Social Service Specialists	1,964	2,349	385	19.6	38	44	82	N/A	N/A
21-1011	Substance Abuse and Behavioral Disorder Counselors	*	*	*	*	*	*	*	3	\$20.97
21-1012	Educational, Guidance, School, and Vocational Counselors	301	355	54	17.94	5	6	11	2	\$28.78
21-1013	Marriage and Family Therapists	*	*	*	*	*	*	*	2	N/A
21-1014	Mental Health Counselors	239	316	77	32.22	8	5	13	2	\$21.16
21-1015	Rehabilitation Counselors	73	88	15	20.55	2	2	4	2	\$18.76

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Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
21-1019	Counselors, All Other	*	*	*	*	*	*	*	2	N/A
21-1021	Child, Family, and School Social Workers	636	689	53	8.33	5	15	20	3	\$19.53
21-1022	Healthcare Social Workers	137	187	50	36.5	5	3	8	2	\$25.63
21-1023	Mental Health and Substance Abuse Social Workers	*	*	*	*	*	*	*	3	\$16.34
21-1029	Social Workers, All Other	61	67	6	9.84	1	2	3	3	N/A
21-1091	Health Educators	*	*	*	*	*	*	*	3	\$27.71
21-1092	Probation Officers and Correctional Treatment Specialists	65	69	4	6.15	0	1	1	3	N/A
21-1093	Social and Human Service Assistants	198	247	49	24.75	5	4	9	7	\$14.41
21-1094	Community Health Workers	*	*	*	*	*	*	*	7	\$19.54
21-1099	Community and Social Service Specialists, All Other	*	*	*	*	*	*	*	2	\$19.31
21-2000	Religious Workers	77	101	24	31.17	2	2	4	N/A	N/A
21-2011	Clergy	77	101	24	31.17	2	2	4	3	N/A
23-0000	Legal Occupations	1,321	1,434	113	8.55	11	22	33	N/A	\$48.04
23-1000	Lawyers, Judges, and Related Workers	941	1,020	79	8.4	8	14	22	N/A	N/A
23-1011	Lawyers	868	943	75	8.64	8	13	21	1	\$58.37
23-1012	Judicial Law Clerks	*	*	*	*	*	*	*	1	N/A
23-1021	Administrative Law Judges, Adjudicators, and Hearing Officers	37	39	2	5.41	0	0	0	1	N/A
23-1022	Arbitrators, Mediators, and Conciliators	*	*	*	*	*	*	*	3	N/A
23-1023	Judges, Magistrate Judges, and Magistrates	25	26	1	4	0	0	0	1	N/A

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Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
23-2000	Legal Support Workers	380	414	34	8.95	3	8	11	N/A	N/A
23-2011	Paralegals and Legal Assistants	356	390	34	9.55	3	8	11	4	\$26.97
23-2091	Court Reporters	*	*	*	*	*	*	*	5	N/A
23-2093	Title Examiners, Abstractors, and Searchers	*	*	*	*	*	*	*	7	\$26.78
23-2099	Legal Support Workers, All Other	*	*	*	*	*	*	*	7	N/A
25-0000	Education, Training, and Library Occupations	7,689	9,152	1463	19.03	146	166	312	N/A	\$25.49
25-1000	Postsecondary Teachers	1,324	1,666	342	25.83	34	24	58	N/A	N/A
25-1011	Business Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1021	Computer Science Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1022	Mathematical Science Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1032	Engineering Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1042	Biological Science Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1051	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1052	Chemistry Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1053	Environmental Science Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1054	Physics Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1061	Anthropology and Archeology Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1063	Economics Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1064	Geography Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A

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Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
25-1065	Political Science Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1066	Psychology Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1067	Sociology Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1071	Health Specialties Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1072	Nursing Instructors and Teachers, Postsecondary	106	142	36	33.96	4	2	6	2	N/A
25-1081	Education Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1111	Criminal Justice and Law Enforcement Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1112	Law Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1113	Social Work Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1121	Art, Drama, and Music Teachers, Postsecondary	*	*	*	*	*	*	*	2	N/A
25-1122	Communications Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1123	English Language and Literature Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1124	Foreign Language and Literature Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1125	History Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1126	Philosophy and Religion Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1191	Graduate Teaching Assistants	*	*	*	*	*	*	*	3	N/A
25-1193	Recreation and Fitness Studies Teachers, Postsecondary	*	*	*	*	*	*	*	1	N/A
25-1194	Vocational Education Teachers, Postsecondary	78	95	17	21.79	2	1	3	3	\$23.74
25-1199	Postsecondary Teachers, All Other	*	*	*	*	*	*	*	1	N/A

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Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
25-2000	Preschool, Primary, Secondary, and Special Education School Teachers	3,994	4,706	712	17.83	71	91	162	N/A	N/A
25-2011	Preschool Teachers, Except Special Education	247	274	27	10.93	3	7	10	4	\$16.49
25-2012	Kindergarten Teachers, Except Special Education	116	137	21	18.1	2	3	5	3	N/A
25-2021	Elementary School Teachers, Except Special Education	1,453	1,719	266	18.31	27	32	59	3	N/A
25-2022	Middle School Teachers, Except Special and Career/Technical Education	668	791	123	18.41	12	15	27	3	N/A
25-2023	Career/Technical Education Teachers, Middle School	*	*	*	*	*	*	*	3	N/A
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	946	1,120	174	18.39	17	22	39	3	N/A
25-2032	Career/Technical Education Teachers, Secondary School	13	15	2	15.38	0	0	0	3	N/A
25-2051	Special Education Teachers, Preschool	*	*	*	*	*	*	*	3	N/A
25-2052	Special Education Teachers, Kindergarten and Elementary School	247	293	46	18.62	5	5	10	3	N/A
25-2053	Special Education Teachers, Middle School	127	150	23	18.11	2	2	4	3	N/A
25-2054	Special Education Teachers, Secondary School	164	193	29	17.68	3	3	6	3	N/A
25-2059	Special Education Teachers, All Other	*	*	*	*	*	*	*	3	N/A
25-3000	Other Teachers and Instructors	407	496	89	21.87	9	8	17	N/A	N/A
25-3011	Adult Basic and Secondary Education and Literacy Teachers and Instructors	*	*	*	*	*	*	*	3	\$22.46
25-3021	Self-Enrichment Education Teachers	252	317	65	25.79	6	5	11	7	\$14.76
25-3097	Teachers and Instructors, All Other, Except Substitute Teachers	95	111	16	16.84	2	2	4	3	N/A
25-3098	Substitute Teachers	*	*	*	*	*	*	*	3	N/A
25-4000	Librarians, Curators, and Archivists	423	464	41	9.69	4	14	18	N/A	N/A

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
25-4011	Archivists	*	*	*	*	*	*	*	2	N/A
25-4012	Curators	*	*	*	*	*	*	*	2	N/A
25-4013	Museum Technicians and Conservators	*	*	*	*	*	*	*	3	N/A
25-4021	Librarians	206	227	21	10.19	2	4	6	2	\$27.27
25-4031	Library Technicians	202	220	18	8.91	2	10	12	5	\$14.15
25-9000	Other Education, Training, and Library Occupations	1,541	1,820	279	18.11	28	31	59	N/A	N/A
25-9021	Farm and Home Management Advisors	*	*	*	*	*	*	*	2	N/A
25-9031	Instructional Coordinators	*	*	*	*	*	*	*	2	\$32.42
25-9041	Teacher Assistants	1,121	1,317	196	17.48	20	27	47	6	N/A
25-9099	Education, Training, and Library Workers, All Other	211	257	46	21.8	5	2	7	3	\$20.92
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	1,601	1,768	167	10.43	18	39	57	N/A	\$20.35
27-1000	Art and Design Workers	754	847	93	12.33	10	18	28	N/A	N/A
27-1011	Art Directors	49	51	2	4.08	0	1	1	3	\$27.79
27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	*	*	*	*	*	*	*	3	N/A
27-1014	Multimedia Artists and Animators	*	*	*	*	*	*	*	3	N/A
27-1019	Artists and Related Workers, All Other	*	*	*	*	*	*	*	N/A	N/A
27-1021	Commercial and Industrial Designers	*	*	*	*	*	*	*	3	N/A
27-1022	Fashion Designers	*	*	*	*	*	*	*	3	N/A
27-1023	Floral Designers	87	80	-7	-8.05	0	2	2	7	\$9.56

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
27-1024	Graphic Designers	290	319	29	10	3	7	10	3	\$21.93
27-1025	Interior Designers	29	32	3	10.34	0	1	1	3	\$30.40
27-1026	Merchandise Displayers and Window Trimmers	215	258	43	20	4	5	9	7	\$14.37
27-1027	Set and Exhibit Designers	*	*	*	*	*	*	*	3	N/A
27-1029	Designers, All Other	*	*	*	*	*	*	*	3	N/A
27-2000	Entertainers and Performers, Sports and Related Workers	414	445	31	7.49	3	13	16	N/A	N/A
27-2011	Actors	*	*	*	*	*	*	*	6	N/A
27-2012	Producers and Directors	*	*	*	*	*	*	*	3	\$29.40
27-2021	Athletes and Sports Competitors	*	*	*	*	*	*	*	N/A	N/A
27-2022	Coaches and Scouts	140	159	19	13.57	2	5	7	3	N/A
27-2023	Umpires, Referees, and Other Sports Officials	*	*	*	*	*	*	*	7	N/A
27-2031	Dancers	*	*	*	*	*	*	*	N/A	N/A
27-2041	Music Directors and Composers	*	*	*	*	*	*	*	3	N/A
27-2042	Musicians and Singers	*	*	*	*	*	*	*	N/A	N/A
27-2099	Entertainers and Performers, Sports and Related Workers, All Other	*	*	*	*	*	*	*	N/A	N/A
27-3000	Media and Communication Workers	*	*	*	*	*	*	*	N/A	N/A
27-3011	Radio and Television Announcers	*	*	*	*	*	*	*	3	\$15.59
27-3012	Public Address System and Other Announcers	*	*	*	*	*	*	*	7	N/A
27-3022	Reporters and Correspondents	*	*	*	*	*	*	*	3	N/A

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
27-3031	Public Relations Specialists	139	158	19	13.67	2	2	4	3	\$26.65
27-3041	Editors	*	*	*	*	*	*	*	3	\$21.86
27-3042	Technical Writers	*	*	*	*	*	*	*	3	\$31.17
27-3043	Writers and Authors	*	*	*	*	*	*	*	3	\$21.29
27-3091	Interpreters and Translators	34	42	8	23.53	1	0	1	3	\$24.55
27-3099	Media and Communication Workers, All Other	*	*	*	*	*	*	*	7	\$19.48
27-4000	Media and Communication Equipment Workers	*	*	*	*	*	*	*	N/A	N/A
27-4011	Audio and Video Equipment Technicians	*	*	*	*	*	*	*	5	\$18.37
27-4012	Broadcast Technicians	*	*	*	*	*	*	*	4	N/A
27-4014	Sound Engineering Technicians	*	*	*	*	*	*	*	5	N/A
27-4021	Photographers	*	*	*	*	*	*	*	7	\$12.76
27-4031	Camera Operators, Television, Video, and Motion Picture	*	*	*	*	*	*	*	3	N/A
27-4032	Film and Video Editors	*	*	*	*	*	*	*	3	N/A
27-4099	Media and Communication Equipment Workers, All Other	*	*	*	*	*	*	*	7	N/A
29-0000	Healthcare Practitioners and Technical Occupations	10,187	12,887	2700	26.5	270	222	492	N/A	\$35.18
29-1000	Health Diagnosing and Treating Practitioners	6,138	7,850	1712	27.89	171	145	316	N/A	N/A
29-1011	Chiropractors	*	*	*	*	*	*	*	1	N/A
29-1021	Dentists, General	*	*	*	*	*	*	*	1	N/A
29-1022	Oral and Maxillofacial Surgeons	*	*	*	*	*	*	*	1	N/A

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
29-1023	Orthodontists	*	*	*	*	*	*	*	1	\$101.04
29-1031	Dietitians and Nutritionists	64	82	18	28.12	2	0	2	3	\$30.63
29-1041	Optometrists	66	86	20	30.3	2	2	4	1	\$39.51
29-1051	Pharmacists	396	452	56	14.14	6	9	15	1	\$59.24
29-1061	Anesthesiologists	*	*	*	*	*	*	*	1	N/A
29-1062	Family and General Practitioners	182	205	23	12.64	2	5	7	1	\$84.86
29-1063	Internists, General	*	*	*	*	*	*	*	1	N/A
29-1065	Pediatricians, General	*	*	*	*	*	*	*	1	\$91.04
29-1066	Psychiatrists	*	*	*	*	*	*	*	1	N/A
29-1067	Surgeons	*	*	*	*	*	*	*	1	N/A
29-1069	Physicians and Surgeons, All Other	176	216	40	22.73	4	5	9	1	\$85.27
29-1071	Physician Assistants	32	45	13	40.62	1	1	2	2	\$56.63
29-1081	Podiatrists	*	*	*	*	*	*	*	1	N/A
29-1122	Occupational Therapists	158	221	63	39.87	6	3	9	2	\$41.91
29-1123	Physical Therapists	248	341	93	37.5	9	7	16	1	\$44.10
29-1124	Radiation Therapists	*	*	*	*	*	*	*	4	N/A
29-1125	Recreational Therapists	*	*	*	*	*	*	*	3	\$22.43
29-1126	Respiratory Therapists	119	151	32	26.89	3	3	6	4	\$26.51
29-1127	Speech-Language Pathologists	168	219	51	30.36	5	4	9	2	\$35.21

*Employment under 10 and/or unreliable data suppressed, N/A Not Available, Education and Training Codes Page 12

Source: Kentucky Center for Education and Workforce Statistics

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
29-1128	Exercise Physiologists	*	*	*	*	*	*	*	3	N/A
29-1129	Therapists, All Other	*	*	*	*	*	*	*	3	\$44.75
29-1131	Veterinarians	106	117	11	10.38	1	2	3	1	\$49.74
29-1141	Registered Nurses	3,426	4,483	1057	30.85	106	81	187	3	\$31.28
29-1151	Nurse Anesthetists	*	*	*	*	*	*	*	2	\$63.71
29-1161	Nurse Midwives	*	*	*	*	*	*	*	2	N/A
29-1171	Nurse Practitioners	*	*	*	*	*	*	*	2	\$46.57
29-1181	Audiologists	*	*	*	*	*	*	*	1	N/A
29-1199	Health Diagnosing and Treating Practitioners, All Other	*	*	*	*	*	*	*	2	\$37.40
29-2000	Health Technologists and Technicians	3,820	4,772	952	24.92	95	73	168	N/A	N/A
29-2011	Medical and Clinical Laboratory Technologists	*	*	*	*	*	*	*	3	\$33.16
29-2012	Medical and Clinical Laboratory Technicians	*	*	*	*	*	*	*	4	N/A
29-2021	Dental Hygienists	221	260	39	17.65	4	4	8	4	\$31.01
29-2031	Cardiovascular Technologists and Technicians	*	*	*	*	*	*	*	4	N/A
29-2032	Diagnostic Medical Sonographers	*	*	*	*	*	*	*	4	N/A
29-2033	Nuclear Medicine Technologists	*	*	*	*	*	*	*	4	\$35.50
29-2034	Radiologic Technologists	*	*	*	*	*	*	*	4	\$26.37
29-2035	Magnetic Resonance Imaging Technologists	*	*	*	*	*	*	*	4	N/A
29-2041	Emergency Medical Technicians and Paramedics	461	510	49	10.63	5	8	13	5	\$16.47

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
29-2052	Pharmacy Technicians	578	707	129	22.32	13	6	19	7	\$13.16
29-2053	Psychiatric Technicians	*	*	*	*	*	*	*	5	N/A
29-2054	Respiratory Therapy Technicians	*	*	*	*	*	*	*	4	N/A
29-2055	Surgical Technologists	*	*	*	*	*	*	*	5	\$24.13
29-2056	Veterinary Technologists and Technicians	184	220	36	19.57	4	2	6	4	\$15.72
29-2057	Ophthalmic Medical Technicians	*	*	*	*	*	*	*	5	N/A
29-2061	Licensed Practical and Licensed Vocational Nurses	920	1,262	342	37.17	34	26	60	5	\$21.96
29-2071	Medical Records and Health Information Technicians	458	556	98	21.4	10	10	20	5	\$20.88
29-2081	Opticians, Dispensing	87	112	25	28.74	2	2	4	7	\$18.72
29-2091	Orthotists and Prosthetists	*	*	*	*	*	*	*	2	N/A
29-2092	Hearing Aid Specialists	*	*	*	*	*	*	*	7	N/A
29-2099	Health Technologists and Technicians, All Other	*	*	*	*	*	*	*	7	\$23.24
29-9000	Other Healthcare Practitioners and Technical Occupations	229	265	36	15.72	4	5	9	N/A	N/A
29-9011	Occupational Health and Safety Specialists	77	83	6	7.79	1	2	3	3	\$29.59
29-9012	Occupational Health and Safety Technicians	*	*	*	*	*	*	*	7	N/A
29-9091	Athletic Trainers	*	*	*	*	*	*	*	3	N/A
29-9092	Genetic Counselors	*	*	*	*	*	*	*	2	N/A
29-9099	Healthcare Practitioners and Technical Workers, All Other	*	*	*	*	*	*	*	5	\$22.65
31-0000	Healthcare Support Occupations	3,923	5,353	1430	36.45	143	86	229	N/A	\$14.93

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
31-1000	Nursing, Psychiatric, and Home Health Aides	2,132	3,116	984	46.15	98	48	146	N/A	N/A
31-1011	Home Health Aides	*	*	*	*	*	*	*	N/A	\$10.98
31-1013	Psychiatric Aides	*	*	*	*	*	*	*	7	N/A
31-1014	Nursing Assistants	1,856	2,712	856	46.12	86	42	128	5	\$13.48
31-1015	Orderlies	*	*	*	*	*	*	*	7	N/A
31-2000	Occupational Therapy and Physical Therapist Assistants and Aides	125	181	56	44.8	6	4	10	N/A	N/A
31-2011	Occupational Therapy Assistants	*	*	*	*	*	*	*	4	\$39.68
31-2012	Occupational Therapy Aides	*	*	*	*	*	*	*	7	\$13.82
31-2021	Physical Therapist Assistants	86	126	40	46.51	4	2	6	4	\$24.37
31-2022	Physical Therapist Aides	18	24	6	33.33	1	0	1	7	\$13.52
31-9000	Other Healthcare Support Occupations	1,666	2,056	390	23.41	39	34	73	N/A	N/A
31-9011	Massage Therapists	130	166	36	27.69	4	1	5	5	\$16.41
31-9091	Dental Assistants	406	480	74	18.23	7	10	17	5	\$18.73
31-9092	Medical Assistants	691	871	180	26.05	18	14	32	5	\$15.23
31-9093	Medical Equipment Preparers	*	*	*	*	*	*	*	7	N/A
31-9094	Medical Transcriptionists	*	*	*	*	*	*	*	5	\$20.86
31-9095	Pharmacy Aides	*	*	*	*	*	*	*	7	N/A
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	28	31	3	10.71	0	1	1	7	\$12.28
31-9097	Phlebotomists	*	*	*	*	*	*	*	5	\$16.33

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Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
31-9099	Healthcare Support Workers, All Other	39	48	9	23.08	1	1	2	7	\$19.60
33-0000	Protective Service Occupations	3,400	3,688	288	8.47	29	84	113	N/A	\$18.46
33-1000	Supervisors of Protective Service Workers	357	385	28	7.84	3	13	16	N/A	N/A
33-1011	First-Line Supervisors of Correctional Officers	15	16	1	6.67	0	0	0	7	\$22.89
33-1012	First-Line Supervisors of Police and Detectives	169	182	13	7.69	1	6	7	7	\$35.56
33-1021	First-Line Supervisors of Fire Fighting and Prevention Workers	101	109	8	7.92	1	5	6	5	\$28.87
33-1099	First-Line Supervisors of Protective Service Workers, All Other	72	78	6	8.33	1	2	3	7	\$25.50
33-2000	Fire Fighting and Prevention Workers	684	739	55	8.04	6	20	26	N/A	N/A
33-2011	Firefighters	*	*	*	*	*	*	*	5	\$15.78
33-2021	Fire Inspectors and Investigators	*	*	*	*	*	*	*	5	N/A
33-3000	Law Enforcement Workers	1,061	1,145	84	7.92	8	32	40	N/A	N/A
33-3011	Bailiffs	98	106	8	8.16	1	3	4	7	\$14.82
33-3012	Correctional Officers and Jailers	269	290	21	7.81	2	7	9	7	\$14.04
33-3021	Detectives and Criminal Investigators	116	126	10	8.62	1	3	4	7	\$32.06
33-3031	Fish and Game Wardens	*	*	*	*	*	*	*	3	N/A
33-3041	Parking Enforcement Workers	*	*	*	*	*	*	*	7	N/A
33-3051	Police and Sheriff's Patrol Officers	571	617	46	8.06	5	19	24	7	\$22.76
33-9000	Other Protective Service Workers	1,298	1,419	121	9.32	12	19	31	N/A	N/A
33-9011	Animal Control Workers	16	18	2	12.5	0	0	0	7	\$14.03

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Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
33-9021	Private Detectives and Investigators	*	*	*	*	*	*	*	7	\$25.62
33-9032	Security Guards	820	899	79	9.63	8	12	20	7	\$13.23
33-9091	Crossing Guards	*	*	*	*	*	*	*	N/A	N/A
33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	158	171	13	8.23	1	2	3	N/A	\$9.42
33-9093	Transportation Security Screeners	188	202	14	7.45	1	3	4	7	\$21.05
33-9099	Protective Service Workers, All Other	*	*	*	*	*	*	*	7	\$17.95
35-0000	Food Preparation and Serving Related Occupations	19,486	20,934	1448	7.43	160	703	863	N/A	\$10.11
35-1000	Supervisors of Food Preparation and Serving Workers	1,734	1,908	174	10.03	17	50	67	N/A	N/A
35-1011	Chefs and Head Cooks	80	98	18	22.5	2	1	3	7	\$21.43
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	1,654	1,810	156	9.43	16	49	65	7	\$14.40
35-2000	Cooks and Food Preparation Workers	4,173	4,568	395	9.47	50	112	162	N/A	N/A
35-2011	Cooks, Fast Food	553	455	-98	-17.72	0	15	15	N/A	\$8.76
35-2012	Cooks, Institution and Cafeteria	883	1,046	163	18.46	16	23	39	N/A	\$12.80
35-2013	Cooks, Private Household	*	*	*	*	*	*	*	5	N/A
35-2014	Cooks, Restaurant	1,790	2,014	224	12.51	22	47	69	N/A	\$10.50
35-2015	Cooks, Short Order	*	*	*	*	*	*	*	N/A	\$10.26
35-2019	Cooks, All Other	*	*	*	*	*	*	*	N/A	N/A
35-2021	Food Preparation Workers	761	874	113	14.85	11	21	32	N/A	\$10.72
35-3000	Food and Beverage Serving Workers	12,025	12,888	863	7.18	86	456	542	N/A	N/A

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Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
35-3011	Bartenders	682	741	59	8.65	6	26	32	N/A	\$9.15
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	6,997	7,708	711	10.16	71	226	297	N/A	\$9.16
35-3022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	*	*	*	*	*	*	*	N/A	\$9.13
35-3031	Waiters and Waitresses	3,757	3,801	44	1.17	4	181	185	N/A	\$9.38
35-3041	Food Servers, Nonrestaurant	*	*	*	*	*	*	*	N/A	\$12.76
35-9000	Other Food Preparation and Serving Related Workers	1,554	1,570	16	1.03	6	85	91	N/A	N/A
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	*	*	*	*	*	*	*	N/A	\$9.26
35-9021	Dishwashers	624	584	-40	-6.41	0	27	27	N/A	\$8.85
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	559	575	16	2.86	2	40	42	N/A	\$8.80
35-9099	Food Preparation and Serving Related Workers, All Other	*	*	*	*	*	*	*	N/A	N/A
37-0000	Building and Grounds Cleaning and Maintenance Occupations	6,399	7,228	829	12.96	83	127	210	N/A	\$13.13
37-1000	Supervisors of Building and Grounds Cleaning and Maintenance Workers	883	972	89	10.08	9	14	23	N/A	N/A
37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers	353	406	53	15.01	5	6	11	7	\$17.97
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	530	566	36	6.79	4	9	13	7	\$19.29
37-2000	Building Cleaning and Pest Control Workers	3,905	4,528	623	15.95	62	84	146	N/A	N/A
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	2,397	2,668	271	11.31	27	48	75	N/A	\$13.39
37-2012	Maids and Housekeeping Cleaners	*	*	*	*	*	*	*	N/A	\$10.71
37-2021	Pest Control Workers	*	*	*	*	*	*	*	7	N/A
37-3000	Grounds Maintenance Workers	1,611	1,728	117	7.26	12	29	41	N/A	N/A

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
37-3011	Landscaping and Groundskeeping Workers	1,407	1,505	98	6.97	10	25	35	N/A	\$11.66
37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	16	18	2	12.5	0	0	0	7	N/A
37-3013	Tree Trimmers and Pruners	186	203	17	9.14	2	3	5	7	N/A
37-3019	Grounds Maintenance Workers, All Other	*	*	*	*	*	*	*	N/A	N/A
39-0000	Personal Care and Service Occupations	6,826	7,839	1013	14.84	102	159	261	N/A	\$11.07
39-1000	Supervisors of Personal Care and Service Workers	478	540	62	12.97	6	9	15	N/A	N/A
39-1011	Gaming Supervisors	*	*	*	*	*	*	*	7	N/A
39-1012	Slot Supervisors	*	*	*	*	*	*	*	7	N/A
39-1021	First-Line Supervisors of Personal Service Workers	472	534	62	13.14	6	9	15	7	\$15.03
39-2000	Animal Care and Service Workers	371	413	42	11.32	4	8	12	N/A	N/A
39-2011	Animal Trainers	39	45	6	15.38	1	1	2	7	\$13.28
39-2021	Nonfarm Animal Caretakers	332	368	36	10.84	4	7	11	7	\$10.86
39-3000	Entertainment Attendants and Related Workers	400	408	8	2	1	18	19	N/A	N/A
39-3012	Gaming and Sports Book Writers and Runners	*	*	*	*	*	*	*	7	N/A
39-3031	Ushers, Lobby Attendants, and Ticket Takers	*	*	*	*	*	*	*	N/A	N/A
39-3091	Amusement and Recreation Attendants	270	268	-2	-0.74	0	11	11	N/A	\$9.37
39-3093	Locker Room, Coatroom, and Dressing Room Attendants	*	*	*	*	*	*	*	7	N/A
39-3099	Entertainment Attendants and Related Workers, All Other	*	*	*	*	*	*	*	7	N/A
39-4000	Funeral Service Workers	*	*	*	*	*	*	*	N/A	N/A

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
39-4011	Embalmers	*	*	*	*	*	*	*	5	N/A
39-4021	Funeral Attendants	*	*	*	*	*	*	*	7	N/A
39-4031	Morticians, Undertakers, and Funeral Directors	*	*	*	*	*	*	*	4	\$16.51
39-5000	Personal Appearance Workers	958	1,093	135	14.09	14	22	36	N/A	N/A
39-5012	Hairdressers, Hairstylists, and Cosmetologists	820	936	116	14.15	12	21	33	5	\$11.40
39-5092	Manicurists and Pedicurists	*	*	*	*	*	*	*	5	N/A
39-5094	Skincare Specialists	*	*	*	*	*	*	*	5	N/A
39-6000	Baggage Porters, Bellhops, and Concierges	*	*	*	*	*	*	*	N/A	N/A
39-6011	Baggage Porters and Bellhops	*	*	*	*	*	*	*	7	N/A
39-6012	Concierges	*	*	*	*	*	*	*	7	N/A
39-7000	Tour and Travel Guides	*	*	*	*	*	*	*	N/A	N/A
39-7011	Tour Guides and Escorts	*	*	*	*	*	*	*	7	N/A
39-7012	Travel Guides	*	*	*	*	*	*	*	7	N/A
39-9000	Other Personal Care and Service Workers	4,530	5,285	755	16.67	76	100	176	N/A	N/A
39-9011	Childcare Workers	2,164	2,379	215	9.94	22	64	86	7	\$10.11
39-9021	Personal Care Aides	1,150	1,470	320	27.83	32	9	41	N/A	\$9.99
39-9031	Fitness Trainers and Aerobics Instructors	342	354	12	3.51	1	6	7	7	\$11.84
39-9032	Recreation Workers	441	531	90	20.41	9	8	17	7	\$12.17
39-9041	Residential Advisors	345	453	108	31.3	11	10	21	7	\$12.15

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
39-9099	Personal Care and Service Workers, All Other	88	98	10	11.36	1	2	3	7	\$11.88
41-0000	Sales and Related Occupations	19,092	21,191	2099	10.99	210	565	775	N/A	\$18.95
41-1000	Supervisors of Sales Workers	2,399	2,633	234	9.75	23	49	72	N/A	N/A
41-1011	First-Line Supervisors of Retail Sales Workers	1,932	2,109	177	9.16	18	43	61	7	\$19.87
41-1012	First-Line Supervisors of Non-Retail Sales Workers	467	524	57	12.21	6	5	11	7	\$32.86
41-2000	Retail Sales Workers	10,774	11,871	1097	10.18	110	402	512	N/A	N/A
41-2011	Cashiers	4,705	5,025	320	6.8	32	200	232	N/A	\$9.53
41-2021	Counter and Rental Clerks	471	510	39	8.28	4	12	16	N/A	\$15.93
41-2022	Parts Salespersons	271	306	35	12.92	4	6	10	N/A	\$14.41
41-2031	Retail Salespersons	5,327	6,030	703	13.2	70	185	255	N/A	\$12.12
41-3000	Sales Representatives, Services	2,190	2,456	266	12.15	27	47	74	N/A	N/A
41-3011	Advertising Sales Agents	*	*	*	*	*	*	*	7	\$21.60
41-3021	Insurance Sales Agents	402	453	51	12.69	5	11	16	7	\$25.21
41-3031	Securities, Commodities, and Financial Services Sales Agents	605	660	55	9.09	6	10	16	3	\$38.89
41-3041	Travel Agents	*	*	*	*	*	*	*	7	N/A
41-3099	Sales Representatives, Services, All Other	1,108	1,270	162	14.62	16	24	40	7	\$29.80
41-4000	Sales Representatives, Wholesale and Manufacturing	2,588	2,990	402	15.53	40	53	93	N/A	N/A
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	404	459	55	13.61	6	8	14	3	\$36.73
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	2,184	2,531	347	15.89	35	45	80	7	\$36.24

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
41-9000	Other Sales and Related Workers	1,141	1,241	100	8.76	10	14	24	N/A	N/A
41-9011	Demonstrators and Product Promoters	42	45	3	7.14	0	1	1	7	\$12.25
41-9022	Real Estate Sales Agents	546	573	27	4.95	3	4	7	7	\$18.06
41-9031	Sales Engineers	*	*	*	*	*	*	*	3	\$38.80
41-9041	Telemarketers	*	*	*	*	*	*	*	N/A	\$14.72
41-9091	Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	19	22	3	15.79	0	0	0	N/A	N/A
41-9099	Sales and Related Workers, All Other	236	287	51	21.61	5	3	8	7	\$19.83
43-0000	Office and Administrative Support Occupations	31,078	33,771	2693	8.67	297	648	945	N/A	\$17.54
43-1000	Supervisors of Office and Administrative Support Workers	2,130	2,423	293	13.76	29	32	61	N/A	N/A
43-1011	First-Line Supervisors of Office and Administrative Support Workers	2,130	2,423	293	13.76	29	32	61	7	\$24.71
43-2000	Communications Equipment Operators	97	72	-25	-25.77	0	1	1	N/A	N/A
43-2011	Switchboard Operators, Including Answering Service	*	*	*	*	*	*	*	7	\$14.18
43-2021	Telephone Operators	*	*	*	*	*	*	*	7	N/A
43-3000	Financial Clerks	4,574	4,781	207	4.53	25	82	107	N/A	N/A
43-3011	Bill and Account Collectors	254	255	1	0.39	0	6	6	7	\$16.60
43-3021	Billing and Posting Clerks	896	1,098	202	22.54	20	19	39	7	\$18.00
43-3031	Bookkeeping, Accounting, and Auditing Clerks	2,481	2,436	-45	-1.81	0	24	24	6	\$19.44
43-3051	Payroll and Timekeeping Clerks	204	204	0	0	0	6	6	7	\$20.71
43-3061	Procurement Clerks	*	*	*	*	*	*	*	7	\$19.98

*Employment under 10 and/or unreliable data suppressed, N/A Not Available, Education and Training Codes Page 12

Source: Kentucky Center for Education and Workforce Statistics

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
43-3071	Tellers	541	572	31	5.73	3	21	24	7	\$11.96
43-3099	Financial Clerks, All Other	*	*	*	*	*	*	*	7	N/A
43-4000	Information and Record Clerks	9,563	10,659	1096	11.46	111	216	327	N/A	N/A
43-4011	Brokerage Clerks	*	*	*	*	*	*	*	7	\$18.88
43-4021	Correspondence Clerks	*	*	*	*	*	*	*	7	N/A
43-4031	Court, Municipal, and License Clerks	276	297	21	7.61	2	2	4	7	\$17.42
43-4041	Credit Authorizers, Checkers, and Clerks	*	*	*	*	*	*	*	7	\$21.32
43-4051	Customer Service Representatives	3,059	3,503	444	14.51	44	75	119	7	\$16.77
43-4061	Eligibility Interviewers, Government Programs	686	739	53	7.73	5	8	13	7	\$24.99
43-4071	File Clerks	114	115	1	0.88	0	2	2	7	\$14.14
43-4081	Hotel, Motel, and Resort Desk Clerks	292	357	65	22.26	6	15	21	7	\$9.51
43-4111	Interviewers, Except Eligibility and Loan	552	624	72	13.04	7	13	20	7	\$13.43
43-4121	Library Assistants, Clerical	186	203	17	9.14	2	6	8	7	\$10.57
43-4131	Loan Interviewers and Clerks	264	327	63	23.86	6	4	10	7	\$16.00
43-4141	New Accounts Clerks	*	*	*	*	*	*	*	7	N/A
43-4151	Order Clerks	238	239	1	0.42	0	6	6	7	\$15.49
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	181	195	14	7.73	1	2	3	4	\$20.12
43-4171	Receptionists and Information Clerks	1,430	1,657	227	15.87	23	38	61	7	\$13.74
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	*	*	*	*	*	*	*	7	N/A

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Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
43-4199	Information and Record Clerks, All Other	542	592	50	9.23	5	14	19	7	\$18.23
43-5000	Material Recording, Scheduling, Dispatching, and Distributing Workers	7,064	7,682	618	8.75	70	197	267	N/A	N/A
43-5011	Cargo and Freight Agents	396	433	37	9.34	4	13	17	7	\$18.61
43-5021	Couriers and Messengers	84	95	11	13.1	1	1	2	7	\$18.30
43-5031	Police, Fire, and Ambulance Dispatchers	*	*	*	*	*	*	*	7	\$18.58
43-5032	Dispatchers, Except Police, Fire, and Ambulance	318	355	37	11.64	4	8	12	7	\$19.26
43-5041	Meter Readers, Utilities	*	*	*	*	*	*	*	7	N/A
43-5051	Postal Service Clerks	107	94	-13	-12.15	0	1	1	7	\$23.77
43-5052	Postal Service Mail Carriers	484	425	-59	-12.19	0	9	9	7	\$25.05
43-5053	Postal Service Mail Sorters, Processors, and Processing Machine Operators	16	12	-4	-25	0	0	0	7	\$27.41
43-5061	Production, Planning, and Expediting Clerks	608	662	54	8.88	5	16	21	7	\$28.25
43-5071	Shipping, Receiving, and Traffic Clerks	1,181	1,246	65	5.5	6	26	32	7	\$16.27
43-5081	Stock Clerks and Order Fillers	3,711	4,203	492	13.26	49	118	167	N/A	\$12.86
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	46	49	3	6.52	0	1	1	7	\$16.28
43-6000	Secretaries and Administrative Assistants	3,906	4,203	297	7.6	31	41	72	N/A	N/A
43-6011	Executive Secretaries and Executive Administrative Assistants	587	581	-6	-1.02	0	6	6	7	\$22.68
43-6012	Legal Secretaries	426	419	-7	-1.64	0	4	4	7	\$16.61
43-6013	Medical Secretaries	355	436	81	22.82	8	4	12	7	\$16.61
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	2,538	2,767	229	9.02	23	27	50	7	\$16.22

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
43-9000	Other Office and Administrative Support Workers	3,744	3,951	207	5.53	31	78	109	N/A	N/A
43-9011	Computer Operators	24	25	1	4.17	0	0	0	7	\$19.86
43-9021	Data Entry Keyers	495	456	-39	-7.88	0	6	6	7	\$16.28
43-9022	Word Processors and Typists	*	*	*	*	*	*	*	7	N/A
43-9031	Desktop Publishers	*	*	*	*	*	*	*	4	N/A
43-9041	Insurance Claims and Policy Processing Clerks	88	97	9	10.23	1	2	3	7	\$19.70
43-9051	Mail Clerks and Mail Machine Operators, Except Postal Service	391	339	-52	-13.3	0	8	8	7	\$16.04
43-9061	Office Clerks, General	2,221	2,444	223	10.04	22	48	70	7	\$15.19
43-9071	Office Machine Operators, Except Computer	65	55	-10	-15.38	0	2	2	7	\$14.07
43-9081	Proofreaders and Copy Markers	*	*	*	*	*	*	*	3	N/A
43-9111	Statistical Assistants	*	*	*	*	*	*	*	3	N/A
43-9199	Office and Administrative Support Workers, All Other	442	515	73	16.52	7	12	19	7	\$21.98
45-0000	Farming, Fishing, and Forestry Occupations	200	231	31	15.5	3	5	8	N/A	\$14.16
45-1000	Supervisors of Farming, Fishing, and Forestry Workers	*	*	*	*	*	*	*	N/A	N/A
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	*	*	*	*	*	*	*	7	N/A
45-2000	Agricultural Workers	99	101	2	2.02	0	3	3	N/A	N/A
45-2011	Agricultural Inspectors	*	*	*	*	*	*	*	3	N/A
45-2021	Animal Breeders	*	*	*	*	*	*	*	7	N/A
45-2041	Graders and Sorters, Agricultural Products	*	*	*	*	*	*	*	N/A	N/A

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Source: Kentucky Center for Education and Workforce Statistics

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
45-2091	Agricultural Equipment Operators	*	*	*	*	*	*	*	N/A	N/A
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	70	68	-2	-2.86	0	2	2	N/A	\$11.54
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	19	21	2	10.53	0	0	0	N/A	N/A
45-2099	Agricultural Workers, All Other	*	*	*	*	*	*	*	N/A	N/A
45-4000	Forest, Conservation, and Logging Workers	95	124	29	30.53	3	2	5	N/A	N/A
45-4011	Forest and Conservation Workers	*	*	*	*	*	*	*	7	N/A
45-4022	Logging Equipment Operators	*	*	*	*	*	*	*	7	N/A
47-0000	Construction and Extraction Occupations	5,438	6,655	1217	22.38	122	82	204	N/A	\$20.42
47-1000	Supervisors of Construction and Extraction Workers	419	488	69	16.47	7	3	10	N/A	N/A
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	419	488	69	16.47	7	3	10	7	\$29.34
47-2000	Construction Trades Workers	4,348	5,379	1031	23.71	103	66	169	N/A	N/A
47-2011	Boilermakers	*	*	*	*	*	*	*	7	N/A
47-2021	Brickmasons and Blockmasons	49	70	21	42.86	2	0	2	7	\$18.24
47-2031	Carpenters	855	1,023	168	19.65	17	10	27	7	\$19.85
47-2041	Carpet Installers	*	*	*	*	*	*	*	N/A	\$18.87
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	*	*	*	*	*	*	*	N/A	N/A
47-2043	Floor Sanders and Finishers	*	*	*	*	*	*	*	N/A	N/A
47-2044	Tile and Marble Setters	*	*	*	*	*	*	*	N/A	N/A
47-2051	Cement Masons and Concrete Finishers	223	299	76	34.08	8	3	11	N/A	\$17.06

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Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
47-2061	Construction Laborers	827	991	164	19.83	16	16	32	N/A	\$16.48
47-2071	Paving, Surfacing, and Tamping Equipment Operators	129	154	25	19.38	2	3	5	7	\$21.19
47-2073	Operating Engineers and Other Construction Equipment Operators	303	350	47	15.51	5	5	10	7	\$24.24
47-2081	Drywall and Ceiling Tile Installers	*	*	*	*	*	*	*	N/A	\$14.85
47-2082	Tapers	*	*	*	*	*	*	*	N/A	N/A
47-2111	Electricians	574	741	167	29.09	17	9	26	7	\$22.64
47-2121	Glaziers	*	*	*	*	*	*	*	7	N/A
47-2141	Painters, Construction and Maintenance	380	475	95	25	10	6	16	N/A	\$18.02
47-2142	Paperhangers	*	*	*	*	*	*	*	N/A	N/A
47-2151	Pipelayers	*	*	*	*	*	*	*	N/A	N/A
47-2152	Plumbers, Pipefitters, and Steamfitters	508	654	146	28.74	15	7	22	7	\$22.56
47-2161	Plasterers and Stucco Masons	*	*	*	*	*	*	*	N/A	N/A
47-2171	Reinforcing Iron and Rebar Workers	*	*	*	*	*	*	*	7	N/A
47-2181	Roofers	91	121	30	32.97	3	1	4	N/A	\$17.94
47-2211	Sheet Metal Workers	*	*	*	*	*	*	*	7	\$19.44
47-2221	Structural Iron and Steel Workers	*	*	*	*	*	*	*	7	\$22.74
47-3000	Helpers, Construction Trades	278	374	96	34.53	10	3	13	N/A	N/A
47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	17	25	8	47.06	1	0	1	N/A	\$12.93
47-3012	Helpers--Carpenters	*	*	*	*	*	*	*	N/A	N/A

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
47-3013	Helpers--Electricians	*	*	*	*	*	*	*	7	\$14.99
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	89	114	25	28.09	2	1	3	7	\$15.02
47-3016	Helpers--Roofers	*	*	*	*	*	*	*	N/A	N/A
47-4000	Other Construction and Related Workers	332	356	24	7.23	2	9	11	N/A	N/A
47-4011	Construction and Building Inspectors	52	57	5	9.62	0	2	2	7	\$23.32
47-4021	Elevator Installers and Repairers	*	*	*	*	*	*	*	7	N/A
47-4041	Hazardous Materials Removal Workers	*	*	*	*	*	*	*	7	N/A
47-4051	Highway Maintenance Workers	196	205	9	4.59	1	5	6	7	\$18.41
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	*	*	*	*	*	*	*	N/A	\$21.25
47-5000	Extraction Workers	61	58	-3	-4.92	0	1	1	N/A	N/A
47-5021	Earth Drillers, Except Oil and Gas	*	*	*	*	*	*	*	7	\$24.45
47-5031	Explosives Workers, Ordnance Handling Experts, and Blasters	*	*	*	*	*	*	*	7	N/A
47-5041	Continuous Mining Machine Operators	*	*	*	*	*	*	*	N/A	N/A
47-5049	Mining Machine Operators, All Other	*	*	*	*	*	*	*	7	N/A
47-5061	Roof Bolters, Mining	*	*	*	*	*	*	*	7	N/A
47-5081	Helpers--Extraction Workers	15	15	0	0	0	0	0	7	N/A
47-5099	Extraction Workers, All Other	*	*	*	*	*	*	*	7	N/A
49-0000	Installation, Maintenance, and Repair Occupations	7,942	9,022	1080	13.6	110	184	294	N/A	\$22.69
49-1000	Supervisors of Installation, Maintenance, and Repair Workers	606	676	70	11.55	7	12	19	N/A	N/A

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	606	676	70	11.55	7	12	19	7	\$31.64
49-2000	Electrical and Electronic Equipment Mechanics, Installers, and Repairers	657	754	97	14.76	10	9	19	N/A	N/A
49-2011	Computer, Automated Teller, and Office Machine Repairers	101	112	11	10.89	1	2	3	6	\$17.58
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	*	*	*	*	*	*	*	5	\$17.38
49-2091	Avionics Technicians	*	*	*	*	*	*	*	4	N/A
49-2092	Electric Motor, Power Tool, and Related Repairers	*	*	*	*	*	*	*	5	N/A
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	*	*	*	*	*	*	*	5	\$29.19
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	*	*	*	*	*	*	*	5	N/A
49-2097	Electronic Home Entertainment Equipment Installers and Repairers	43	47	4	9.3	0	1	1	5	\$18.82
49-2098	Security and Fire Alarm Systems Installers	15	17	2	13.33	0	0	0	7	\$19.43
49-3000	Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	2,606	2,865	259	9.94	26	63	89	N/A	N/A
49-3011	Aircraft Mechanics and Service Technicians	361	397	36	9.97	4	9	13	5	\$35.45
49-3021	Automotive Body and Related Repairers	194	213	19	9.79	2	4	6	7	\$20.14
49-3022	Automotive Glass Installers and Repairers	*	*	*	*	*	*	*	7	N/A
49-3023	Automotive Service Technicians and Mechanics	1,004	1,071	67	6.67	7	27	34	5	\$19.81
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	423	506	83	19.62	8	7	15	7	\$21.81
49-3041	Farm Equipment Mechanics and Service Technicians	29	37	8	27.59	1	1	2	7	N/A
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	136	157	21	15.44	2	3	5	7	\$28.97
49-3051	Motorboat Mechanics and Service Technicians	*	*	*	*	*	*	*	7	N/A

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
49-3052	Motorcycle Mechanics	*	*	*	*	*	*	*	5	N/A
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	*	*	*	*	*	*	*	7	\$15.87
49-3093	Tire Repairers and Changers	*	*	*	*	*	*	*	7	\$10.79
49-9000	Other Installation, Maintenance, and Repair Occupations	4,073	4,727	654	16.06	68	100	168	N/A	N/A
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	*	*	*	*	*	*	*	7	\$26.69
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	322	437	115	35.71	12	5	17	5	\$23.49
49-9031	Home Appliance Repairers	*	*	*	*	*	*	*	7	N/A
49-9041	Industrial Machinery Mechanics	779	995	216	27.73	22	20	42	7	\$23.85
49-9043	Maintenance Workers, Machinery	*	*	*	*	*	*	*	7	\$21.38
49-9044	Millwrights	*	*	*	*	*	*	*	7	N/A
49-9051	Electrical Power-Line Installers and Repairers	218	256	38	17.43	4	9	13	7	\$28.76
49-9052	Telecommunications Line Installers and Repairers	*	*	*	*	*	*	*	7	\$21.93
49-9062	Medical Equipment Repairers	*	*	*	*	*	*	*	4	\$25.45
49-9063	Musical Instrument Repairers and Tuners	*	*	*	*	*	*	*	7	N/A
49-9069	Precision Instrument and Equipment Repairers, All Other	65	74	9	13.85	1	1	2	7	\$29.90
49-9071	Maintenance and Repair Workers, General	1,832	2,033	201	10.97	20	48	68	7	\$20.65
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	*	*	*	*	*	*	*	7	\$14.31
49-9094	Locksmiths and Safe Repairers	*	*	*	*	*	*	*	7	N/A
49-9095	Manufactured Building and Mobile Home Installers	*	*	*	*	*	*	*	7	N/A

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Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
49-9096	Riggers	*	*	*	*	*	*	*	7	N/A
49-9098	Helpers--Installation, Maintenance, and Repair Workers	*	*	*	*	*	*	*	7	\$13.92
49-9099	Installation, Maintenance, and Repair Workers, All Other	235	258	23	9.79	2	4	6	7	\$17.64
51-0000	Production Occupations	18,995	20,430	1435	7.55	171	441	612	N/A	\$17.47
51-1000	Supervisors of Production Workers	1,078	1,154	76	7.05	8	17	25	N/A	N/A
51-1011	First-Line Supervisors of Production and Operating Workers	1,078	1,154	76	7.05	8	17	25	7	\$28.86
51-2000	Assemblers and Fabricators	3,823	4,161	338	8.84	35	79	114	N/A	N/A
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	*	*	*	*	*	*	*	7	N/A
51-2021	Coil Winders, Tapers, and Finishers	*	*	*	*	*	*	*	7	N/A
51-2022	Electrical and Electronic Equipment Assemblers	203	223	20	9.85	2	2	4	7	\$18.13
51-2031	Engine and Other Machine Assemblers	*	*	*	*	*	*	*	7	\$22.44
51-2041	Structural Metal Fabricators and Fitters	*	*	*	*	*	*	*	7	\$19.29
51-2091	Fiberglass Laminators and Fabricators	*	*	*	*	*	*	*	7	N/A
51-2092	Team Assemblers	2,700	2,957	257	9.52	26	58	84	7	\$16.89
51-2099	Assemblers and Fabricators, All Other	683	742	59	8.64	6	15	21	7	\$14.38
51-3000	Food Processing Workers	1,149	1,298	149	12.97	15	24	39	N/A	N/A
51-3011	Bakers	197	224	27	13.71	3	4	7	N/A	\$10.09
51-3021	Butchers and Meat Cutters	165	187	22	13.33	2	3	5	N/A	\$15.51
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	49	54	5	10.2	0	1	1	N/A	\$13.71

*Employment under 10 and/or unreliable data suppressed, N/A Not Available, Education and Training Codes Page 12

Source: Kentucky Center for Education and Workforce Statistics

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
51-3023	Slaughterers and Meat Packers	47	53	6	12.77	1	1	2	N/A	N/A
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	*	*	*	*	*	*	*	N/A	N/A
51-3092	Food Batchmakers	537	604	67	12.48	7	12	19	7	\$13.08
51-3093	Food Cooking Machine Operators and Tenders	*	*	*	*	*	*	*	7	N/A
51-3099	Food Processing Workers, All Other	49	57	8	16.33	1	1	2	N/A	\$9.60
51-4000	Metal Workers and Plastic Workers	3,404	3,544	140	4.11	34	87	121	N/A	N/A
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	*	*	*	*	*	*	*	7	\$22.47
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	42	54	12	28.57	1	1	2	7	\$23.09
51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	*	*	*	*	*	*	*	7	\$18.21
51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	*	*	*	*	*	*	*	7	N/A
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	262	237	-25	-9.54	0	3	3	7	\$18.21
51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	*	*	*	*	*	*	*	7	\$17.83
51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	200	185	-15	-7.5	0	8	8	7	\$14.30
51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	*	*	*	*	*	*	*	7	\$18.98
51-4035	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	*	*	*	*	*	*	*	7	N/A
51-4041	Machinists	883	1,048	165	18.69	16	26	42	7	\$19.83
51-4051	Metal-Refining Furnace Operators and Tenders	*	*	*	*	*	*	*	7	N/A
51-4052	Pourers and Casters, Metal	*	*	*	*	*	*	*	7	N/A
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	317	276	-41	-12.93	0	5	5	7	\$16.44

*Employment under 10 and/or unreliable data suppressed, N/A Not Available, Education and Training Codes Page 12

Source: Kentucky Center for Education and Workforce Statistics

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	80	90	10	12.5	1	1	2	7	\$17.42
51-4111	Tool and Die Makers	*	*	*	*	*	*	*	7	\$23.88
51-4121	Welders, Cutters, Solderers, and Brazers	595	660	65	10.92	6	17	23	7	\$18.10
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	*	*	*	*	*	*	*	7	\$20.81
51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	*	*	*	*	*	*	*	7	\$21.66
51-4192	Layout Workers, Metal and Plastic	*	*	*	*	*	*	*	7	N/A
51-4193	Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic	19	17	-2	-10.53	0	0	0	7	\$18.74
51-4194	Tool Grinders, Filers, and Sharpeners	*	*	*	*	*	*	*	7	N/A
51-4199	Metal Workers and Plastic Workers, All Other	*	*	*	*	*	*	*	7	N/A
51-5100	Printing Workers	877	884	7	0.8	3	13	16	N/A	N/A
51-5111	Prepress Technicians and Workers	119	100	-19	-15.97	0	2	2	5	\$24.24
51-5112	Printing Press Operators	554	564	10	1.81	1	8	9	7	\$19.50
51-5113	Print Binding and Finishing Workers	204	220	16	7.84	2	3	5	7	\$19.05
51-6000	Textile, Apparel, and Furnishings Workers	873	967	94	10.77	10	13	23	N/A	N/A
51-6011	Laundry and Dry-Cleaning Workers	366	403	37	10.11	4	5	9	N/A	\$11.35
51-6021	Pressers, Textile, Garment, and Related Materials	44	47	3	6.82	0	1	1	N/A	\$11.20
51-6031	Sewing Machine Operators	190	228	38	20	4	1	5	N/A	\$12.70
51-6041	Shoe and Leather Workers and Repairers	*	*	*	*	*	*	*	7	N/A
51-6052	Tailors, Dressmakers, and Custom Sewers	*	*	*	*	*	*	*	N/A	\$12.53

*Employment under 10 and/or unreliable data suppressed, N/A Not Available, Education and Training Codes Page 12

Source: Kentucky Center for Education and Workforce Statistics

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders	*	*	*	*	*	*	*	7	N/A
51-6062	Textile Cutting Machine Setters, Operators, and Tenders	*	*	*	*	*	*	*	7	N/A
51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders	*	*	*	*	*	*	*	7	N/A
51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	*	*	*	*	*	*	*	7	N/A
51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers	*	*	*	*	*	*	*	7	N/A
51-6093	Upholsterers	*	*	*	*	*	*	*	7	N/A
51-6099	Textile, Apparel, and Furnishings Workers, All Other	*	*	*	*	*	*	*	7	N/A
51-7000	Woodworkers	*	*	*	*	*	*	*	N/A	N/A
51-7011	Cabinetmakers and Bench Carpenters	*	*	*	*	*	*	*	7	N/A
51-7099	Woodworkers, All Other	*	*	*	*	*	*	*	7	N/A
51-8000	Plant and System Operators	*	*	*	*	*	*	*	N/A	N/A
51-8012	Power Distributors and Dispatchers	*	*	*	*	*	*	*	7	N/A
51-8013	Power Plant Operators	*	*	*	*	*	*	*	7	N/A
51-8021	Stationary Engineers and Boiler Operators	*	*	*	*	*	*	*	7	N/A
51-8031	Water and Wastewater Treatment Plant and System Operators	106	115	9	8.49	1	3	4	7	\$19.16
51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	*	*	*	*	*	*	*	7	N/A
51-8099	Plant and System Operators, All Other	*	*	*	*	*	*	*	7	N/A
51-9000	Other Production Occupations	7,421	8,024	603	8.13	64	197	261	N/A	N/A
51-9011	Chemical Equipment Operators and Tenders	*	*	*	*	*	*	*	7	N/A

*Employment under 10 and/or unreliable data suppressed, N/A Not Available, Education and Training Codes Page 12

Source: Kentucky Center for Education and Workforce Statistics

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	*	*	*	*	*	*	*	7	N/A
51-9021	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	*	*	*	*	*	*	*	7	\$18.93
51-9022	Grinding and Polishing Workers, Hand	*	*	*	*	*	*	*	N/A	N/A
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	244	261	17	6.97	2	5	7	7	\$16.28
51-9031	Cutters and Trimmers, Hand	*	*	*	*	*	*	*	N/A	N/A
51-9032	Cutting and Slicing Machine Setters, Operators, and Tenders	111	105	-6	-5.41	0	2	2	7	\$15.99
51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	*	*	*	*	*	*	*	7	\$19.08
51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	71	70	-1	-1.41	0	2	2	7	\$20.11
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,188	1,303	115	9.68	12	30	42	7	\$22.25
51-9071	Jewelers and Precious Stone and Metal Workers	*	*	*	*	*	*	*	7	N/A
51-9081	Dental Laboratory Technicians	110	123	13	11.82	1	3	4	7	\$17.28
51-9082	Medical Appliance Technicians	*	*	*	*	*	*	*	7	N/A
51-9083	Ophthalmic Laboratory Technicians	*	*	*	*	*	*	*	7	N/A
51-9111	Packaging and Filling Machine Operators and Tenders	1,358	1,532	174	12.81	17	48	65	7	\$14.74
51-9121	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	1,492	1,663	171	11.46	17	28	45	7	\$13.73
51-9122	Painters, Transportation Equipment	26	27	1	3.85	0	0	0	7	\$22.97
51-9123	Painting, Coating, and Decorating Workers	*	*	*	*	*	*	*	N/A	\$14.28
51-9141	Semiconductor Processors	*	*	*	*	*	*	*	4	N/A
51-9151	Photographic Process Workers and Processing Machine Operators	*	*	*	*	*	*	*	7	N/A

*Employment under 10 and/or unreliable data suppressed, N/A Not Available, Education and Training Codes Page 12

Source: Kentucky Center for Education and Workforce Statistics

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
51-9191	Adhesive Bonding Machine Operators and Tenders	*	*	*	*	*	*	*	7	\$15.85
51-9192	Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	*	*	*	*	*	*	*	N/A	\$16.07
51-9193	Cooling and Freezing Equipment Operators and Tenders	*	*	*	*	*	*	*	7	N/A
51-9194	Etchers and Engravers	*	*	*	*	*	*	*	7	\$14.41
51-9195	Molders, Shapers, and Casters, Except Metal and Plastic	*	*	*	*	*	*	*	7	N/A
51-9196	Paper Goods Machine Setters, Operators, and Tenders	*	*	*	*	*	*	*	7	\$18.29
51-9197	Tire Builders	63	67	4	6.35	0	2	2	7	\$16.89
51-9198	Helpers--Production Workers	1,364	1,463	99	7.26	10	44	54	N/A	\$11.85
51-9199	Production Workers, All Other	648	665	17	2.62	2	13	15	7	\$14.48
53-0000	Transportation and Material Moving Occupations	21,084	24,006	2922	13.86	292	520	812	N/A	\$17.67
53-1000	Supervisors of Transportation and Material Moving Workers	1,169	1,323	154	13.17	15	38	53	N/A	N/A
53-1011	Aircraft Cargo Handling Supervisors	*	*	*	*	*	*	*	7	N/A
53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	570	654	84	14.74	8	18	26	7	\$24.37
53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	*	*	*	*	*	*	*	7	\$27.89
53-2000	Air Transportation Workers	1,185	1,316	131	11.05	13	28	41	N/A	N/A
53-2011	Airline Pilots, Copilots, and Flight Engineers	*	*	*	*	*	*	*	3	N/A
53-2012	Commercial Pilots	*	*	*	*	*	*	*	7	N/A
53-2021	Air Traffic Controllers	63	67	4	6.35	0	2	2	4	N/A
53-2022	Airfield Operations Specialists	*	*	*	*	*	*	*	7	N/A

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Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
53-2031	Flight Attendants	*	*	*	*	*	*	*	7	N/A
53-3000	Motor Vehicle Operators	6,906	7,875	969	14.03	97	114	211	N/A	N/A
53-3021	Bus Drivers, Transit and Intercity	563	631	68	12.08	7	7	14	7	\$15.16
53-3022	Bus Drivers, School or Special Client	578	657	79	13.67	8	8	16	7	\$18.10
53-3031	Driver/Sales Workers	658	732	74	11.25	7	11	18	7	\$11.52
53-3032	Heavy and Tractor-Trailer Truck Drivers	3,073	3,573	500	16.27	50	52	102	5	\$22.08
53-3033	Light Truck or Delivery Services Drivers	1,511	1,688	177	11.71	18	26	44	7	\$15.55
53-3041	Taxi Drivers and Chauffeurs	*	*	*	*	*	*	*	N/A	\$11.43
53-3099	Motor Vehicle Operators, All Other	*	*	*	*	*	*	*	N/A	N/A
53-4000	Rail Transportation Workers	*	*	*	*	*	*	*	N/A	N/A
53-4021	Railroad Brake, Signal, and Switch Operators	*	*	*	*	*	*	*	7	N/A
53-5000	Water Transportation Workers	*	*	*	*	*	*	*	N/A	N/A
53-5011	Sailors and Marine Oilers	42	45	3	7.14	0	1	1	N/A	\$14.82
53-5021	Captains, Mates, and Pilots of Water Vessels	*	*	*	*	*	*	*	5	\$37.62
53-5022	Motorboat Operators	*	*	*	*	*	*	*	5	N/A
53-5031	Ship Engineers	*	*	*	*	*	*	*	5	N/A
53-6000	Other Transportation Workers	447	493	46	10.29	5	20	25	N/A	N/A
53-6011	Bridge and Lock Tenders	*	*	*	*	*	*	*	7	N/A
53-6021	Parking Lot Attendants	84	89	5	5.95	0	5	5	N/A	\$9.30

*Employment under 10 and/or unreliable data suppressed, N/A Not Available, Education and Training Codes Page 12

Source: Kentucky Center for Education and Workforce Statistics

Northern Kentucky LWA

Occupational		Employment		Change		Job Openings			Education	Avg.
		2014	2024	2014	2024	Avg. Annual 2014-2024			Training Req.	Wage
Code	Title	Estimated	Projected	Number	Percent	Growth	Seps	Total	Code	2016
53-6031	Automotive and Watercraft Service Attendants	246	276	30	12.2	3	10	13	N/A	\$10.17
53-6051	Transportation Inspectors	*	*	*	*	*	*	*	7	\$32.91
53-6099	Transportation Workers, All Other	82	90	8	9.76	1	4	5	7	\$14.17
53-7000	Material Moving Workers	11,299	12,915	1616	14.3	162	319	481	N/A	N/A
53-7011	Conveyor Operators and Tenders	170	189	19	11.18	2	5	7	N/A	\$17.95
53-7021	Crane and Tower Operators	*	*	*	*	*	*	*	7	\$33.96
53-7032	Excavating and Loading Machine and Dragline Operators	*	*	*	*	*	*	*	7	\$22.22
53-7033	Loading Machine Operators, Underground Mining	*	*	*	*	*	*	*	N/A	N/A
53-7041	Hoist and Winch Operators	*	*	*	*	*	*	*	N/A	N/A
53-7051	Industrial Truck and Tractor Operators	2,239	2,590	351	15.68	35	56	91	N/A	\$15.33
53-7061	Cleaners of Vehicles and Equipment	338	383	45	13.31	4	12	16	N/A	\$10.86
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	5,880	6,710	830	14.12	83	175	258	N/A	\$14.29
53-7063	Machine Feeders and Offbearers	*	*	*	*	*	*	*	N/A	N/A
53-7064	Packers and Packagers, Hand	2,193	2,491	298	13.59	30	58	88	N/A	\$11.25
53-7072	Pump Operators, Except Wellhead Pumps	*	*	*	*	*	*	*	7	N/A
53-7081	Refuse and Recyclable Material Collectors	66	74	8	12.12	1	2	3	N/A	\$18.58
53-7111	Mine Shuttle Car Operators	*	*	*	*	*	*	*	N/A	N/A
53-7121	Tank Car, Truck, and Ship Loaders	*	*	*	*	*	*	*	N/A	N/A
53-7199	Material Moving Workers, All Other	*	*	*	*	*	*	*	N/A	N/A

*Employment under 10 and/or unreliable data suppressed, N/A Not Available, Education and Training Codes Page 12

Source: Kentucky Center for Education and Workforce Statistics

Appendix B: Cincinnati 5 County Region Report



Department of
Job and Family Services

TO STRENGTHEN OHIO'S FAMILIES WITH SOLUTIONS TO TEMPORARY CHALLENGES

2024 Job Outlook

Cincinnati-Middletown Metropolitan Statistical Area

Brown, Butler, Clermont, Hamilton, and Warren Counties



**November 2017
(revised)**

2024 Job Outlook for Ohio Metropolitan Statistical Areas

The Ohio Department of Job and Family Services' Bureau of Labor Market Information updates employment projections every two years. The projections are widely used for studying long-range economic and employment trends, planning education and training programs, and developing career information. This edition uses employment statistics through 2014 as a foundation to project employment conditions for the 10-year period ending in 2024.

The table below summarizes 2014 employment levels and projected 2024 levels for Ohio's eight metropolitan statistical areas. The difference between those years represents new jobs as a result of industry growth. The number of these new jobs is expected to range from 8,100 in the Canton-Massillon metropolitan statistical area (MSA) to 63,500 in the Columbus metropolitan statistical area. The Columbus MSA is projected to grow at the fastest rate, 6.1 percent, followed by the Cincinnati and Akron MSAs, at 5.7 percent. The Cleveland-Elyria-Mentor MSA is projected to grow 5.2 percent, the Dayton and Youngstown-Warren-Boardman MSAs 5.1 percent, and the Toledo MSA 4.8 percent. The Canton-Massillon MSA is expected to grow 4.5 percent.

Comparison of Ohio Metropolitan Statistical Areas: 2014-2024

Ohio Metropolitan Statistical Areas	Employment 2014	Projected Employment 2024	Projected Change 2014-2024	
			Number	Percent
Akron MSA	336,900	356,200	19,300	5.7%
Canton-Massillon MSA	179,300	187,400	8,100	4.5%
Cincinnati-Middletown MSA	853,700	902,180	48,480	5.7%
Cleveland-Elyria-Mentor MSA	1,063,700	1,119,100	55,400	5.2%
Columbus MSA	1,038,900	1,102,400	63,500	6.1%
Dayton MSA	381,700	401,300	19,600	5.1%
Toledo MSA	320,900	336,300	15,400	4.8%
Youngstown-Warren-Boardman MSA	181,000	190,300	9,300	5.1%

Each 2024 Job Outlook report for Ohio's metropolitan statistical areas contains a summary of the employment outlook by industry and occupational group. The occupations that are expected to grow the fastest are ranked, as well as occupations expected to provide the most annual openings. Annual openings are the result of both industry growth and vacancies resulting from anticipated retirements.

Technical Notes

Projections of employment demand were made primarily at the four-digit industry level and then aggregated to the three-digit level, based on the North American Industry Classification System (NAICS). Shift-share and time-series techniques were used to compare Ohio's regional industry employment to statewide industry employment over the past decade. State and local area projections are partially dependent on the outlook for specific industries nationally.

Regional staffing patterns were estimated using the Local Employment and Wage Information System, which creates wage estimates for customized geographic regions using data from the Occupational Employment Statistics (OES) surveys. Wage estimates are based on Ohio's OES surveys. Wage estimates produced for 2015 were statistically "aged" using the Employment Cost Index for June 2016.

Ohio industry staffing patterns were adjusted for expected technological change and other factors from national data provided by the U.S. Bureau of Labor Statistics (BLS). Net annual replacement needs were computed from national rates calculated by BLS, as explained at its website http://stats.bls.gov/emp/ep_replacements.htm. Although these rates have been found to provide reliable estimates of Ohio net replacement needs for specific occupations, many additional openings result from turnover. Inclusion of education and training levels is made possible by the classification of the Standard Occupational Classification-based occupations into 11 distinct categories by the staff at the BLS Office of Occupational Statistics and Employment Projections.

Because it is difficult to estimate future needs with certainty, the long-term job outlook data are updated every other year. More information about projected local job growth in Ohio is available through reports published at <http://ohiolmi.com/proj/OhioJobOutlook.htm>. For more information, contact the Ohio Bureau of Labor Market Information at (614) 752-9494 or ContactLMI@jfs.ohio.gov.

Cincinnati-Middletown Metropolitan Statistical Area

Industry Employment Projection Report: 2014-2024

NAICS CODE	Description	Employment*		Projected Change in Employment	
		2014 Annual	2024 Projected	2014-2024	Percent
	TOTAL	853,700	902,180	48,480	5.7%
	Goods Producing	123,000	122,600	-400	-0.3%
	Natural Resources, Including Agriculture and Mining	5,400	4,900	-500	-9.3%
	Agriculture, Forestry, Fishing and Hunting	5,100	4,600	-500	-9.8%
	Construction	32,200	36,100	3,900	12.1%
236	Construction of buildings	7,300	8,400	1,100	15.1%
	Manufacturing	85,400	81,700	-3,700	-4.3%
311	Food manufacturing	8,100	8,000	-100	-1.2%
312	Beverage and tobacco product manufacturing	2,100	2,000	-100	-4.8%
313	Textile mills	700	500	-200	-28.6%
314	Textile product mills	600	300	-300	-50.0%
321	Wood product manufacturing	800	800	0	0.0%
322	Paper manufacturing	3,500	3,100	-400	-11.4%
324	Petroleum and coal product manufacturing	700	700	0	0.0%
325	Chemical manufacturing	9,400	9,700	300	3.2%
326	Plastics and rubber products manufacturing	3,600	3,200	-400	-11.1%
327	Nonmetallic mineral product manufacturing	1,600	1,500	-100	-6.3%
331	Primary metal manufacturing	4,200	4,000	-200	-4.8%
332	Fabricated metal product manufacturing	11,400	11,400	0	0.0%
333	Machinery manufacturing	7,600	7,100	-500	-6.6%
335	Electrical equipment, appliance, and component manufacturing	3,100	2,900	-200	-6.5%
336	Transportation equipment manufacturing	16,600	16,100	-500	-3.0%
337	Furniture and related product manufacturing	1,500	1,500	0	0.0%
339	Miscellaneous manufacturing	2,500	2,200	-300	-12.0%
	Service-Providing	682,300	728,200	45,900	6.7%
	Trade and Transportation and Utilities	146,800	151,900	5,100	3.5%
	Utilities	2,100	1,700	-400	-19.0%
221	Utilities	2,100	1,700	-400	-19.0%
	Wholesale Trade	40,500	42,300	1,800	4.4%
423	Merchant wholesalers, durable goods	21,200	21,800	600	2.8%
424	Merchant wholesalers, nondurable goods	13,500	13,600	100	0.7%
425	Wholesale electronic markets and agents and brokers	5,800	7,000	1,200	20.7%
	Retail Trade	82,300	85,300	3,000	3.6%
441	Motor vehicle and parts dealers	10,800	11,500	700	6.5%
443	Electronics and appliance stores	2,900	2,600	-300	-10.3%
444	Building material and garden supply stores	6,200	6,300	100	1.6%
446	Health and personal care stores	4,800	4,900	100	2.1%
447	Gasoline stations	4,100	4,200	100	2.4%
448	Clothing and clothing accessories stores	6,600	6,600	0	0.0%
451	Sporting goods, hobby, book, and music stores	3,100	3,200	100	3.2%
452	General merchandise stores	15,900	15,400	-500	-3.1%
453	Miscellaneous store retailers	5,000	5,000	0	0.0%
454	Nonstore retailers	5,400	7,400	2,000	37.0%
	Transportation and Warehousing	21,800	22,600	800	3.7%
481	Air transportation	1,000	1,000	0	0.0%
485	Transit and ground passenger transportation	3,100	3,300	200	6.5%
488	Support activities for transportation	2,800	2,900	100	3.6%
492	Couriers and messengers	3,200	3,100	-100	-3.1%
493	Warehousing and storage	4,500	4,700	200	4.4%

Cincinnati-Middletown Metropolitan Statistical Area

Industry Employment Projection Report: 2014-2024

NAICS CODE	Description	Employment*		Projected Change in Employment	
		2014 Annual	2024 Projected	2014-2024	Percent
	Information	11,500	10,800	-700	-6.1%
511	Publishing industries (except internet)	4,200	3,900	-300	-7.1%
512	Motion picture and sound recording industries	1,000	1,100	100	10.0%
515	Broadcasting (except internet)	1,200	1,100	-100	-8.3%
517	Telecommunications	4,200	3,800	-400	-9.5%
	Financial Activities	49,900	52,100	2,200	4.4%
	Finance and Insurance	40,200	41,900	1,700	4.2%
522	Credit intermediation and related activities	16,500	16,600	100	0.6%
523	Securities, commodity contracts, investments	3,600	4,500	900	25.0%
524	Insurance carriers and related activities	20,000	20,700	700	3.5%
	Real Estate and Rental and Leasing	9,700	10,200	500	5.2%
531	Real estate	6,600	7,100	500	7.6%
	Professional and Business Services	133,100	143,900	10,800	8.1%
	Professional and Technical Services				
5411	Legal services	5,500	5,500	0	0.0%
5412	Accounting and bookkeeping services	5,200	5,500	300	5.8%
5413	Architectural, engineering, and related services	8,900	9,600	700	7.9%
5415	Computer systems design and related services	8,900	10,900	2,000	22.5%
5416	Management, scientific, and technical consulting services	5,900	7,400	1,500	25.4%
5417	Scientific research and development services	2,900	3,000	100	3.4%
5418	Advertising, public relations, and related services	3,600	3,700	100	2.8%
5419	Other professional, scientific, and technical services	4,400	4,900	500	11.4%
	Management of Companies and Enterprises				
	Administrative and Waste Services	49,700	53,900	4,200	8.5%
5611	Office administrative services	3,200	3,600	400	12.5%
5612	Facilities support services	700	800	100	14.3%
5613	Employment services	21,100	23,700	2,600	12.3%
5614	Business support services	5,500	5,900	400	7.3%
5616	Investigation and security services	3,700	3,800	100	2.7%
5617	Services to buildings and dwellings	11,300	11,600	300	2.7%
5619	Other support services	1,800	1,900	100	5.6%
562	Waste management and remediation service	2,100	2,200	100	4.8%
	Education and Health Services	178,300	203,100	24,800	13.9%
	Educational Services	59,200	62,400	3,200	5.4%
611	Educational services	59,200	62,400	3,200	5.4%
	Health Care and Social Assistance	119,100	140,700	21,600	18.1%
621	Ambulatory health care services	37,800	50,500	12,700	33.6%
622	Hospitals	41,900	45,100	3,200	7.6%
623	Nursing and residential care facilities	24,400	29,300	4,900	20.1%
624	Social assistance	15,000	15,900	900	6.0%
	Leisure and Hospitality	87,700	92,800	5,100	5.8%
	Arts, Entertainment, and Recreation				
711	Performing arts and spectator sports	3,400	3,500	100	2.9%
713	Amusements, gambling, and recreation industries	12,200	13,100	900	7.4%
	Accommodation and Food Services	70,800	74,900	4,100	5.8%
721	Accommodation	4,700	4,900	200	4.3%
722	Food services and drinking places	66,100	70,000	3,900	5.9%
	Other Services	35,300	35,100	-200	-0.6%
811	Repair and maintenance	6,400	6,900	500	7.8%
812	Personal and laundry services	9,300	9,700	400	4.3%
813	Religious, grantmaking, civic, professional, and similar organizations	15,100	13,600	-1,500	-9.9%
814	Private households	4,500	4,900	400	8.9%

Cincinnati-Middletown Metropolitan Statistical Area

Industry Employment Projection Report: 2014-2024

NAICS CODE	Description	Employment*		Projected Change in Employment	
		2014 Annual	2024 Projected	2014-2024	Percent
	Government	39,700	38,500	-1,200	-3.0%
	Federal Government	9,700	7,600	-2,100	-21.6%
	Federal government, except postal service	5,800	5,000	-800	-13.8%
	State Government	2,700	2,600	-100	-3.7%
	Local Government	27,400	28,200	800	2.9%
	Self Employed and Unpaid Family Workers	48,400	51,300	2,900	6.0%

*Selected industries with 500 or more employees.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information November 2017.

Cincinnati-Middletown Metropolitan Statistical Area
Occupational Employment Projections by Major Occupational Group, 2014-2024
Breakdown of Annual Openings

SOC Code	Occupational Title	Employment		Change in Employment		Annual Openings		
		2014 Annual	2024 Projected	2014 - 2024	Percent	Growth	Replacements	Total
00-0000	Total, All Occupations	853,700	902,200	48,500	5.7%	5,812	20,148	25,960
11-0000	Management Occupations	55,600	57,800	2,200	4.0%	279	1,243	1,522
13-0000	Business & Financial Operations Occupations	49,500	52,900	3,400	6.9%	370	1,019	1,389
15-0000	Computer & Mathematical Occupations	25,000	28,300	3,300	13.2%	332	358	690
17-0000	Architecture & Engineering Occupations	17,000	17,200	200	1.2%	58	425	483
19-0000	Life, Physical, & Social Science Occupations	7,000	7,600	600	8.6%	60	192	252
21-0000	Community & Social Service Occupations	13,700	14,200	500	3.6%	84	300	384
23-0000	Legal Occupations	6,000	6,300	300	5.0%	31	102	133
25-0000	Education, Training, & Library Occupations	45,200	48,600	3,400	7.5%	338	964	1,302
27-0000	Arts, Design, Entertainment, Sports, & Media Occupations	15,000	15,300	300	2.0%	51	364	415
29-0000	Healthcare Practitioners & Technical Occupations	54,600	63,200	8,600	15.8%	862	1,226	2,088
31-0000	Healthcare Support Occupations	28,500	35,400	6,900	24.2%	691	631	1,322
33-0000	Protective Service Occupations	16,400	17,100	700	4.3%	68	388	456
35-0000	Food Preparation & Serving Related Occupations	75,000	79,700	4,700	6.3%	514	2,804	3,318
37-0000	Building & Grounds Cleaning & Maintenance Occupations	28,800	30,200	1,400	4.9%	140	578	718
39-0000	Personal Care & Service Occupations	26,400	28,600	2,200	8.3%	218	638	856
41-0000	Sales & Related Occupations	83,800	86,300	2,500	3.0%	268	2,376	2,644
43-0000	Office & Administrative Support Occupations	129,700	130,700	1,000	0.8%	503	2,665	3,168
45-0000	Farming, Fishing, & Forestry Occupations	800	700	-100	-12.5%	1	20	21
47-0000	Construction & Extraction Occupations	31,400	34,300	2,900	9.2%	296	480	776
49-0000	Installation, Maintenance, & Repair Occupations	31,300	33,000	1,700	5.4%	204	725	929
51-0000	Production Occupations	58,600	57,300	-1,300	-2.2%	132	1,346	1,478
53-0000	Transportation & Material Moving Occupations	54,400	57,400	3,000	5.5%	314	1,305	1,619

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, June 2017.

**Cincinnati-Middletown Metropolitan Statistical Area
Fastest Growing Occupations*
2014-2024**

SOC Code	Occupational Title	Percent Change	Total Annual Openings	Median Wage June 2016***
31-2021	Physical Therapist Assistants	44.4%	40	\$26.15
31-1011	Home Health Aides	39.1%	450	\$10.92
29-1171	Nurse Practitioners	34.3%	49	\$48.29
29-1123	Physical Therapists	32.5%	71	\$41.58
29-1122	Occupational Therapists	29.3%	35	\$39.63
29-1127	Speech-Language Pathologists	27.0%	48	\$35.92
31-9011	Massage Therapists	26.9%	29	\$17.47
15-1134	Web Developers	26.8%	37	\$30.91
53-3041	Taxi Drivers and Chauffeurs	25.8%	38	\$10.09
29-2041	Emergency Medical Technicians and Paramedics	22.3%	51	\$15.66
31-9092	Medical Assistants	22.1%	140	\$14.82
25-9099	Education, Training, and Library Workers, All Other	20.5%	30	\$15.13
19-3031	Clinical, Counseling, and School Psychologists	20.4%	34	\$35.46
13-1161	Market Research Analysts and Marketing Specialists	19.9%	144	\$28.82
15-1121	Computer Systems Analysts	19.8%	175	\$42.52
43-6013	Medical Secretaries	18.9%	167	\$15.55
25-1071	Health Specialties Teachers, Postsecondary	18.2%	97	\$141,727 ††
29-2061	Licensed Practical and Licensed Vocational Nurses	18.2%	254	\$21.27
31-1014	Nursing Assistants	18.2%	467	\$12.30
35-3041	Food Servers, Nonrestaurant	18.1%	104	\$9.70
11-3021	Computer and Information Systems Managers	17.5%	69	\$58.86
29-2021	Dental Hygienists	17.0%	49	\$35.05
31-9091	Dental Assistants	17.0%	59	\$17.77
31-9097	Phlebotomists	16.6%	21	\$16.35
29-1021	Dentists, General	16.1%	20	\$73.50
29-2099	Health Technologists and Technicians, All Other	15.8%	18	\$20.73
51-4011	Computer-Controlled Machine Tool Operators, Metal and	15.7%	89	\$19.69
15-1132	Software Developers, Applications	15.6%	178	\$40.65
21-1023	Mental Health and Substance Abuse Social Workers	15.5%	30	\$17.45
49-9041	Industrial Machinery Mechanics	15.5%	132	\$24.58

*Occupations with at least 500 employment

*** 2015 wages statistically aged to June 2016

†† Annual earnings, typically 9 1/2 months school year for teachers.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, June 2017.

**Cincinnati-Middletown Metropolitan Statistical Area
Occupations with the Most Annual Openings
2014-2024**

SOC Code	Occupational Title	Total Annual Openings	Median Wage June 2016***
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	928	\$9.14
41-2031	Retail Salespersons	837	\$10.60
35-3031	Waiters and Waitresses	759	\$9.15
29-1141	Registered Nurses	728	\$30.66
41-2011	Cashiers	698	\$9.40
43-4051	Customer Service Representatives	477	\$15.18
31-1014	Nursing Assistants	467	\$12.30
31-1011	Home Health Aides	450	\$10.92
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	438	\$12.95
43-5081	Stock Clerks and Order Fillers	429	\$11.91
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	313	\$11.22
43-9061	Office Clerks, General	313	\$14.79
11-1021	General and Operations Managers	298	\$46.05
35-2014	Cooks, Restaurant	283	\$10.95
13-2011	Accountants and Auditors	260	\$30.37
29-2061	Licensed Practical and Licensed Vocational Nurses	254	\$21.27
49-9071	Maintenance and Repair Workers, General	241	\$18.98
35-3022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	227	\$9.45
39-9011	Childcare Workers	220	\$10.63
41-3099	Sales Representatives, Services, All Other	209	\$25.05
37-2012	Maids and Housekeeping Cleaners	205	\$10.19
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	200	\$14.46
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	196	\$30.55
25-2021	Elementary School Teachers, Except Special Education	192	\$58,764 ††
53-3032	Heavy and Tractor-Trailer Truck Drivers	185	\$20.86
15-1132	Software Developers, Applications	178	\$40.65
39-5012	Hairdressers, Hairstylists, and Cosmetologists	177	\$10.43
15-1121	Computer Systems Analysts	175	\$42.52
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	175	\$9.18
43-6013	Medical Secretaries	167	\$15.55

†† Annual earnings, typically 9 1/2 months school year for teachers.

*** 2015 wages statistically aged to June 2016

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, June 2017.

**Cincinnati-Middletown Metropolitan Statistical Area
Occupational Employment* Projections Report, 2014-2024**

Code	Occupational Title**	Employment*		Change in Employment		Annual Openings,			Median Wage, June 2016***
		2014 Annual	2024 Projected	2014 - 2024	Percent	Growth	Replacements	Total	
00-0000	Total, All Occupations	853,700	902,200	48,500	5.7%	5,812	20,148	25,960	
11-0000	Management Occupations	55,600	57,800	2,200	4.0%	279	1,243	1,522	
11-1011	Chief Executives	1,620	1,540	-80	-4.9%	0	28	28	\$87.12 †
11-1021	General and Operations Managers	9,930	10,390	460	4.6%	46	252	298	\$46.05
11-1031	Legislators	270	260	-10	-3.7%	0	6	6	\$19,382 ††
11-2011	Advertising and Promotions Managers	190	190	0	0.0%	0	6	6	\$48.51
11-2021	Marketing Managers	1,260	1,390	130	10.3%	13	30	43	\$57.80
11-2022	Sales Managers	2,690	2,760	70	2.6%	8	64	72	\$58.12
11-2031	Public Relations Managers	270	280	10	3.7%	1	9	10	\$44.36
11-3011	Administrative Services Managers	2,070	2,190	120	5.8%	12	39	51	\$37.47
11-3021	Computer and Information Systems Managers	2,360	2,780	420	17.8%	41	28	69	\$58.86
11-3031	Financial Managers	5,070	5,320	250	4.9%	25	120	145	\$56.54
11-3051	Industrial Production Managers	1,860	1,850	-10	-0.5%	0	53	53	\$46.77
11-3061	Purchasing Managers	510	510	0	0.0%	0	12	12	\$54.38
11-3071	Transportation, Storage, and Distribution Managers	850	890	40	4.7%	4	19	23	\$40.53
11-3111	Compensation and Benefits Managers	200	210	10	5.0%	1	6	7	\$54.95
11-3121	Human Resources Managers	890	980	90	10.1%	9	26	35	\$52.98
11-3131	Training and Development Managers	190	200	10	5.3%	0	6	6	\$53.61
11-9013	Farmers, Ranchers, and Other Agricultural Managers	4,280	3,800	-480	-11.2%	0	73	73	\$27.83 †††
11-9021	Construction Managers	2,460	2,560	100	4.1%	10	34	44	\$42.17
11-9031	Education Admin., Pre & Child Care Center/Prog.	440	460	20	4.5%	2	13	15	\$17.94
11-9032	Education Admin., Elem. & Secondary School	1,060	1,120	60	5.7%	6	31	37	\$87.931 ††
11-9033	Education Administrators, Postsecondary	680	700	20	2.9%	3	20	23	\$42.55
11-9039	Education Administrators, All Other	110	120	10	9.1%	1	3	4	\$33.77
11-9041	Engineering Managers	1,330	1,350	20	1.5%	2	41	43	\$60.58
11-9051	Food Service Managers	2,710	2,820	110	4.1%	11	54	65	\$25.03
11-9081	Lodging Managers	280	290	10	3.6%	1	5	6	\$17.97
11-9111	Medical and Health Services Managers	2,720	3,090	370	13.6%	37	69	106	\$46.22
11-9121	Natural Sciences Managers	300	310	10	3.3%	1	6	7	\$58.47
11-9141	Property, Real Estate & Community Assn Mgrs	1,880	2,010	130	6.9%	13	33	46	\$25.08
11-9151	Social and Community Service Managers	700	750	50	7.1%	4	19	23	\$30.71
11-9199	Managers, All Other	6,220	6,490	270	4.3%	27	137	164	\$50.25
13-0000	Business & Financial Operations Occupations	49,500	52,900	3,400	6.9%	370	1,019	1,389	
13-1022	Wholesale and Retail Buyers, Except Farm Products	820	870	50	6.1%	5	26	31	\$25.90
13-1023	Purchasing Agents, ex. Whole., Retail, & Farm	1,840	1,850	10	0.5%	2	50	52	\$30.64
13-1031	Claims Adjusters, Examiners, and Investigators	2,190	2,220	30	1.4%	3	54	57	\$30.77
13-1041	Compl. Off., ex. Agric. Con, Hlth/Safety, & Trans.	1,230	1,280	50	4.1%	5	17	22	\$31.23
13-1051	Cost Estimators	1,660	1,810	150	9.0%	15	47	62	\$29.60
13-1071	Human Resource Specialists	4,410	4,430	20	0.5%	3	107	110	\$28.26
13-1075	Labor Relations Specialists	110	100	-10	-9.1%	0	3	3	\$10.49
13-1081	Logisticians	940	1,020	80	8.5%	8	13	21	\$34.77
13-1111	Management Analysts	4,760	5,300	540	11.3%	54	66	120	\$35.35
13-1121	Meeting and Convention Planners	410	440	30	7.3%	3	5	8	\$19.28
13-1131	Fundraisers	250	270	20	8.0%	2	3	5	\$24.45
13-1141	Compensation, Benefits, and Job Analysis Specialists	530	560	30	5.7%	3	13	16	\$28.67
13-1151	Training and Development Specialists	1,120	1,190	70	6.3%	8	27	35	\$29.17
13-1161	Market Research Analysts and Marketing Specialists	4,530	5,430	900	19.9%	90	54	144	\$28.82
13-1199	Business Operations Specialists, All Other	5,060	5,240	180	3.6%	18	60	78	\$30.03
13-2011	Accountants and Auditors	7,500	8,090	590	7.9%	60	200	260	\$30.37
13-2021	Appraisers and Assessors of Real Estate	370	420	50	13.5%	5	6	11	\$23.53 †††
13-2031	Budget Analysts	200	200	0	0.0%	0	5	5	\$34.38
13-2053	Insurance Underwriters	1,290	1,080	-210	-16.3%	0	24	24	\$29.74
13-2071	Loan Counselors	230	250	20	8.7%	2	4	6	\$19.71
13-2072	Loan Officers	2,190	2,340	150	6.8%	15	36	51	\$33.55
13-2081	Tax Examiners, Collectors, and Revenue Agents	420	350	-70	-16.7%	0	17	17	\$24.30
13-2082	Tax Preparers	500	500	0	0.0%	0	12	12	\$14.01
13-2099	Financial Specialists, All Other	970	1,020	50	5.2%	4	10	14	\$31.18
15-0000	Computer & Mathematical Occupations	25,000	28,300	3,300	13.2%	332	358	690	
15-1121	Computer Systems Analysts	5,370	6,430	1,060	19.7%	106	69	175	\$42.52
15-1122	Information Security Analysts	320	390	70	21.9%	7	4	11	\$37.92
15-1131	Computer Programmers	820	740	-80	-9.8%	0	20	20	\$31.81
15-1132	Software Developers, Applications	5,960	6,890	930	15.6%	93	85	178	\$40.65
15-1133	Software Developers, Systems Software	1,300	1,360	60	4.6%	6	19	25	\$44.26
15-1134	Web Developers	950	1,200	250	26.3%	25	12	37	\$30.91
15-1141	Database Administrators	1,000	1,110	110	11.0%	11	22	33	\$37.88
15-1142	Network and Comp. Systems architects and Admins	2,740	2,910	170	6.2%	17	35	52	\$36.93

Cincinnati-Middletown Metropolitan Statistical Area (continued)
Occupational Employment* Projections Report, 2014-2024

Code	Occupational Title**	Employment*		Change in Employment		Annual Openings,			Median Wage, June 2016***
		2014 Annual	2024 Projected	2014 - 2024	Percent	Growth	Replacements	Total	
15-1143	Computer Network Architects	550	580	30	5.5%	3	7	10	\$48.31
15-1151	Computer User Support Specialists	2,860	3,220	360	12.6%	37	37	74	\$23.01
15-1152	Computer Network Support Specialists	1,480	1,510	30	2.0%	3	19	22	\$28.53
15-1199	Computer Occupations, All Other	830	870	40	4.8%	3	11	14	\$35.72
15-2011	Actuaries	230	260	30	13.0%	3	7	10	\$46.25
15-2031	Operations Research Analysts	390	500	110	28.2%	10	7	17	\$42.15
15-2041	Statisticians	220	290	70	31.8%	7	4	11	\$40.61
17-0000	Architecture & Engineering Occupations	17,000	17,200	200	1.2%	58	425	483	
17-1011	Architects, Except Landscape and Naval	790	850	60	7.6%	6	13	19	\$38.51
17-1022	Surveyors	150	150	0	0.0%	0	5	5	\$30.05
17-2041	Chemical Engineers	270	280	10	3.7%	1	7	8	\$40.17
17-2051	Civil Engineers	1,620	1,760	140	8.6%	15	48	63	\$36.52
17-2071	Electrical Engineers	860	890	30	3.5%	4	19	23	\$36.74
17-2072	Electronics Engineers, Except Computer	620	600	-20	-3.2%	0	14	14	\$46.63
17-2081	Environmental Engineers	170	190	20	11.8%	2	5	7	\$46.64
17-2112	Industrial Engineers	2,800	2,890	90	3.2%	9	82	91	\$42.34
17-2131	Materials Engineers	150	150	0	0.0%	0	5	5	\$41.79
17-2141	Mechanical Engineers	1,620	1,720	100	6.2%	10	51	61	\$36.77
17-2199	Engineers, All Other	1,270	1,320	50	3.9%	5	25	30	\$36.31
17-3011	Architectural and Civil Drafters	730	700	-30	-4.1%	0	9	9	\$25.32
17-3012	Electrical and Electronics Drafters	130	140	10	7.7%	1	2	3	\$25.45
17-3013	Mechanical Drafters	430	400	-30	-7.0%	0	5	5	\$25.73
17-3019	Drafters, All Other	110	110	0	0.0%	0	1	1	\$25.80
17-3022	Civil Engineering Technicians	360	380	20	5.6%	2	9	11	\$23.42
17-3023	Electrical and Electronic Engineering Technicians	630	620	-10	-1.6%	0	16	16	\$30.28
17-3024	Electro-Mechanical Technicians	120	110	-10	-8.3%	0	3	3	\$31.66
17-3026	Industrial Engineering Technicians	470	470	0	0.0%	0	12	12	\$28.29
17-3027	Mechanical Engineering Technicians	270	270	0	0.0%	0	7	7	\$22.22
17-3029	Engineering Technicians, Except Drafters, All Other	910	910	0	0.0%	0	22	22	\$30.69
17-3031	Surveying and Mapping Technicians	160	150	-10	-6.3%	0	2	2	\$18.98
19-0000	Life, Physical, & Social Science Occupations	7,000	7,600	600	8.6%	60	192	252	
19-1012	Food Scientists and Technologists	270	280	10	3.7%	1	9	10	\$25.82
19-1022	Microbiologists	120	120	0	0.0%	0	3	3	\$30.12
19-1042	Medical Scientists, Except Epidemiologists	960	1,050	90	9.4%	9	30	39	\$27.90
19-2031	Chemists	800	800	0	0.0%	0	18	18	\$31.42
19-2041	Environmental Scientists/Specialists, inc. Health	420	480	60	14.3%	5	13	18	\$32.15
19-2099	Physical Scientists, All Other	130	130	0	0.0%	0	1	1	\$48.69
19-3022	Survey Researchers	150	180	30	20.0%	3	2	5	\$23.43
19-3031	Clinical, Counseling, and School Psychologists	810	980	170	21.0%	17	17	34	\$35.46
19-4021	Biological Technicians	1,160	1,300	140	12.1%	14	32	46	\$21.21
19-4031	Chemical Technicians	870	890	20	2.3%	1	26	27	\$21.40
19-4091	Environ. Science & Protection Tech., inc. Health	220	240	20	9.1%	2	9	11	\$19.09
19-4099	Life, Physical, & Social Science Tech., All Other	170	200	30	17.6%	2	7	9	\$21.31
21-0000	Community & Social Service Occupations	13,700	14,200	500	3.6%	84	300	384	
21-1011	Substance Abuse & Behavioral Dis. Counselors	340	420	80	23.5%	8	7	15	\$18.95
21-1012	Educational, Vocational, and School Counselors	1,280	1,370	90	7.0%	9	27	36	\$26.56
21-1014	Mental Health Counselors	380	430	50	13.2%	4	8	12	\$20.55
21-1015	Rehabilitation Counselors	570	580	10	1.8%	1	12	13	\$17.46
21-1019	Counselors, All Other	320	370	50	15.6%	6	7	13	\$20.34
21-1021	Child, Family, and School Social Workers	1,320	1,400	80	6.1%	9	32	41	\$19.15
21-1022	Medical and Public Health Social Workers	1,010	1,140	130	12.9%	13	24	37	\$26.74
21-1023	Mental Health and Substance Abuse Social Workers	740	860	120	16.2%	12	18	30	\$17.45
21-1029	Social Workers, All Other	460	480	20	4.3%	2	11	13	\$21.18
21-1091	Health Educators	230	260	30	13.0%	3	4	7	\$29.97
21-1092	Probation Officers & Correct. Treatment Spec.	300	310	10	3.3%	1	6	7	\$22.39
21-1093	Social and Human Service Assistants	1,520	1,650	130	8.6%	14	30	44	\$15.26
21-1094	Community Health Workers	140	150	10	7.1%	1	3	4	\$19.46
21-1099	Community and Social Service Specialists, All Other	380	400	20	5.3%	2	8	10	\$17.03
21-2011	Clergy	3,560	3,300	-260	-7.3%	0	76	76	\$22.78
23-0000	Legal Occupations	6,000	6,300	300	5.0%	31	102	133	
23-1011	Lawyers	3,920	4,120	200	5.1%	20	57	77	\$49.51
23-2011	Paralegals and Legal Assistants	1,360	1,460	100	7.4%	10	30	40	\$20.08
23-2093	Title Examiners, Abstractors, and Searchers	310	300	-10	-3.2%	0	7	7	\$20.69
25-0000	Education, Training, & Library Occupations	45,200	48,600	3,400	7.5%	338	964	1,302	
25-1021	Computer Science Teachers, Postsecondary	310	320	10	3.2%	1	5	6	\$80.975 ††
25-1022	Mathematical Science Teachers, Postsecondary	270	290	20	7.4%	3	5	8	\$71.658 ††

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Code	Occupational Title**	Employment*		Change in Employment		Annual Openings,			Median Wage, June 2016***
		2014 Annual	2024 Projected	2014 - 2024	Percent	Growth	Replacements	Total	
25-1042	Biological Science Teachers, Postsecondary	200	220	20	10.0%	2	4	6	\$72,260 ††
25-1052	Chemistry Teachers, Postsecondary	120	130	10	8.3%	1	2	3	\$72,892 ††
25-1066	Psychology Teachers, Postsecondary	210	230	20	9.5%	2	4	6	\$85,073 ††
25-1071	Health Specialties Teachers, Postsecondary	2,690	3,180	490	18.2%	49	48	97	\$141,727 ††
25-1072	Nursing Instructors and Teachers, Postsecondary	650	740	90	13.8%	10	11	21	\$70,772 ††
25-1081	Education Teachers, Postsecondary	260	270	10	3.8%	1	4	5	\$70,721 ††
25-1113	Social Work Teachers, Postsecondary	100	110	10	10.0%	1	2	3	\$61,791 ††
25-1121	Art, Drama, and Music Teachers, Postsecondary	620	650	30	4.8%	3	11	14	\$62,902 ††
25-1122	Communications Teachers, Postsecondary	210	220	10	4.8%	1	4	5	\$56,776 ††
25-1123	English Language/Literature Teachers, Postsecondary	300	310	10	3.3%	1	5	6	\$60,517 ††
25-1124	Foreign Language/Literature Teachers, Postsecondary	160	160	0	0.0%	1	3	4	\$62,270 ††††
25-1194	Vocational Education Teachers, Postsecondary	730	760	30	4.1%	3	13	16	\$43,770 ††
25-2011	Preschool Teachers, Except Special Education	3,040	3,170	130	4.3%	14	89	103	\$11.62
25-2012	Kindergarten Teachers, Except Special Education	900	940	40	4.4%	4	26	30	\$55,991 ††
25-2021	Elementary School Teachers, ex.Special Ed.	7,110	7,470	360	5.1%	35	157	192	\$58,764 ††
25-2022	Middle School Teachers, ex. Special & Voc. Ed.	4,030	4,250	220	5.5%	21	89	110	\$58,397 ††
25-2031	Secondary Sch. Teachers, ex. Spec. & Voc. Ed.	4,200	4,430	230	5.5%	23	100	123	\$58,795 ††
25-2032	Vocational Education Teachers, Secondary School	540	540	0	0.0%	0	13	13	\$67,377 ††
25-2051	Special Education Teachers, Preschool	130	150	20	15.4%	2	2	4	\$51,415 ††
25-2052	Special Education Teachers, Kindergarten and Elementary School	1,270	1,360	90	7.1%	8	24	32	\$55,105 ††
25-2053	Special Education Teachers, Middle School	780	830	50	6.4%	5	15	20	\$55,706 ††
25-2054	Special Education Teachers, Secondary School	740	790	50	6.8%	6	14	20	\$55,624 ††
25-3021	Self-Enrichment Education Teachers	1,550	1,770	220	14.2%	22	29	51	\$13.61
25-4021	Librarians	580	580	0	0.0%	0	11	11	\$27.34
25-4031	Library Technicians	300	310	10	3.3%	1	14	15	\$15.30
25-9031	Instructional Coordinators	320	340	20	6.3%	2	3	5	\$30.85
25-9041	Teacher Assistants	4,960	5,280	320	6.5%	32	119	151	\$27,991 ††
25-9099	Education, Training, and Library Workers, All Other	1,000	1,200	200	20.0%	20	10	30	\$15.13
27-0000	Arts, Design, Entertainment, Sports, & Media Occupations	15,000	15,300	300	2.0%	51	364	415	
27-1011	Art Directors	770	800	30	3.9%	3	14	17	\$37.57
27-1013	Fine Artists, inc. Painters, Sculptors & Illustrators	760	790	30	3.9%	2	14	16	\$9.15
27-1014	Multi-Media Artists and Animators	180	180	0	0.0%	0	3	3	\$24.24
27-1021	Commercial and Industrial Designers	470	460	-10	-2.1%	0	11	11	\$28.64
27-1023	Floral Designers	180	170	-10	-5.6%	0	4	4	\$10.86
27-1024	Graphic Designers	1,760	1,790	30	1.7%	3	42	45	\$23.15
27-1025	Interior Designers	480	510	30	6.3%	3	11	14	\$23.16
27-1026	Merchandise Displayers and Window Trimmers	840	870	30	3.6%	3	20	23	\$14.54
27-1029	Designers, All Other	110	120	10	9.1%	0	3	3	\$30.22
27-2011	Actors	150	150	0	0.0%	0	6	6	\$10.83
27-2012	Producers and Directors	550	570	20	3.6%	3	18	21	\$23.62
27-2022	Coaches and Scouts	1,570	1,620	50	3.2%	5	53	58	\$23,516 ††
27-2023	Umpires, Referees, and Other Sports Officials	190	200	10	5.3%	1	6	7	\$19,296 ††
27-2041	Music Directors and Composers	320	300	-20	-6.3%	0	9	9	\$30.35
27-2099	Entertainers and Performers, Sports and Related Workers, All Other	130	130	0	0.0%	0	4	4	\$17.94
27-3011	Radio and Television Announcers	160	130	-30	-18.8%	0	5	5	\$17.33
27-3022	Reporters and Correspondents	180	180	0	0.0%	0	6	6	\$18.87
27-3031	Public Relations Specialists	1,070	1,110	40	3.7%	4	13	17	\$24.54
27-3041	Editors	530	510	-20	-3.8%	0	19	19	\$19.22
27-3042	Technical Writers	300	330	30	10.0%	3	7	10	\$29.64
27-3043	Writers and Authors	870	920	50	5.7%	5	15	20	\$24.20
27-3091	Interpreters and Translators	170	210	40	23.5%	4	3	7	\$22.29
27-3099	Media and Communication Workers, All Other	230	250	20	8.7%	3	4	7	\$22.62
27-4011	Audio and Video Equipment Technicians	210	210	0	0.0%	0	4	4	\$17.47
27-4012	Broadcast Technicians	160	140	-20	-12.5%	0	3	3	\$17.47
27-4021	Photographers	750	800	50	6.7%	5	18	23	\$12.86
27-4032	Film and Video Editors	120	140	20	16.7%	2	1	3	\$20.61
29-0000	Healthcare Practitioners & Technical Occupations	54,600	63,200	8,600	15.8%	862	1,226	2,088	
29-1011	Chiropractors	280	320	40	14.3%	4	5	9	\$40.43
29-1021	Dentists, General	540	630	90	16.7%	9	11	20	\$73.50
29-1031	Dietitians and Nutritionists	430	510	80	18.6%	8	3	11	\$27.97
29-1051	Pharmacists	1,780	1,880	100	5.6%	10	42	52	\$59.72
29-1061	Anesthesiologists	210	260	50	23.8%	5	6	11	N/A
29-1062	Family and General Practitioners	560	610	50	8.9%	5	15	20	\$91.62
29-1063	Internists, General	490	530	40	8.2%	4	13	17	\$63.93
29-1064	Obstetricians and Gynecologists	300	350	50	16.7%	5	8	13	N/A
29-1065	Pediatricians, General	330	360	30	9.1%	3	9	12	\$77.92

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Code	Occupational Title**	Employment*		Change in Employment		Annual Openings,			Median Wage, June 2016***
		2014 Annual	2024 Projected	2014 - 2024	Percent	Growth	Replacements	Total	
29-1067	Surgeons	370	440	70	18.9%	7	10	17	\$78.16
29-1069	Physicians and Surgeons, All Other	3,080	3,520	440	14.3%	44	83	127	\$83.51
29-1071	Physician Assistants	310	400	90	29.0%	10	7	17	\$45.79
29-1122	Occupational Therapists	710	920	210	29.6%	21	14	35	\$39.63
29-1123	Physical Therapists	1,210	1,600	390	32.2%	39	32	71	\$41.58
29-1126	Respiratory Therapists	990	1,140	150	15.2%	14	23	37	\$26.85
29-1127	Speech-Language Pathologists	920	1,170	250	27.2%	25	23	48	\$35.92
29-1129	Therapists, All Other	130	150	20	15.4%	2	1	3	\$42.17
29-1131	Veterinarians	320	360	40	12.5%	4	5	9	\$39.96
29-1141	Registered Nurses	19,080	21,860	2,780	14.6%	278	450	728	\$30.66
29-1151	Nurse Anesthetists	330	390	60	18.2%	6	8	14	\$69.69
29-1171	Nurse Practitioners	850	1,140	290	34.1%	29	20	49	\$48.29
29-1181	Audiologists	100	120	20	20.0%	2	2	4	\$40.64
29-1199	Health Diagnosing and Treating Practitioners, All Other	400	440	40	10.0%	4	9	13	\$40.76
29-2011	Medical and Clinical Laboratory Technologists	880	1,010	130	14.8%	12	21	33	\$28.88
29-2012	Medical and Clinical Laboratory Technicians	1,290	1,480	190	14.7%	19	31	50	\$18.95
29-2021	Dental Hygienists	1,470	1,720	250	17.0%	25	24	49	\$35.05
29-2031	Cardiovascular Technologists and Technicians	310	370	60	19.4%	7	6	13	\$23.69
29-2032	Diagnostic Medical Sonographers	400	500	100	25.0%	10	8	18	\$33.60
29-2033	Nuclear Medicine Technologists	200	210	10	5.0%	1	4	5	\$34.11
29-2034	Radiologic Technologists	1,160	1,250	90	7.8%	9	22	31	\$26.04
29-2035	Magnetic Resonance Imaging Technologists	200	210	10	5.0%	1	4	5	\$32.95
29-2041	Emergency Medical Technicians and Paramedics	1,310	1,610	300	22.9%	29	22	51	\$15.66
29-2051	Dietetic Technicians	100	110	10	10.0%	1	1	2	\$22.05
29-2052	Pharmacy Technicians	1,980	2,170	190	9.6%	19	20	39	\$14.05
29-2055	Surgical Technologists	540	600	60	11.1%	6	5	11	\$21.20
29-2056	Veterinary Technologists and Technicians	440	520	80	18.2%	8	4	12	\$15.18
29-2057	Ophthalmic Medical Technicians	360	440	80	22.2%	8	4	12	\$18.68
29-2061	Licensed Practical and Licensed Vocational Nurses	5,450	6,450	1,000	18.3%	99	155	254	\$21.27
29-2071	Medical Records and Health Information Technicians	1,600	1,830	230	14.4%	24	36	60	\$19.30
29-2081	Opticians, Dispensing	450	530	80	17.8%	8	12	20	\$21.23
29-2099	Health Technologists and Technicians, All Other	720	830	110	15.3%	11	7	18	\$20.73
29-9011	Occupational Health and Safety Specialists	390	410	20	5.1%	2	8	10	\$33.68
29-9012	Occupational Health and Safety Technicians	200	210	10	5.0%	1	4	5	\$27.02
29-9091	Athletic Trainers	190	240	50	26.3%	5	4	9	\$45.085 ††
29-9099	Healthcare Practitioners and Technical Workers, All Other	250	280	30	12.0%	2	5	7	\$24.75
31-0000	Healthcare Support Occupations	28,500	35,400	6,900	24.2%	691	631	1,322	
31-1011	Home Health Aides	7,310	10,160	2,850	39.0%	285	165	450	\$10.92
31-1013	Psychiatric Aides	430	420	-10	-2.3%	0	10	10	\$17.52
31-1014	Nursing Assistants	11,470	13,550	2,080	18.1%	208	259	467	\$12.30
31-1015	Orderlies	380	410	30	7.9%	3	8	11	\$12.16
31-2011	Occupational Therapist Assistants	380	570	190	50.0%	20	11	31	\$27.94
31-2021	Physical Therapist Assistants	550	790	240	43.6%	24	16	40	\$26.15
31-2022	Physical Therapist Aides	170	240	70	41.2%	7	5	12	\$11.97
31-9011	Massage Therapists	850	1,080	230	27.1%	23	6	29	\$17.47
31-9091	Dental Assistants	1,420	1,670	250	17.6%	24	35	59	\$17.77
31-9092	Medical Assistants	3,270	4,000	730	22.3%	72	68	140	\$14.82
31-9093	Medical Equipment Preparers	360	400	40	11.1%	4	8	12	\$16.03
31-9094	Medical Transcriptionists	160	140	-20	-12.5%	0	3	3	\$20.14
31-9095	Pharmacy Aides	450	460	10	2.2%	2	9	11	\$11.88
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	330	370	40	12.1%	4	7	11	\$13.02
31-9097	Phlebotomists	560	650	90	16.1%	9	12	21	\$16.35
31-9099	Healthcare Support Workers, All Other	420	470	50	11.9%	5	9	14	\$14.66
33-0000	Protective Service Occupations	16,400	17,100	700	4.3%	68	388	456	
33-1012	First-Line Superv./Mgns of Police & Detectives	380	390	10	2.6%	1	13	14	\$38.45
33-1021	FL Sup/Mgns of Fire Fighting & Prev. Workers	440	460	20	4.5%	2	21	23	\$33.24
33-1099	First-Line Sup/Mgns, Protective Serv. Work., AO	340	360	20	5.9%	2	9	11	\$22.04
33-2011	Fire Fighters	3,080	3,210	130	4.2%	13	89	102	\$17.67
33-3011	Bailiffs	210	210	0	0.0%	1	6	7	\$20.30
33-3012	Correctional Officers and Jailers	1,050	1,070	20	1.9%	2	29	31	\$19.84
33-3021	Detectives and Criminal Investigators	230	220	-10	-4.3%	0	6	6	\$32.35
33-3051	Police and Sheriff's Patrol Officers	2,860	2,970	110	3.8%	11	94	105	\$31.70
33-9032	Security Guards	5,180	5,470	290	5.6%	29	73	102	\$11.48
33-9091	Crossing Guards	220	230	10	4.5%	1	4	5	\$9.35
33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	1,170	1,200	30	2.6%	4	16	20	\$9.14
33-9099	Protective Service Workers, All Other	550	560	10	1.8%	1	8	9	\$14.17

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Code	Occupational Title**	Employment*		Change in Employment		Annual Openings,			Median Wage, June 2016***
		2014 Annual	2024 Projected	2014 - 2024	Percent	Growth	Replacements	Total	
35-0000	Food Preparation & Serving Related Occupations	75,000	79,700	4,700	6.3%	514	2,804	3,318	
35-1011	Chefs and Head Cooks	690	780	90	13.0%	10	10	20	\$21.83
35-1012	FL Sup/Mgrs of Food Prep. & Serving Workers	5,100	5,580	480	9.4%	48	152	200	\$14.46
35-2011	Cooks, Fast Food	1,710	1,440	-270	-15.8%	0	45	45	\$9.25
35-2012	Cooks, Institution and Cafeteria	2,480	2,540	60	2.4%	6	66	72	\$12.36
35-2014	Cooks, Restaurant	7,100	8,040	940	13.2%	95	188	283	\$10.95
35-2015	Cooks, Short Order	770	740	-30	-3.9%	0	20	20	\$9.51
35-2021	Food Preparation Workers	3,610	3,890	280	7.8%	28	100	128	\$10.43
35-3011	Bartenders	2,980	3,150	170	5.7%	18	112	130	\$9.13
35-3021	Comb. Food Prep. & Serv. Work, inc. Fast Food	22,160	24,280	2,120	9.6%	212	716	928	\$9.14
35-3022	Counter Attend., Café/Food Concess/Coffee Sh.	3,530	3,670	140	4.0%	15	212	227	\$9.45
35-3031	Waiters and Waitresses	15,330	15,550	220	1.4%	21	738	759	\$9.15
35-3041	Food Servers, Nonrestaurant	2,430	2,870	440	18.1%	44	60	104	\$9.70
35-9011	Dining Room & Cafeteria Attend. & Bar Helpers	2,030	2,120	90	4.4%	9	101	110	\$9.24
35-9021	Dishwashers	2,320	2,190	-130	-5.6%	0	100	100	\$9.17
35-9031	Hosts & Hostesses, Rest./Lounge/Coffee Shop	2,370	2,440	70	3.0%	7	168	175	\$9.18
37-0000	Building & Grounds Cleaning & Maintenance Occupations	28,800	30,200	1,400	4.9%	140	578	718	
37-1011	FL Sup/Mgrs of Housekeeping & Janitorial Workers	1,020	1,060	40	3.9%	4	16	20	\$17.74
37-1012	FL Sup/Mgrs of Lndscap./Lawn Ser/Groundskp	990	1,030	40	4.0%	4	16	20	\$19.07
37-2011	Janitors & Cleaners, ex. Maids/Hseking Clean.	13,750	14,150	400	2.9%	40	273	313	\$11.22
37-2012	Maids and Housekeeping Cleaners	6,080	6,680	600	9.9%	60	145	205	\$10.19
37-3011	Landscaping and Groundskeeping Workers	6,370	6,680	310	4.9%	31	115	146	\$11.57
39-0000	Personal Care & Service Occupations	26,400	28,600	2,200	8.3%	218	638	856	
39-1021	First-Line Sup/Mgrs of Personal Serv. Workers	840	890	50	6.0%	4	16	20	\$16.23
39-2011	Animal Trainers	100	110	10	10.0%	1	4	5	\$9.42
39-2021	Nonfarm Animal Caretakers	1,360	1,490	130	9.6%	14	28	42	\$9.58
39-3031	Ushers, Lobby Attendants, and Ticket Takers	470	490	20	4.3%	2	30	32	\$9.40
39-3091	Amusement and Recreation Attendants	2,050	2,190	140	6.8%	14	86	100	\$9.36
39-5012	Hairdressers, Hairstylists, and Cosmetologists	5,080	5,540	460	9.1%	46	131	177	\$10.43
39-9011	Child Care Workers	6,170	6,550	380	6.2%	38	182	220	\$10.63
39-9021	Personal and Home Care Aides	3,770	4,270	500	13.3%	50	30	80	\$10.24
39-9031	Fitness Trainers and Aerobics Instructors	1,540	1,610	70	4.5%	7	28	35	\$13.54
39-9032	Recreation Workers	2,060	2,260	200	9.7%	20	38	58	\$10.77
39-9041	Residential Advisors	300	340	40	13.3%	4	9	13	\$12.44
39-9099	Personal Care and Service Workers, All Other	210	220	10	4.8%	2	5	7	\$10.93
41-0000	Sales & Related Occupations	83,800	86,300	2,500	3.0%	268	2,376	2,644	
41-1011	First-Line Superv./Mgrs of Retail Sales Workers	7,310	7,330	20	0.3%	2	163	165	\$18.10
41-1012	First-Line Sup./Mgrs of Non-Retail Sales Workers	2,140	2,230	90	4.2%	8	25	33	\$36.07
41-2011	Cashiers	16,260	16,320	60	0.4%	6	692	698	\$9.40
41-2021	Counter and Rental Clerks	2,130	2,170	40	1.9%	4	53	57	\$10.97
41-2031	Retail Salespersons	23,010	23,400	390	1.7%	39	798	837	\$10.60
41-3011	Advertising Sales Agents	470	450	-20	-4.3%	0	14	14	\$21.32
41-3021	Insurance Sales Agents	2,060	2,210	150	7.3%	15	54	69	\$24.15
41-3031	Securities/Commodities/Fin. Serv. Sales Agents	3,670	3,920	250	6.8%	25	63	88	\$32.82
41-3041	Travel Agents	300	250	-50	-16.7%	0	5	5	\$15.44
41-3099	Sales Representatives, Services, All Other	6,890	7,510	620	9.0%	62	147	209	\$25.05
41-4011	Sales Rep., Wholesale & Mfg. Tech./Sci. Prod.	3,900	4,190	290	7.4%	28	80	108	\$36.84
41-4012	Sales Rep., Wholesale/Mfg, ex. Tech./Sci. Prod.	8,200	8,470	270	3.3%	27	169	196	\$30.55
41-9022	Real Estate Sales Agents	1,640	1,810	170	10.4%	17	12	29	\$17.61
41-9031	Sales Engineers	540	550	10	1.9%	1	14	15	\$45.69
41-9041	Telemarketers	1,080	1,030	-50	-4.6%	0	20	20	\$13.28
41-9099	Sales and Related Workers, All Other	770	810	40	5.2%	4	11	15	\$14.66
43-0000	Office & Administrative Support Occupations	129,700	130,700	1,000	0.8%	503	2,665	3,168	
43-1011	First-Line Sup/Mgrs of Office & Admin. Support	6,790	7,270	480	7.1%	48	103	151	\$24.84
43-2011	Switchboard Operators, Including Answering Service	530	360	-170	-32.1%	0	6	6	\$13.96
43-3011	Bill and Account Collectors	2,390	2,210	-180	-7.5%	0	58	58	\$15.92
43-3021	Billing and Posting Clerks and Machine Operators	3,300	3,680	380	11.5%	39	69	108	\$17.89
43-3031	Bookkeeping, Accounting, and Auditing Clerks	9,800	8,830	-970	-9.9%	0	96	96	\$17.78
43-3051	Payroll and Timekeeping Clerks	1,120	1,080	-40	-3.6%	0	30	30	\$20.98
43-3071	Tellers	3,250	2,960	-290	-8.9%	0	127	127	\$11.97
43-3099	Financial Clerks, All Other	420	440	20	4.8%	2	11	13	\$19.46
43-4021	Correspondence Clerks	190	150	-40	-21.1%	0	5	5	\$21.21
43-4031	Court, Municipal, and License Clerks	690	720	30	4.3%	3	4	7	\$16.53
43-4051	Customer Service Representatives	14,000	15,320	1,320	9.4%	132	345	477	\$15.18
43-4061	Eligibility Interviewers, Government Programs	500	520	20	4.0%	2	6	8	\$23.97
43-4071	File Clerks	610	570	-40	-6.6%	0	12	12	\$13.71

Cincinnati-Middletown Metropolitan Statistical Area (continued)
Occupational Employment* Projections Report, 2014-2024

Code	Occupational Title**	Employment*		Change in Employment		Annual Openings,			Median Wage, June 2016***
		2014 Annual	2024 Projected	2014 - 2024	Percent	Growth	Replacements	Total	
43-4081	Hotel, Motel, and Resort Desk Clerks	1,060	1,120	60	5.7%	6	55	61	\$9.55
43-4111	Interviewers, Except Eligibility and Loan	2,260	2,360	100	4.4%	10	52	62	\$14.96
43-4121	Library Assistants, Clerical	750	780	30	4.0%	3	23	26	\$12.16
43-4131	Loan Interviewers and Clerks	2,130	2,270	140	6.6%	14	33	47	\$18.99
43-4141	New Accounts Clerks	340	320	-20	-5.9%	0	8	8	\$16.26
43-4151	Order Clerks	2,610	2,660	50	1.9%	5	71	76	\$15.02
43-4161	Human Resources Assis., ex. Payroll & Timekp	900	840	-60	-6.7%	0	10	10	\$18.51
43-4171	Receptionists and Information Clerks	3,810	3,960	150	3.9%	15	103	118	\$12.80
43-4199	Information and Record Clerks, All Other	590	580	-10	-1.7%	0	15	15	\$18.13
43-5011	Cargo and Freight Agents	500	530	30	6.0%	3	16	19	\$17.90
43-5021	Couriers and Messengers	510	570	60	11.8%	6	6	12	\$13.05
43-5031	Police, Fire, and Ambulance Dispatchers	420	390	-30	-7.1%	0	10	10	\$21.86
43-5032	Dispatchers, Except Police, Fire, and Ambulance	1,080	1,130	50	4.6%	4	27	31	\$17.21
43-5041	Meter Readers, Utilities	210	160	-50	-23.8%	0	4	4	\$14.54
43-5051	Postal Service Clerks	270	190	-80	-29.6%	0	3	3	\$28.14
43-5052	Postal Service Mail Carriers	1,610	1,110	-500	-31.1%	0	31	31	\$29.37
43-5053	Postal Service Mail Sorters/Proc/Proc Mach. Op.	1,180	730	-450	-38.1%	0	14	14	\$28.11
43-5061	Production, Planning, and Expediting Clerks	1,960	2,020	60	3.1%	6	53	59	\$23.08
43-5071	Shipping, Receiving, and Traffic Clerks	4,740	4,670	-70	-1.5%	0	103	103	\$16.08
43-5081	Stock Clerks and Order Fillers	12,510	12,820	310	2.5%	32	397	429	\$11.91
43-5111	Weighers/Meas./Checkers/Samplers, Recordkp	200	190	-10	-5.0%	0	6	6	\$14.36
43-6011	Executive Secretaries and Administrative Assistants	4,890	4,530	-360	-7.4%	0	52	52	\$25.08
43-6012	Legal Secretaries	970	930	-40	-4.1%	0	10	10	\$18.85
43-6013	Medical Secretaries	5,670	6,740	1,070	18.9%	107	60	167	\$15.55
43-6014	Secretaries, Except Legal, Medical, and Executive	9,660	9,770	110	1.1%	11	102	113	\$17.04
43-9011	Computer Operators	240	190	-50	-20.8%	0	2	2	\$21.63
43-9021	Data Entry Keyers	1,040	990	-50	-4.8%	0	13	13	\$15.93
43-9022	Word Processors and Typists	390	340	-50	-12.8%	0	1	1	\$18.01
43-9041	Insurance Claims and Policy Processing Clerks	3,520	3,650	130	3.7%	13	88	101	\$18.96
43-9051	Mail Clerks & Mail Machine Op., ex. Postal Serv.	910	690	-220	-24.2%	0	19	19	\$13.43
43-9061	Office Clerks, General	13,780	13,950	170	1.2%	16	297	313	\$14.79
43-9071	Office Machine Operators, Except Computer	300	260	-40	-13.3%	0	7	7	\$13.44
43-9199	Office and Administrative Support Workers, All Other	1,000	1,120	120	12.0%	12	27	39	\$19.06
45-0000	Farming, Fishing, & Forestry Occupations	800	700	-100	-12.5%	1	20	21	
45-2092	Farmworkers/Laborers, Crop/Nursery/Greenhse	480	430	-50	-10.4%	0	13	13	\$10.91
47-0000	Construction & Extraction Occupations	31,400	34,300	2,900	9.2%	296	480	776	
47-1011	First-Line Sup/Mgrs of Con. Trades/Extract. Work	2,730	3,010	280	10.3%	28	22	50	\$29.67
47-2021	Brickmasons and Blockmasons	690	750	60	8.7%	6	6	12	\$26.15
47-2031	Carpenters	4,760	5,130	370	7.8%	37	55	92	\$20.81
47-2041	Carpet Installers	170	160	-10	-5.9%	0	2	2	\$17.19
47-2051	Cement Masons and Concrete Finishers	750	800	50	6.7%	5	9	14	\$18.18
47-2061	Construction Laborers	4,890	5,460	570	11.7%	57	98	155	\$19.08
47-2071	Paving, Surfacing, and Tamping Equipment Operators	280	280	0	0.0%	0	7	7	\$20.54
47-2073	Operating Engineers & Other Con. Equip. Op.	1,540	1,620	80	5.2%	8	26	34	\$24.03
47-2081	Drywall and Ceiling Tile Installers	520	560	40	7.7%	4	3	7	\$16.10
47-2111	Electricians	3,570	4,090	520	14.6%	52	54	106	\$23.79
47-2121	Glaziers	240	230	-10	-4.2%	0	4	4	\$19.82
47-2141	Painters, Construction and Maintenance	1,870	2,070	200	10.7%	19	30	49	\$20.06
47-2151	Pipelayers	100	110	10	10.0%	1	1	2	\$28.72
47-2152	Plumbers, Pipefitters, and Steamfitters	2,670	2,990	320	12.0%	32	35	67	\$25.22
47-2181	Roofers	1,080	1,110	30	2.8%	4	16	20	\$20.08
47-2211	Sheet Metal Workers	860	910	50	5.8%	6	18	24	\$20.72
47-2221	Structural Iron and Steel Workers	650	670	20	3.1%	2	11	13	\$27.00
47-3011	Helpers-Brick/Block/Stone/Tile & Marble Setters	140	160	20	14.3%	2	2	4	\$16.94
47-3012	Helpers-Carpenters	200	230	30	15.0%	3	3	6	\$13.22
47-3015	Helpers-Pipelayers/Plumbers/Pipefitters/Steamf	180	210	30	16.7%	2	2	4	\$12.69
47-4011	Construction and Building Inspectors	400	420	20	5.0%	2	11	13	\$25.97
47-4041	Hazardous Materials Removal Workers	220	230	10	4.5%	1	5	6	\$17.21
47-4051	Highway Maintenance Workers	780	820	40	5.1%	3	21	24	\$19.25
47-4099	Construction and Related Workers, All Other	200	210	10	5.0%	1	3	4	\$16.56
49-0000	Installation, Maintenance, & Repair Occupations	31,300	33,000	1,700	5.4%	204	725	929	
49-1011	FL Sup/Mgrs of Mechanics/Installers/Repairers	2,110	2,210	100	4.7%	10	42	52	\$29.45
49-2011	Computer, ATM, & Office Machine Repairers	800	790	-10	-1.3%	0	16	16	\$15.88
49-2022	Telecomm. Equip. Install/Repair, ex. Line Install	1,270	1,160	-110	-8.7%	0	12	12	\$19.80
49-2092	Electric Motor, Power Tool, and Related Repairers	120	120	0	0.0%	0	3	3	\$32.69
49-2094	Electrical/Electronics Repair, Comm/Indus Equip.	250	250	0	0.0%	0	4	4	\$27.76

Cincinnati-Middletown Metropolitan Statistical Area (continued)
Occupational Employment* Projections Report, 2014-2024

Code	Occupational Title**	Employment*		Change in Employment		Annual Openings,			Median Wage, June 2016***
		2014 Annual	2024 Projected	2014 - 2024	Percent	Growth	Replacements	Total	
49-2097	Electronic Home Entertainm Equip. Install/Repair	230	220	-10	-4.3%	0	3	3	\$16.52
49-3011	Aircraft Mechanics and Service Technicians	350	360	10	2.9%	1	8	9	\$28.40
49-3021	Automotive Body and Related Repairers	780	840	60	7.7%	6	18	24	\$19.02
49-3023	Automotive Service Technicians and Mechanics	4,370	4,540	170	3.9%	18	117	135	\$16.25
49-3031	Bus & Truck Mechanics & Diesel Engine Spec.	1,660	1,860	200	12.0%	20	28	48	\$22.46
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	240	260	20	8.3%	1	6	7	\$21.90
49-3053	Outdoor Power Equip. & Other Sm Engine Mech.	230	250	20	8.7%	2	5	7	\$15.14
49-3093	Tire Repairers and Changers	560	560	0	0.0%	0	19	19	\$9.91
49-9011	Mechanical Door Repairers	210	230	20	9.5%	2	8	10	\$18.21
49-9021	Heating, AC, & Refrigeration Mechanics/Installers	1,590	1,810	220	13.8%	23	24	47	\$24.67
49-9041	Industrial Machinery Mechanics	3,190	3,680	490	15.4%	49	83	132	\$24.58
49-9043	Maintenance Workers, Machinery	440	500	60	13.6%	5	7	12	\$22.57
49-9044	Millwrights	300	350	50	16.7%	5	6	11	\$27.06
49-9051	Electrical Power-Line Installers and Repairers	270	260	-10	-3.7%	0	11	11	\$32.59
49-9052	Telecommunications Line Installers and Repairers	470	560	90	19.1%	9	8	17	\$22.66
49-9062	Medical Equipment Repairers	330	330	0	0.0%	0	6	6	\$28.15
49-9069	Precision Instrument and Equipment Repairers, All Other	120	110	-10	-8.3%	0	2	2	\$24.58
49-9071	Maintenance and Repair Workers, General	7,740	8,130	390	5.0%	38	203	241	\$18.98
49-9091	Coin/Vending/Amusement Machine Serv/Repair	390	350	-40	-10.3%	0	5	5	\$15.30
49-9098	Helpers--Installation, Maintenance, and Repair Workers	370	400	30	8.1%	4	12	16	\$12.18
49-9099	Installation, Maintenance, and Repair Workers, All Other	930	980	50	5.4%	5	14	19	\$17.88
51-0000	Production Occupations	58,600	57,300	-1,300	-2.2%	132	1,346	1,478	
51-1011	FL Sup/Mgrs of Production/Operating Workers	3,450	3,350	-100	-2.9%	0	54	54	\$29.28
51-2021	Coil Winders, Tapers, and Finishers	190	190	0	0.0%	0	2	2	\$21.56
51-2022	Electrical and Electronic Equipment Assemblers	1,160	1,080	-80	-6.9%	0	14	14	\$16.68
51-2023	Electromechanical Equipment Assemblers	290	280	-10	-3.4%	0	4	4	\$19.61
51-2031	Engine and Other Machine Assemblers	280	280	0	0.0%	0	6	6	\$25.95
51-2041	Structural Metal Fabricators and Fitters	470	460	-10	-2.1%	0	8	8	\$16.76
51-2092	Team Assemblers	4,510	4,590	80	1.8%	8	97	105	\$14.84
51-2099	Assemblers and Fabricators, All Other	2,050	2,070	20	1.0%	2	44	46	\$14.77
51-3011	Bakers	960	1,000	40	4.2%	4	21	25	\$11.81
51-3021	Butchers and Meat Cutters	1,020	1,090	70	6.9%	7	20	27	\$16.56
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	570	580	10	1.8%	1	11	12	\$11.05
51-3023	Slaughterers and Meat Packers	350	340	-10	-2.9%	0	7	7	\$11.77
51-3092	Food Batchmakers	310	310	0	0.0%	0	7	7	\$14.01
51-3099	Food Processing Workers, All Other	100	100	0	0.0%	0	2	2	\$12.88
51-4011	Computer-Controlled Machine Tool Oper., M/P	1,930	2,230	300	15.5%	30	59	89	\$19.69
51-4012	Numerical Tool and Process Control Programmers	130	150	20	15.4%	2	4	6	\$28.77
51-4021	Extruding & Drawing Machine Setters, O/T, M/P	450	340	-110	-24.4%	0	11	11	\$16.89
51-4031	Cutting/Punching/Press Machine S/O/T, M/P	1,330	1,080	-250	-18.8%	0	17	17	\$16.54
51-4033	Grind/Lapping/Polish/Buff Mach.Tool S/O/T, M/P	480	390	-90	-18.8%	0	20	20	\$15.42
51-4034	Lathe & Turning Machine Tool Setters, O/T, M/P	380	310	-70	-18.4%	0	9	9	\$19.56
51-4035	Milling & Planing Machine Setters, O/T, M/P	210	170	-40	-19.0%	0	4	4	\$19.98
51-4041	Machinists	3,910	4,290	380	9.7%	38	113	151	\$21.29
51-4072	Molding/Coremaking/Casting Mach. S/O/T, M/P	1,000	760	-240	-24.0%	0	15	15	\$16.47
51-4111	Tool and Die Makers	530	460	-70	-13.2%	0	3	3	\$25.39
51-4121	Welders, Cutters, Solderers, and Brazers	2,180	2,180	0	0.0%	0	62	62	\$18.20
51-4122	Welding/Soldering/Brazing Machine Setters, O/T	490	400	-90	-18.4%	0	14	14	\$17.85
51-4193	Plating & Coating Machine Setters, O/T, M/P	360	310	-50	-13.9%	0	9	9	\$16.18
51-5111	Prepress Technicians and Workers	400	300	-100	-25.0%	0	6	6	\$20.28
51-5112	Printing Press Operators and Job Printers	1,950	1,770	-180	-9.2%	0	29	29	\$18.12
51-5113	Print Binding and Finishing Workers	260	240	-20	-7.7%	0	4	4	\$14.29
51-6011	Laundry and Dry-Cleaning Workers	1,010	1,030	20	2.0%	3	14	17	\$10.04
51-6021	Pressers, Textile, Garment, and Related Materials	620	540	-80	-12.9%	0	14	14	\$9.44
51-6031	Sewing Machine Operators	600	510	-90	-15.0%	0	4	4	\$12.98
51-7011	Cabinetmakers and Bench Carpenters	490	510	20	4.1%	2	4	6	\$17.22
51-7041	Sawing Mach. Setters/Operators/Tenders, Wood	160	160	0	0.0%	0	5	5	\$13.96
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	280	290	10	3.6%	1	5	6	\$13.59
51-8013	Power Plant Operators	410	350	-60	-14.6%	0	14	14	\$34.89
51-8021	Stationary Engineers and Boiler Operators	320	330	10	3.1%	1	9	10	\$25.93
51-8031	Water/Liquid Waste Treatment Plant/System Op.	390	410	20	5.1%	2	10	12	\$21.43
51-8091	Chemical Plant and System Operators	430	430	0	0.0%	0	16	16	\$26.23
51-9011	Chemical Equipment Operators/Tenders	720	730	10	1.4%	1	23	24	\$22.99
51-9022	Grinding and Polishing Workers, Hand	140	130	-10	-7.1%	0	3	3	\$15.53
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	1,410	1,430	20	1.4%	2	31	33	\$19.71
51-9041	Extrud/Form/Pressing/Compacting Mach. S/O/T	150	150	0	0.0%	0	5	5	\$17.55

**Cincinnati-Middletown Metropolitan Statistical Area (continued)
Occupational Employment* Projections Report, 2014-2024**

Code	Occupational Title**	Employment*		Change in Employment		Annual Openings,			Median Wage, June 2016***
		2014 Annual	2024 Projected	2014 - 2024	Percent	Growth	Replacements	Total	
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	3,260	3,270	10	0.3%	0	82	82	\$19.04
51-9071	Jewelers and Precious Stone and Metal Workers	210	200	-10	-4.8%	0	3	3	\$14.64
51-9081	Dental Laboratory Technicians	160	180	20	12.5%	2	4	6	\$19.92
51-9111	Packaging and Filling Machine Operators/Tenders	3,810	3,980	170	4.5%	17	136	153	\$15.28
51-9121	Coating/Painting/Spraying Machine Setters, O/T	590	600	10	1.7%	1	11	12	\$17.55
51-9122	Painters, Transportation Equipment	160	170	10	6.3%	1	3	4	\$19.66
51-9192	Cleaning/Washing/Metal Pickling Equipment O/T	150	140	-10	-6.7%	0	4	4	\$14.62
51-9195	Molders/Shapers/Casters, ex. Metal & Plastic	130	130	0	0.0%	0	4	4	\$14.95
51-9196	Paper Goods Machine Setters, Operators, and Tenders	1,180	1,030	-150	-12.7%	0	17	17	\$17.21
51-9198	Helpers—Production Workers	2,280	2,220	-60	-2.6%	0	74	74	\$11.49
51-9199	Production Workers, All Other	1,220	1,240	20	1.6%	2	25	27	\$16.32
53-0000	Transportation & Material Moving Occupations	54,400	57,400	3,000	5.5%	314	1,305	1,619	
53-1031	FL Sup/Mgr of Trans/Mat-Mov. Mach & Veh Op	1,230	1,270	40	3.3%	3	40	43	\$27.08
53-2012	Commercial Pilots	270	320	50	18.5%	5	6	11	\$75,543 ††
53-3021	Bus Drivers, Transit and Intercity	1,490	1,550	60	4.0%	6	20	26	\$19.01
53-3022	Bus Drivers, School	3,750	3,910	160	4.3%	15	49	64	\$17.70
53-3032	Truck Drivers, Heavy and Tractor-Trailer	8,560	8,940	380	4.4%	39	146	185	\$20.86
53-3033	Truck Drivers, Light or Delivery Services	4,760	4,830	70	1.5%	7	81	88	\$14.91
53-3041	Taxi Drivers and Chauffeurs	860	1,080	220	25.6%	22	16	38	\$10.09
53-3099	Motor Vehicle Operators, All Other	360	390	30	8.3%	4	11	15	\$9.68
53-6021	Parking Lot Attendants	790	820	30	3.8%	3	44	47	\$9.41
53-6031	Service Station Attendants	620	660	40	6.5%	5	24	29	\$10.87
53-6051	Transportation Inspectors	100	100	0	0.0%	0	3	3	\$44.30
53-7011	Conveyor Operators/Tenders	170	180	10	5.9%	0	5	5	\$16.74
53-7021	Crane and Tower Operators	220	270	50	22.7%	5	8	13	\$21.33
53-7051	Industrial Truck and Tractor Operators	2,600	2,640	40	1.5%	4	65	69	\$15.32
53-7061	Cleaners of Vehicles and Equipment	2,010	2,180	170	8.5%	17	70	87	\$9.77
53-7062	Laborers/Freight/Stock/Material Movers, Hand	12,510	13,170	660	5.3%	66	372	438	\$12.95
53-7063	Machine Feeders and Offbearers	350	320	-30	-8.6%	0	8	8	\$15.92
53-7081	Refuse and Recyclable Material Collectors	1,130	1,240	110	9.7%	11	28	39	\$16.60

*Occupations with 100 or more workers.

† National Wages

†† Certain occupations only report wages at the annual level - for elementary and secondary teachers this typically reflects a 9 1/2 month school year.

††† Statewide Wages

†††† Statewide Annual Wages

****Abbreviations**

AO = All Other

FL Sup/Mgrs = First-Line Supervisors/Managers

M/P = Metal and Plastic

PS = Postsecondary

O/T = Operators and Tenders

S/O/T = Setters, Operators and Tenders

***2015 wages statistically aged to June 2016

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, June 2017.

**Cincinnati-Middletown Metropolitan Statistical Area
Occupational Employment* Projections Report, 2014-2024**

Code	Occupational Title**	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	Median Wage, June 2016***
00-0000	Total, All Occupations				
11-0000	Management Occupations				
11-1011	Chief Executives	Bachelor's degree	5 years or more	None	\$87.12 †
11-1021	General and Operations Managers	Bachelor's degree	5 years or more	None	\$46.05
11-1031	Legislators	Bachelor's degree	Less than 5 years	None	\$19,382 ††
11-2011	Advertising and Promotions Managers	Bachelor's degree	Less than 5 years	None	\$48.51
11-2021	Marketing Managers	Bachelor's degree	5 years or more	None	\$57.80
11-2022	Sales Managers	Bachelor's degree	Less than 5 years	None	\$58.12
11-2031	Public Relations Managers	Bachelor's degree	5 years or more	None	\$44.36
11-3011	Administrative Services Managers	Bachelor's degree	Less than 5 years	None	\$37.47
11-3021	Computer and Information Systems Managers	Bachelor's degree	5 years or more	None	\$58.86
11-3031	Financial Managers	Bachelor's degree	5 years or more	None	\$56.54
11-3051	Industrial Production Managers	Bachelor's degree	5 years or more	None	\$46.77
11-3061	Purchasing Managers	Bachelor's degree	5 years or more	None	\$54.38
11-3071	Transportation, Storage, and Distribution Managers	High school diploma or equivalent	5 years or more	None	\$40.53
11-3111	Compensation and Benefits Managers	Bachelor's degree	5 years or more	None	\$54.95
11-3121	Human Resources Managers	Bachelor's degree	5 years or more	None	\$52.98
11-3131	Training and Development Managers	Bachelor's degree	5 years or more	None	\$53.61
11-9013	Farmers, Ranchers, and Other Agricultural Managers	High school diploma or equivalent	5 years or more	None	\$27.83 †††
11-9021	Construction Managers	Bachelor's degree	None	Moderate-term on-the-job training	\$42.17
11-9031	Education Admin., Pre & Child Care Center/Prog.	Bachelor's degree	Less than 5 years	None	\$17.94
11-9032	Education Admin., Elem. & Secondary School	Master's degree	5 years or more	None	\$87,931 ††
11-9033	Education Administrators, Postsecondary	Master's degree	Less than 5 years	None	\$42.55
11-9039	Education Administrators, All Other	Bachelor's degree	Less than 5 years	None	\$33.77
11-9041	Engineering Managers	Bachelor's degree	5 years or more	None	\$60.58
11-9051	Food Service Managers	High school diploma or equivalent	Less than 5 years	None	\$25.03
11-9081	Lodging Managers	High school diploma or equivalent	Less than 5 years	None	\$17.97
11-9111	Medical and Health Services Managers	Bachelor's degree	Less than 5 years	None	\$46.22
11-9121	Natural Sciences Managers	Bachelor's degree	5 years or more	None	\$58.47
11-9141	Property, Real Estate & Community Assn Mgrs	High school diploma or equivalent	Less than 5 years	None	\$25.08
11-9151	Social and Community Service Managers	Bachelor's degree	5 years or more	None	\$30.71
11-9199	Managers, All Other	Bachelor's degree	Less than 5 years	None	\$50.25
13-0000	Business & Financial Operations Occupations				
13-1022	Wholesale and Retail Buyers, Except Farm Products	Bachelor's degree	None	Long-term on-the-job training	\$25.90
13-1023	Purchasing Agents, ex. Whole., Retail, & Farm	Bachelor's degree	None	Long-term on-the-job training	\$30.64
13-1031	Claims Adjusters, Examiners, and Investigators	High school diploma or equivalent	None	Long-term on-the-job training	\$30.77
13-1041	Compl. Off., ex. Agric. Con, Hlth/Safety, & Trans.	Bachelor's degree	None	Moderate-term on-the-job training	\$31.23
13-1051	Cost Estimators	Bachelor's degree	None	None	\$29.60
13-1071	Human Resource Specialists	Bachelor's degree	None	None	\$28.26
13-1075	Labor Relations Specialists	Bachelor's degree	Less than 5 years	None	\$10.49
13-1081	Logisticians	Bachelor's degree	None	None	\$34.77
13-1111	Management Analysts	Bachelor's degree	Less than 5 years	None	\$35.35
13-1121	Meeting and Convention Planners	Bachelor's degree	None	None	\$19.28
13-1131	Fundraisers	Bachelor's degree	None	None	\$24.45
13-1141	Compensation, Benefits, and Job Analysis Specialists	Bachelor's degree	Less than 5 years	None	\$28.67
13-1151	Training and Development Specialists	Bachelor's degree	Less than 5 years	None	\$29.17
13-1161	Market Research Analysts and Marketing Specialists	Bachelor's degree	None	None	\$28.82
13-1199	Business Operations Specialists, All Other	Bachelor's degree	None	None	\$30.03
13-2011	Accountants and Auditors	Bachelor's degree	None	None	\$30.37
13-2021	Appraisers and Assessors of Real Estate	Bachelor's degree	None	Long-term on-the-job training	\$23.53 †††
13-2031	Budget Analysts	Bachelor's degree	None	None	\$34.38
13-2053	Insurance Underwriters	Bachelor's degree	None	Moderate-term on-the-job training	\$29.74
13-2071	Loan Counselors	Bachelor's degree	None	Moderate-term on-the-job training	\$19.71
13-2072	Loan Officers	Bachelor's degree	None	Moderate-term on-the-job training	\$33.55
13-2081	Tax Examiners, Collectors, and Revenue Agents	Bachelor's degree	None	Moderate-term on-the-job training	\$24.30
13-2082	Tax Preparers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.01
13-2099	Financial Specialists, All Other	Bachelor's degree	None	Moderate-term on-the-job training	\$31.18
15-0000	Computer & Mathematical Occupations				
15-1121	Computer Systems Analysts	Bachelor's degree	None	None	\$42.52
15-1122	Information Security Analysts	Bachelor's degree	Less than 5 years	None	\$37.92
15-1131	Computer Programmers	Bachelor's degree	None	None	\$31.81
15-1132	Software Developers, Applications	Bachelor's degree	None	None	\$40.65
15-1133	Software Developers, Systems Software	Bachelor's degree	None	None	\$44.26
15-1134	Web Developers	Associate's degree	None	None	\$30.91
15-1141	Database Administrators	Bachelor's degree	Less than 5 years	None	\$37.88
15-1142	Network and Comp. Systems architects and Admins	Bachelor's degree	None	None	\$36.93

Cincinnati-Middletown Metropolitan Statistical Area (continued)
Occupational Employment* Projections Report, 2014-2024

Code	Occupational Title**	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	Median Wage, June 2016***
15-1143	Computer Network Architects	Bachelor's degree	5 years or more	None	\$48.31
15-1151	Computer User Support Specialists	Some college, no degree	None	None	\$23.01
15-1152	Computer Network Support Specialists	Associate's degree	None	None	\$28.53
15-1199	Computer Occupations, All Other	Bachelor's degree	None	None	\$35.72
15-2011	Actuaries	Bachelor's degree	None	Long-term on-the-job training	\$46.25
15-2031	Operations Research Analysts	Bachelor's degree	None	None	\$42.15
15-2041	Statisticians	Master's degree	None	None	\$40.61
17-0000	Architecture & Engineering Occupations				
17-1011	Architects, Except Landscape and Naval	Bachelor's degree	None	Internship/residency	\$38.51
17-1022	Surveyors	Bachelor's degree	Less than 5 years	None	\$30.05
17-2041	Chemical Engineers	Bachelor's degree	None	None	\$40.17
17-2051	Civil Engineers	Bachelor's degree	None	None	\$36.52
17-2071	Electrical Engineers	Bachelor's degree	None	None	\$36.74
17-2072	Electronics Engineers, Except Computer	Bachelor's degree	None	None	\$46.63
17-2081	Environmental Engineers	Bachelor's degree	None	None	\$46.64
17-2112	Industrial Engineers	Bachelor's degree	None	None	\$42.34
17-2131	Materials Engineers	Bachelor's degree	None	None	\$41.79
17-2141	Mechanical Engineers	Bachelor's degree	None	None	\$36.77
17-2199	Engineers, All Other	Bachelor's degree	None	None	\$36.31
17-3011	Architectural and Civil Drafters	Associate's degree	None	None	\$25.32
17-3012	Electrical and Electronics Drafters	Associate's degree	None	None	\$25.45
17-3013	Mechanical Drafters	Associate's degree	None	None	\$25.73
17-3019	Drafters, All Other	Associate's degree	None	None	\$25.80
17-3022	Civil Engineering Technicians	Associate's degree	None	None	\$23.42
17-3023	Electrical and Electronic Engineering Technicians	Associate's degree	None	None	\$30.28
17-3024	Electro-Mechanical Technicians	Associate's degree	None	None	\$31.66
17-3026	Industrial Engineering Technicians	Associate's degree	None	None	\$28.29
17-3027	Mechanical Engineering Technicians	Associate's degree	None	None	\$22.22
17-3029	Engineering Technicians, Except Drafters, All Other	Associate's degree	None	None	\$30.69
17-3031	Surveying and Mapping Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.98
19-0000	Life, Physical, & Social Science Occupations				
19-1012	Food Scientists and Technologists	Bachelor's degree	None	None	\$25.82
19-1022	Microbiologists	Bachelor's degree	None	None	\$30.12
19-1042	Medical Scientists, Except Epidemiologists	Doctoral or professional degree	None	None	\$27.90
19-2031	Chemists	Bachelor's degree	None	None	\$31.42
19-2041	Environmental Scientists/Specialists, inc. Health	Bachelor's degree	None	None	\$32.15
19-2099	Physical Scientists, All Other	Bachelor's degree	None	None	\$48.69
19-3022	Survey Researchers	Master's degree	None	None	\$23.43
19-3031	Clinical, Counseling, and School Psychologists	Doctoral or professional degree	None	Internship/residency	\$35.46
19-4021	Biological Technicians	Bachelor's degree	None	None	\$21.21
19-4031	Chemical Technicians	Associate's degree	None	Moderate-term on-the-job training	\$21.40
19-4091	Environ. Science & Protection Tech., inc. Health	Associate's degree	None	None	\$19.09
19-4099	Life, Physical, & Social Science Tech., All Other	Associate's degree	None	None	\$21.31
21-0000	Community & Social Service Occupations				
21-1011	Substance Abuse & Behavioral Dis. Counselors	Bachelor's degree	None	None	\$18.95
21-1012	Educational, Vocational, and School Counselors	Master's degree	None	None	\$26.56
21-1014	Mental Health Counselors	Master's degree	None	Internship/residency	\$20.55
21-1015	Rehabilitation Counselors	Master's degree	None	None	\$17.46
21-1019	Counselors, All Other	Master's degree	None	None	\$20.34
21-1021	Child, Family, and School Social Workers	Bachelor's degree	None	None	\$19.15
21-1022	Medical and Public Health Social Workers	Master's degree	None	None	\$26.74
21-1023	Mental Health and Substance Abuse Social Workers	Bachelor's degree	None	None	\$17.45
21-1029	Social Workers, All Other	Bachelor's degree	None	None	\$21.18
21-1091	Health Educators	Bachelor's degree	None	None	\$29.97
21-1092	Probation Officers & Correct. Treatment Spec.	Bachelor's degree	None	Short-term on-the-job training	\$22.39
21-1093	Social and Human Service Assistants	High school diploma or equivalent	None	Short-term on-the-job training	\$15.26
21-1094	Community Health Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$19.46
21-1099	Community and Social Service Specialists, All Other	Master's degree	None	None	\$17.03
21-2011	Clergy	Bachelor's degree	None	Moderate-term on-the-job training	\$22.78
23-0000	Legal Occupations				
23-1011	Lawyers	Doctoral or professional degree	None	None	\$49.51
23-2011	Paralegals and Legal Assistants	Associate's degree	None	None	\$20.08
23-2093	Title Examiners, Abstractors, and Searchers	High school diploma or equivalent	None	Short-term on-the-job training	\$20.69
25-0000	Education, Training, & Library Occupations				
25-1021	Computer Science Teachers, Postsecondary	Doctoral or professional degree	None	None	\$80.975 ††
25-1022	Mathematical Science Teachers, Postsecondary	Doctoral or professional degree	None	None	\$71.658 ††

Cincinnati-Middletown Metropolitan Statistical Area (continued)
Occupational Employment* Projections Report, 2014-2024

Code	Occupational Title**	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	Median Wage, June 2016***
25-1042	Biological Science Teachers, Postsecondary	Doctoral or professional degree	None	None	\$72,260 ††
25-1052	Chemistry Teachers, Postsecondary	Doctoral or professional degree	None	None	\$72,892 ††
25-1066	Psychology Teachers, Postsecondary	Doctoral or professional degree	None	None	\$85,073 ††
25-1071	Health Specialties Teachers, Postsecondary	Doctoral or professional degree	Less than 5 years	None	\$141,727 ††
25-1072	Nursing Instructors and Teachers, Postsecondary	Master's degree	Less than 5 years	None	\$70,772 ††
25-1081	Education Teachers, Postsecondary	Doctoral or professional degree	Less than 5 years	None	\$70,721 ††
25-1113	Social Work Teachers, Postsecondary	Doctoral or professional degree	None	None	\$61,791 ††
25-1121	Art, Drama, and Music Teachers, Postsecondary	Master's degree	None	None	\$62,902 ††
25-1122	Communications Teachers, Postsecondary	Doctoral or professional degree	None	None	\$56,776 ††
25-1123	English Language/Literature Teachers, Postsecondary	Doctoral or professional degree	None	None	\$60,517 ††
25-1124	Foreign Language/Literature Teachers, Postsecondary	Doctoral or professional degree	None	None	\$62,270 ††††
25-1194	Vocational Education Teachers, Postsecondary	Bachelor's degree	Less than 5 years	None	\$43,770 ††
25-2011	Preschool Teachers, Except Special Education	Associate's degree	None	None	\$11.62
25-2012	Kindergarten Teachers, Except Special Education	Bachelor's degree	None	Internship/residency	\$55,991 ††
25-2021	Elementary School Teachers, ex.Special Ed.	Bachelor's degree	None	Internship/residency	\$58,764 ††
25-2022	Middle School Teachers, ex. Special & Voc. Ed.	Bachelor's degree	None	Internship/residency	\$58,397 ††
25-2031	Secondary Sch. Teachers, ex. Spec. & Voc. Ed.	Bachelor's degree	None	Internship/residency	\$58,795 ††
25-2032	Vocational Education Teachers, Secondary School	Bachelor's degree	Less than 5 years	Internship/residency	\$67,377 ††
25-2051	Special Education Teachers, Preschool	Bachelor's degree	None	Internship/residency	\$51,415 ††
25-2052	Special Education Teachers, Kindergarten and Elementary School	Bachelor's degree	None	Internship/residency	\$55,105 ††
25-2053	Special Education Teachers, Middle School	Bachelor's degree	None	Internship/residency	\$55,706 ††
25-2054	Special Education Teachers, Secondary School	Bachelor's degree	None	Internship/residency	\$55,624 ††
25-3021	Self-Enrichment Education Teachers	High school diploma or equivalent	Less than 5 years	None	\$13.61
25-4021	Librarians	Master's degree	None	None	\$27.34
25-4031	Library Technicians	Postsecondary non-degree award	None	None	\$15.30
25-9031	Instructional Coordinators	Master's degree	5 years or more	None	\$30.85
25-9041	Teacher Assistants	Some college, no degree	None	None	\$27,991 ††
25-9099	Education, Training, and Library Workers, All Other	Bachelor's degree	None	None	\$15.13
27-0000	Arts, Design, Entertainment, Sports, & Media Occupations				
27-1011	Art Directors	Bachelor's degree	5 years or more	None	\$37.57
27-1013	Fine Artists, inc. Painters, Sculptors & Illustrators	Bachelor's degree	None	Long-term on-the-job training	\$9.15
27-1014	Multi-Media Artists and Animators	Bachelor's degree	None	Moderate-term on-the-job training	\$24.24
27-1021	Commercial and Industrial Designers	Bachelor's degree	None	None	\$28.64
27-1023	Floral Designers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$10.86
27-1024	Graphic Designers	Bachelor's degree	None	None	\$23.15
27-1025	Interior Designers	Bachelor's degree	None	None	\$23.16
27-1026	Merchandise Displayers and Window Trimmers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.54
27-1029	Designers, All Other	Bachelor's degree	None	None	\$30.22
27-2011	Actors	Some college, no degree	None	Long-term on-the-job training	\$10.83
27-2012	Producers and Directors	Bachelor's degree	Less than 5 years	None	\$23.62
27-2022	Coaches and Scouts	Bachelor's degree	None	None	\$23,516 ††
27-2023	Umpires, Referees, and Other Sports Officials	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19,296 ††
27-2041	Music Directors and Composers	Bachelor's degree	Less than 5 years	None	\$30.35
27-2099	Entertainers and Performers, Sports and Related Workers, All Other	No formal educational credential	None	Short-term on-the-job training	\$17.94
27-3011	Radio and Television Announcers	Bachelor's degree	None	Short-term on-the-job training	\$17.33
27-3022	Reporters and Correspondents	Bachelor's degree	None	None	\$18.87
27-3031	Public Relations Specialists	Bachelor's degree	None	None	\$24.54
27-3041	Editors	Bachelor's degree	Less than 5 years	None	\$19.22
27-3042	Technical Writers	Bachelor's degree	Less than 5 years	Short-term on-the-job training	\$29.64
27-3043	Writers and Authors	Bachelor's degree	None	Moderate-term on-the-job training	\$24.20
27-3091	Interpreters and Translators	Bachelor's degree	None	Short-term on-the-job training	\$22.29
27-3099	Media and Communication Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$22.62
27-4011	Audio and Video Equipment Technicians	Postsecondary non-degree award	None	Short-term on-the-job training	\$17.47
27-4012	Broadcast Technicians	Associate's degree	None	Short-term on-the-job training	\$17.47
27-4021	Photographers	High school diploma or equivalent	None	Long-term on-the-job training	\$12.86
27-4032	Film and Video Editors	Bachelor's degree	None	None	\$20.61
29-0000	Healthcare Practitioners & Technical Occupations				
29-1011	Chiropractors	Doctoral or professional degree	None	None	\$40.43
29-1021	Dentists, General	Doctoral or professional degree	None	None	\$73.50
29-1031	Dietitians and Nutritionists	Bachelor's degree	None	Internship/residency	\$27.97
29-1051	Pharmacists	Doctoral or professional degree	None	None	\$59.72
29-1061	Anesthesiologists	Doctoral or professional degree	None	Internship/residency	N/A
29-1062	Family and General Practitioners	Doctoral or professional degree	None	Internship/residency	\$91.62
29-1063	Internists, General	Doctoral or professional degree	None	Internship/residency	\$63.93
29-1064	Obstetricians and Gynecologists	Doctoral or professional degree	None	Internship/residency	N/A
29-1065	Pediatricians, General	Doctoral or professional degree	None	Internship/residency	\$77.92

Cincinnati-Middletown Metropolitan Statistical Area (continued)
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Code	Occupational Title**	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	Median Wage, June 2016***
29-1067	Surgeons	Doctoral or professional degree	None	Internship/residency	\$78.16
29-1069	Physicians and Surgeons, All Other	Doctoral or professional degree	None	Internship/residency	\$83.51
29-1071	Physician Assistants	Master's degree	None	None	\$45.79
29-1122	Occupational Therapists	Master's degree	None	None	\$39.63
29-1123	Physical Therapists	Doctoral or professional degree	None	None	\$41.58
29-1126	Respiratory Therapists	Associate's degree	None	None	\$26.85
29-1127	Speech-Language Pathologists	Master's degree	None	None	\$35.92
29-1129	Therapists, All Other	Bachelor's degree	None	None	\$42.17
29-1131	Veterinarians	Doctoral or professional degree	None	None	\$39.96
29-1141	Registered Nurses	Bachelor's degree	None	None	\$30.66
29-1151	Nurse Anesthetists	Master's degree	None	None	\$69.69
29-1171	Nurse Practitioners	Master's degree	None	None	\$48.29
29-1181	Audiologists	Doctoral or professional degree	None	None	\$40.64
29-1199	Health Diagnosing and Treating Practitioners, All Other	Master's degree	None	None	\$40.76
29-2011	Medical and Clinical Laboratory Technologists	Bachelor's degree	None	None	\$28.88
29-2012	Medical and Clinical Laboratory Technicians	Associate's degree	None	None	\$18.95
29-2021	Dental Hygienists	Associate's degree	None	None	\$35.05
29-2031	Cardiovascular Technologists and Technicians	Associate's degree	None	None	\$23.69
29-2032	Diagnostic Medical Sonographers	Associate's degree	None	None	\$33.60
29-2033	Nuclear Medicine Technologists	Associate's degree	None	None	\$34.11
29-2034	Radiologic Technologists	Associate's degree	None	None	\$26.04
29-2035	Magnetic Resonance Imaging Technologists	Associate's degree	Less than 5 years	None	\$32.95
29-2041	Emergency Medical Technicians and Paramedics	Postsecondary non-degree award	None	None	\$15.66
29-2051	Dietetic Technicians	Associate's degree	None	None	\$22.05
29-2052	Pharmacy Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.05
29-2055	Surgical Technologists	Postsecondary non-degree award	None	None	\$21.20
29-2056	Veterinary Technologists and Technicians	Associate's degree	None	None	\$15.18
29-2057	Ophthalmic Medical Technicians	Postsecondary non-degree award	None	None	\$18.68
29-2061	Licensed Practical and Licensed Vocational Nurses	Postsecondary non-degree award	None	None	\$21.27
29-2071	Medical Records and Health Information Technicians	Postsecondary non-degree award	None	None	\$19.30
29-2081	Opticians, Dispensing	High school diploma or equivalent	None	Long-term on-the-job training	\$21.23
29-2099	Health Technologists and Technicians, All Other	High school diploma or equivalent	None	None	\$20.73
29-9011	Occupational Health and Safety Specialists	Bachelor's degree	None	None	\$33.68
29-9012	Occupational Health and Safety Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$27.02
29-9091	Athletic Trainers	Bachelor's degree	None	None	\$45.085 ††
29-9099	Healthcare Practitioners and Technical Workers, All Other	Postsecondary non-degree award	None	None	\$24.75
31-0000	Healthcare Support Occupations				
31-1011	Home Health Aides	No formal educational credential	None	Short-term on-the-job training	\$10.92
31-1013	Psychiatric Aides	High school diploma or equivalent	None	Short-term on-the-job training	\$17.52
31-1014	Nursing Assistants	Postsecondary non-degree award	None	None	\$12.30
31-1015	Orderlies	High school diploma or equivalent	None	Short-term on-the-job training	\$12.16
31-2011	Occupational Therapist Assistants	Associate's degree	None	None	\$27.94
31-2021	Physical Therapist Assistants	Associate's degree	None	None	\$26.15
31-2022	Physical Therapist Aides	High school diploma or equivalent	None	Short-term on-the-job training	\$11.97
31-9011	Massage Therapists	Postsecondary non-degree award	None	None	\$17.47
31-9091	Dental Assistants	Postsecondary non-degree award	None	None	\$17.77
31-9092	Medical Assistants	Postsecondary non-degree award	None	None	\$14.82
31-9093	Medical Equipment Preparers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.03
31-9094	Medical Transcriptionists	Postsecondary non-degree award	None	None	\$20.14
31-9095	Pharmacy Aides	High school diploma or equivalent	None	Short-term on-the-job training	\$11.88
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	High school diploma or equivalent	None	Short-term on-the-job training	\$13.02
31-9097	Phlebotomists	Postsecondary non-degree award	None	None	\$16.35
31-9099	Healthcare Support Workers, All Other	High school diploma or equivalent	None	None	\$14.66
33-0000	Protective Service Occupations				
33-1012	First-Line Superv./Mgns of Police & Detectives	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$38.45
33-1021	FL Sup/Mgns of Fire Fighting & Prev. Workers	Postsecondary non-degree award	Less than 5 years	Moderate-term on-the-job training	\$33.24
33-1099	First-Line Sup/Mgns, Protective Serv. Work., AO	High school diploma or equivalent	Less than 5 years	None	\$22.04
33-2011	Fire Fighters	Postsecondary non-degree award	None	Long-term on-the-job training	\$17.67
33-3011	Bailiffs	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.30
33-3012	Correctional Officers and Jailers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.84
33-3021	Detectives and Criminal Investigators	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$32.35
33-3051	Police and Sheriff's Patrol Officers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$31.70
33-9032	Security Guards	High school diploma or equivalent	None	Short-term on-the-job training	\$11.48
33-9091	Crossing Guards	No formal educational credential	None	Short-term on-the-job training	\$9.35
33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	No formal educational credential	None	Short-term on-the-job training	\$9.14
33-9099	Protective Service Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$14.17

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Code	Occupational Title**	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	Median Wage, June 2016***
35-0000	Food Preparation & Serving Related Occupations				
35-1011	Chefs and Head Cooks	High school diploma or equivalent	5 years or more	None	\$21.83
35-1012	FL Sup/Mgrs of Food Prep. & Serving Workers	High school diploma or equivalent	Less than 5 years	None	\$14.46
35-2011	Cooks, Fast Food	No formal educational credential	None	Short-term on-the-job training	\$9.25
35-2012	Cooks, Institution and Cafeteria	No formal educational credential	None	Short-term on-the-job training	\$12.36
35-2014	Cooks, Restaurant	No formal educational credential	Less than 5 years	Moderate-term on-the-job training	\$10.95
35-2015	Cooks, Short Order	No formal educational credential	None	Short-term on-the-job training	\$9.51
35-2021	Food Preparation Workers	No formal educational credential	None	Short-term on-the-job training	\$10.43
35-3011	Bartenders	No formal educational credential	None	Short-term on-the-job training	\$9.13
35-3021	Comb. Food Prep. & Serv. Work, inc. Fast Food	No formal educational credential	None	Short-term on-the-job training	\$9.14
35-3022	Counter Attend., Café/Food Concess/Coffee Sh.	No formal educational credential	None	Short-term on-the-job training	\$9.45
35-3031	Waiters and Waitresses	No formal educational credential	None	Short-term on-the-job training	\$9.15
35-3041	Food Servers, Nonrestaurant	No formal educational credential	None	Short-term on-the-job training	\$9.70
35-9011	Dining Room & Cafeteria Attend. & Bar Helpers	No formal educational credential	None	Short-term on-the-job training	\$9.24
35-9021	Dishwashers	No formal educational credential	None	Short-term on-the-job training	\$9.17
35-9031	Hosts & Hostesses, Rest./Lounge/Coffee Shop	No formal educational credential	None	None	\$9.18
37-0000	Building & Grounds Cleaning & Maintenance Occupations				
37-1011	FL Sup/Mgrs of Housekeeping & Janitorial Workers	High school diploma or equivalent	Less than 5 years	None	\$17.74
37-1012	FL Sup/Mgrs of Lndscap./Lawn Ser/Groundskp	High school diploma or equivalent	Less than 5 years	None	\$19.07
37-2011	Janitors & Cleaners, ex. Maids/Hseking Clean.	No formal educational credential	None	Short-term on-the-job training	\$11.22
37-2012	Maids and Housekeeping Cleaners	No formal educational credential	None	Short-term on-the-job training	\$10.19
37-3011	Landscaping and Groundskeeping Workers	No formal educational credential	None	Short-term on-the-job training	\$11.57
39-0000	Personal Care & Service Occupations				
39-1021	First-Line Sup/Mgrs of Personal Serv. Workers	High school diploma or equivalent	Less than 5 years	None	\$16.23
39-2011	Animal Trainers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$9.42
39-2021	Nonfarm Animal Caretakers	High school diploma or equivalent	None	Short-term on-the-job training	\$9.58
39-3031	Ushers, Lobby Attendants, and Ticket Takers	No formal educational credential	None	Short-term on-the-job training	\$9.40
39-3091	Amusement and Recreation Attendants	No formal educational credential	None	Short-term on-the-job training	\$9.36
39-5012	Hairdressers, Hairstylists, and Cosmetologists	Postsecondary non-degree award	None	None	\$10.43
39-9011	Child Care Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$10.63
39-9021	Personal and Home Care Aides	No formal educational credential	None	Short-term on-the-job training	\$10.24
39-9031	Fitness Trainers and Aerobics Instructors	High school diploma or equivalent	None	Short-term on-the-job training	\$13.54
39-9032	Recreation Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$10.77
39-9041	Residential Advisors	High school diploma or equivalent	None	Short-term on-the-job training	\$12.44
39-9099	Personal Care and Service Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$10.93
41-0000	Sales & Related Occupations				
41-1011	First-Line Superv./Mgrs of Retail Sales Workers	High school diploma or equivalent	Less than 5 years	None	\$18.10
41-1012	First-Line Sup./Mgrs of Non-Retail Sales Workers	High school diploma or equivalent	Less than 5 years	None	\$36.07
41-2011	Cashiers	No formal educational credential	None	Short-term on-the-job training	\$9.40
41-2021	Counter and Rental Clerks	No formal educational credential	None	Short-term on-the-job training	\$10.97
41-2031	Retail Salespersons	No formal educational credential	None	Short-term on-the-job training	\$10.60
41-3011	Advertising Sales Agents	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.32
41-3021	Insurance Sales Agents	High school diploma or equivalent	None	Moderate-term on-the-job training	\$24.15
41-3031	Securities/Commodities/Fin. Serv. Sales Agents	Bachelor's degree	None	Moderate-term on-the-job training	\$32.82
41-3041	Travel Agents	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.44
41-3099	Sales Representatives, Services, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$25.05
41-4011	Sales Rep., Wholesale & Mfg. Tech./Sci. Prod.	Bachelor's degree	None	Moderate-term on-the-job training	\$36.84
41-4012	Sales Rep., Wholesale/Mfg, ex. Tech./Sci. Prod.	High school diploma or equivalent	None	Moderate-term on-the-job training	\$30.55
41-9022	Real Estate Sales Agents	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.61
41-9031	Sales Engineers	Bachelor's degree	None	Moderate-term on-the-job training	\$45.69
41-9041	Telemarketers	No formal educational credential	None	Short-term on-the-job training	\$13.28
41-9099	Sales and Related Workers, All Other	High school diploma or equivalent	None	None	\$14.66
43-0000	Office & Administrative Support Occupations				
43-1011	First-Line Sup/Mgrs of Office & Admin. Support	High school diploma or equivalent	Less than 5 years	None	\$24.84
43-2011	Switchboard Operators, Including Answering Service	High school diploma or equivalent	None	Short-term on-the-job training	\$13.96
43-3011	Bill and Account Collectors	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.92
43-3021	Billing and Posting Clerks and Machine Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.89
43-3031	Bookkeeping, Accounting, and Auditing Clerks	Some college, no degree	None	Moderate-term on-the-job training	\$17.78
43-3051	Payroll and Timekeeping Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.98
43-3071	Tellers	High school diploma or equivalent	None	Short-term on-the-job training	\$11.97
43-3099	Financial Clerks, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$19.46
43-4021	Correspondence Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$21.21
43-4031	Court, Municipal, and License Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.53
43-4051	Customer Service Representatives	High school diploma or equivalent	None	Short-term on-the-job training	\$15.18
43-4061	Eligibility Interviewers, Government Programs	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.97
43-4071	File Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$13.71

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Code	Occupational Title**	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	Median Wage, June 2016***
43-4081	Hotel, Motel, and Resort Desk Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$9.55
43-4111	Interviewers, Except Eligibility and Loan	High school diploma or equivalent	None	Short-term on-the-job training	\$14.96
43-4121	Library Assistants, Clerical	High school diploma or equivalent	None	Short-term on-the-job training	\$12.16
43-4131	Loan Interviewers and Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$18.99
43-4141	New Accounts Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.26
43-4151	Order Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$15.02
43-4161	Human Resources Assis., ex. Payroll & Timekp	Associate's degree	None	None	\$18.51
43-4171	Receptionists and Information Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$12.80
43-4199	Information and Record Clerks, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$18.13
43-5011	Cargo and Freight Agents	High school diploma or equivalent	None	Short-term on-the-job training	\$17.90
43-5021	Couriers and Messengers	High school diploma or equivalent	None	Short-term on-the-job training	\$13.05
43-5031	Police, Fire, and Ambulance Dispatchers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.86
43-5032	Dispatchers, Except Police, Fire, and Ambulance	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.21
43-5041	Meter Readers, Utilities	High school diploma or equivalent	None	Short-term on-the-job training	\$14.54
43-5051	Postal Service Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$28.14
43-5052	Postal Service Mail Carriers	High school diploma or equivalent	None	Short-term on-the-job training	\$29.37
43-5053	Postal Service Mail Sorters/Proc/Proc Mach. Op.	High school diploma or equivalent	None	Short-term on-the-job training	\$28.11
43-5061	Production, Planning, and Expediting Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.08
43-5071	Shipping, Receiving, and Traffic Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$16.08
43-5081	Stock Clerks and Order Fillers	No formal educational credential	None	Short-term on-the-job training	\$11.91
43-5111	Weighers/Meas./Checkers/Samplers, Recordkp	High school diploma or equivalent	None	Short-term on-the-job training	\$14.36
43-6011	Executive Secretaries and Administrative Assistants	High school diploma or equivalent	Less than 5 years	None	\$25.08
43-6012	Legal Secretaries	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.85
43-6013	Medical Secretaries	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.55
43-6014	Secretaries, Except Legal, Medical, and Executive	High school diploma or equivalent	None	Short-term on-the-job training	\$17.04
43-9011	Computer Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.63
43-9021	Data Entry Keyers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.93
43-9022	Word Processors and Typists	High school diploma or equivalent	None	Short-term on-the-job training	\$18.01
43-9041	Insurance Claims and Policy Processing Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.96
43-9051	Mail Clerks & Mail Machine Op., ex. Postal Serv.	High school diploma or equivalent	None	Short-term on-the-job training	\$13.43
43-9061	Office Clerks, General	High school diploma or equivalent	None	Short-term on-the-job training	\$14.79
43-9071	Office Machine Operators, Except Computer	High school diploma or equivalent	None	Short-term on-the-job training	\$13.44
43-9199	Office and Administrative Support Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$19.06
45-0000	Farming, Fishing, & Forestry Occupations				
45-2092	Farmworkers/Laborers, Crop/Nursery/Greenhse	No formal educational credential	None	Short-term on-the-job training	\$10.91
47-0000	Construction & Extraction Occupations				
47-1011	First-Line Sup/Mgrs of Con. Trades/Extract. Work	High school diploma or equivalent	5 years or more	None	\$29.67
47-2021	Brickmasons and Blockmasons	High school diploma or equivalent	None	Apprenticeship	\$26.15
47-2031	Carpenters	High school diploma or equivalent	None	Apprenticeship	\$20.81
47-2041	Carpet Installers	No formal educational credential	None	Short-term on-the-job training	\$17.19
47-2051	Cement Masons and Concrete Finishers	No formal educational credential	None	Moderate-term on-the-job training	\$18.18
47-2061	Construction Laborers	No formal educational credential	None	Short-term on-the-job training	\$19.08
47-2071	Paving, Surfacing, and Tamping Equipment Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.54
47-2073	Operating Engineers & Other Con. Equip. Op.	High school diploma or equivalent	None	Moderate-term on-the-job training	\$24.03
47-2081	Drywall and Ceiling Tile Installers	No formal educational credential	None	Moderate-term on-the-job training	\$16.10
47-2111	Electricians	High school diploma or equivalent	None	Apprenticeship	\$23.79
47-2121	Glaziers	High school diploma or equivalent	None	Apprenticeship	\$19.82
47-2141	Painters, Construction and Maintenance	No formal educational credential	None	Moderate-term on-the-job training	\$20.06
47-2151	Pipelayers	No formal educational credential	None	Short-term on-the-job training	\$28.72
47-2152	Plumbers, Pipefitters, and Steamfitters	High school diploma or equivalent	None	Apprenticeship	\$25.22
47-2181	Roofers	No formal educational credential	None	Moderate-term on-the-job training	\$20.08
47-2211	Sheet Metal Workers	High school diploma or equivalent	None	Apprenticeship	\$20.72
47-2221	Structural Iron and Steel Workers	High school diploma or equivalent	None	Apprenticeship	\$27.00
47-3011	Helpers—Brick/Block/Stone/Tile & Marble Setters	No formal educational credential	None	Short-term on-the-job training	\$16.94
47-3012	Helpers—Carpenters	No formal educational credential	None	Short-term on-the-job training	\$13.22
47-3015	Helpers—Pipelayers/Plumbers/Pipefitters/Steamf	High school diploma or equivalent	None	Short-term on-the-job training	\$12.69
47-4011	Construction and Building Inspectors	High school diploma or equivalent	5 years or more	Moderate-term on-the-job training	\$25.97
47-4041	Hazardous Materials Removal Workers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.21
47-4051	Highway Maintenance Workers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.25
47-4099	Construction and Related Workers, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.56
49-0000	Installation, Maintenance, & Repair Occupations				
49-1011	FL Sup/Mgrs of Mechanics/Installers/Repairers	High school diploma or equivalent	Less than 5 years	None	\$29.45
49-2011	Computer, ATM, & Office Machine Repairers	Some college, no degree	None	Short-term on-the-job training	\$15.88
49-2022	Telecomm. Equip. Install/Repair, ex. Line Install	Postsecondary non-degree award	None	Moderate-term on-the-job training	\$19.80
49-2092	Electric Motor, Power Tool, and Related Repairers	Postsecondary non-degree award	None	Long-term on-the-job training	\$32.69
49-2094	Electrical/Electronics Repair, Comm/Indus Equip.	Postsecondary non-degree award	None	Long-term on-the-job training	\$27.76

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Code	Occupational Title**	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	Median Wage, June 2016***
49-2097	Electronic Home Entertainm Equip. Install/Repair	Postsecondary non-degree award	None	Short-term on-the-job training	\$16.52
49-3011	Aircraft Mechanics and Service Technicians	Postsecondary non-degree award	None	None	\$28.40
49-3021	Automotive Body and Related Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$19.02
49-3023	Automotive Service Technicians and Mechanics	Postsecondary non-degree award	None	Short-term on-the-job training	\$16.25
49-3031	Bus & Truck Mechanics & Diesel Engine Spec.	High school diploma or equivalent	None	Long-term on-the-job training	\$22.46
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	High school diploma or equivalent	None	Long-term on-the-job training	\$21.90
49-3053	Outdoor Power Equip. & Other Sm Engine Mech.	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.14
49-3093	Tire Repairers and Changers	High school diploma or equivalent	None	Short-term on-the-job training	\$9.91
49-9011	Mechanical Door Repairers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.21
49-9021	Heating, AC, & Refrigeration Mechanics/Installers	Postsecondary non-degree award	None	Long-term on-the-job training	\$24.67
49-9041	Industrial Machinery Mechanics	High school diploma or equivalent	None	Long-term on-the-job training	\$24.58
49-9043	Maintenance Workers, Machinery	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.57
49-9044	Millwrights	High school diploma or equivalent	None	Apprenticeship	\$27.06
49-9051	Electrical Power-Line Installers and Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$32.59
49-9052	Telecommunications Line Installers and Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$22.66
49-9062	Medical Equipment Repairers	Associate's degree	None	Moderate-term on-the-job training	\$28.15
49-9069	Precision Instrument and Equipment Repairers, All Other	High school diploma or equivalent	None	Long-term on-the-job training	\$24.58
49-9071	Maintenance and Repair Workers, General	High school diploma or equivalent	None	Long-term on-the-job training	\$18.98
49-9091	Coin/Vending/Amusement Machine Serv/Repair	High school diploma or equivalent	None	Short-term on-the-job training	\$15.30
49-9098	Helpers--Installation, Maintenance, and Repair Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$12.18
49-9099	Installation, Maintenance, and Repair Workers, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.88
51-0000	Production Occupations				
51-1011	FL Sup/Mgrs of Production/Operating Workers	High school diploma or equivalent	Less than 5 years	None	\$29.28
51-2021	Coil Winders, Tapers, and Finishers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.56
51-2022	Electrical and Electronic Equipment Assemblers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.68
51-2023	Electromechanical Equipment Assemblers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.61
51-2031	Engine and Other Machine Assemblers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$25.95
51-2041	Structural Metal Fabricators and Fitters	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.76
51-2092	Team Assemblers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.84
51-2099	Assemblers and Fabricators, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.77
51-3011	Bakers	No formal educational credential	None	Long-term on-the-job training	\$11.81
51-3021	Butchers and Meat Cutters	No formal educational credential	None	Long-term on-the-job training	\$16.56
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	No formal educational credential	None	Short-term on-the-job training	\$11.05
51-3023	Slaughterers and Meat Packers	No formal educational credential	None	Short-term on-the-job training	\$11.77
51-3092	Food Batchmakers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.01
51-3099	Food Processing Workers, All Other	No formal educational credential	None	Moderate-term on-the-job training	\$12.88
51-4011	Computer-Controlled Machine Tool Oper., M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.69
51-4012	Numerical Tool and Process Control Programmers	High school diploma or equivalent	None	Long-term on-the-job training	\$28.77
51-4021	Extruding & Drawing Machine Setters, O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.89
51-4031	Cutting/Punching/Press Machine S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.54
51-4033	Grind/Lapping/Polish/Buf Mach. Tool S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.42
51-4034	Lathe & Turning Machine Tool Setters, O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.56
51-4035	Milling & Planing Machine Setters, O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.98
51-4041	Machinists	High school diploma or equivalent	None	Long-term on-the-job training	\$21.29
51-4072	Molding/Coremaking/Casting Mach. S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.47
51-4111	Tool and Die Makers	High school diploma or equivalent	None	Long-term on-the-job training	\$25.39
51-4121	Welders, Cutters, Solderers, and Brazers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.20
51-4122	Welding/Soldering/Brazing Machine Setters, O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.85
51-4193	Plating & Coating Machine Setters, O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.18
51-5111	Prepress Technicians and Workers	Postsecondary non-degree award	None	None	\$20.28
51-5112	Printing Press Operators and Job Printers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.12
51-5113	Print Binding and Finishing Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$14.29
51-6011	Laundry and Dry-Cleaning Workers	No formal educational credential	None	Short-term on-the-job training	\$10.04
51-6021	Pressers, Textile, Garment, and Related Materials	No formal educational credential	None	Short-term on-the-job training	\$9.44
51-6031	Sewing Machine Operators	No formal educational credential	None	Short-term on-the-job training	\$12.98
51-7011	Cabinetmakers and Bench Carpenters	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.22
51-7041	Sawing Mach. Setters/Operators/Tenders, Wood	High school diploma or equivalent	None	Short-term on-the-job training	\$13.96
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	High school diploma or equivalent	None	Short-term on-the-job training	\$13.59
51-8013	Power Plant Operators	High school diploma or equivalent	None	Long-term on-the-job training	\$34.89
51-8021	Stationary Engineers and Boiler Operators	High school diploma or equivalent	None	Long-term on-the-job training	\$25.93
51-8031	Water/Liquid Waste Treatment Plant/System Op.	High school diploma or equivalent	None	Long-term on-the-job training	\$21.43
51-8091	Chemical Plant and System Operators	High school diploma or equivalent	None	Long-term on-the-job training	\$26.23
51-9011	Chemical Equipment Operators/Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.99
51-9022	Grinding and Polishing Workers, Hand	No formal educational credential	None	Moderate-term on-the-job training	\$15.53
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.71
51-9041	Extrud/Form/Pressing/Compacting Mach. S/O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.55

**Cincinnati-Middletown Metropolitan Statistical Area (continued)
Occupational Employment* Projections Report, 2014-2024**

Code	Occupational Title**	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	Median Wage, June 2016***
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.04
51-9071	Jewelers and Precious Stone and Metal Workers	High school diploma or equivalent	None	Long-term on-the-job training	\$14.64
51-9081	Dental Laboratory Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.92
51-9111	Packaging and Filling Machine Operators/Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.28
51-9121	Coating/Painting/Spraying Machine Setters, O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.55
51-9122	Painters, Transportation Equipment	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.66
51-9192	Cleaning/Washing/Metal Pickling Equipment O/T	No formal educational credential	None	Moderate-term on-the-job training	\$14.62
51-9195	Molders/Shapers/Casters, ex. Metal & Plastic	High school diploma or equivalent	None	Long-term on-the-job training	\$14.95
51-9196	Paper Goods Machine Setters, Operators, and Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.21
51-9198	Helpers—Production Workers	No formal educational credential	None	Short-term on-the-job training	\$11.49
51-9199	Production Workers, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.32
53-0000	Transportation & Material Moving Occupations				
53-1031	FL Sup/Mgr of Trans/Mat-Mov. Mach & Veh Op	High school diploma or equivalent	Less than 5 years	None	\$27.08
53-2012	Commercial Pilots	High school diploma or equivalent	None	Moderate-term on-the-job training	\$75,543 ††
53-3021	Bus Drivers, Transit and Intercity	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.01
53-3022	Bus Drivers, School	High school diploma or equivalent	None	Short-term on-the-job training	\$17.70
53-3032	Truck Drivers, Heavy and Tractor-Trailer	Postsecondary non-degree award	None	Short-term on-the-job training	\$20.86
53-3033	Truck Drivers, Light or Delivery Services	High school diploma or equivalent	None	Short-term on-the-job training	\$14.91
53-3041	Taxi Drivers and Chauffeurs	No formal educational credential	None	Short-term on-the-job training	\$10.09
53-3099	Motor Vehicle Operators, All Other	No formal educational credential	None	Short-term on-the-job training	\$9.68
53-6021	Parking Lot Attendants	No formal educational credential	None	Short-term on-the-job training	\$9.41
53-6031	Service Station Attendants	No formal educational credential	None	Short-term on-the-job training	\$10.87
53-6051	Transportation Inspectors	High school diploma or equivalent	None	Moderate-term on-the-job training	\$44.30
53-7011	Conveyor Operators/Tenders	No formal educational credential	None	Short-term on-the-job training	\$16.74
53-7021	Crane and Tower Operators	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$21.33
53-7051	Industrial Truck and Tractor Operators	No formal educational credential	None	Short-term on-the-job training	\$15.32
53-7061	Cleaners of Vehicles and Equipment	No formal educational credential	None	Short-term on-the-job training	\$9.77
53-7062	Laborers/Freight/Stock/Material Movers, Hand	No formal educational credential	None	Short-term on-the-job training	\$12.95
53-7063	Machine Feeders and Offbearers	No formal educational credential	None	Short-term on-the-job training	\$15.92
53-7081	Refuse and Recyclable Material Collectors	No formal educational credential	None	Short-term on-the-job training	\$16.60

*Occupations with 100 or more workers.

† National Wages

†† Certain occupations only report wages at the annual level - for elementary and secondary teachers this typically reflects a 9 1/2 month school year.

††† Statewide Wages

†††† Statewide Annual Wages

****Abbreviations**

AO = All Other

FL Sup/Mgrs = First-Line Supervisors/Managers

M/P = Metal and Plastic

PS = Postsecondary

O/T = Operators and Tenders

S/O/T = Setters, Operators and Tenders

***2015 wages statistically aged to June 2016

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, June 2017.

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- Be known as an important and reliable source for information solutions that support workforce development goals and outcomes.

Acknowledgments: The Workforce Research Section produced this report under the direction of Bureau Chief Coretta Pettway. For further information, visit <http://OhioLMI.com> or call the Ohio Bureau of Labor Market Information at **1-888-296-7541** option 6, or **(614) 752-9494**.

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Appendix C: NACE 2019 Job Outlook Survey

Job Outlook 2019



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About the *Job Outlook 2019 Survey*

The *Job Outlook* survey is a forecast of hiring intentions of employers as they relate to new college graduates. Each year, the National Association of Colleges and Employers (NACE) surveys its employer members about their hiring plans and other employment-related issues in order to project the market for new college graduates for the current class and to assess a variety of conditions that may influence that market.

From August 1, 2018, through October 8, 2018, data were collected for the *Job Outlook 2019* survey. A total of 172 surveys were returned—an 18.5 percent response rate.

Of those responding, 7.6 percent of respondents are from New England, 8.7 percent are from the Plains, 14 percent are from the Mideast, 14.5 percent are from the Southeast, 14.5 percent are from the Rocky Mountain/Far West, 15.1 percent are from the Southwest, and 25.6 percent are from the Great Lakes. For additional information about the respondents, see the Appendix.

Totals throughout the report may not equal 100 percent due to rounding.

NACE expects to provide a formal update of job market information once more during the 2018-19 academic year: The *Job Outlook 2019 Spring Update* survey (data collected in February – March) will give NACE members a final update on hiring for 2018-19 graduates. Results will be available in early April.

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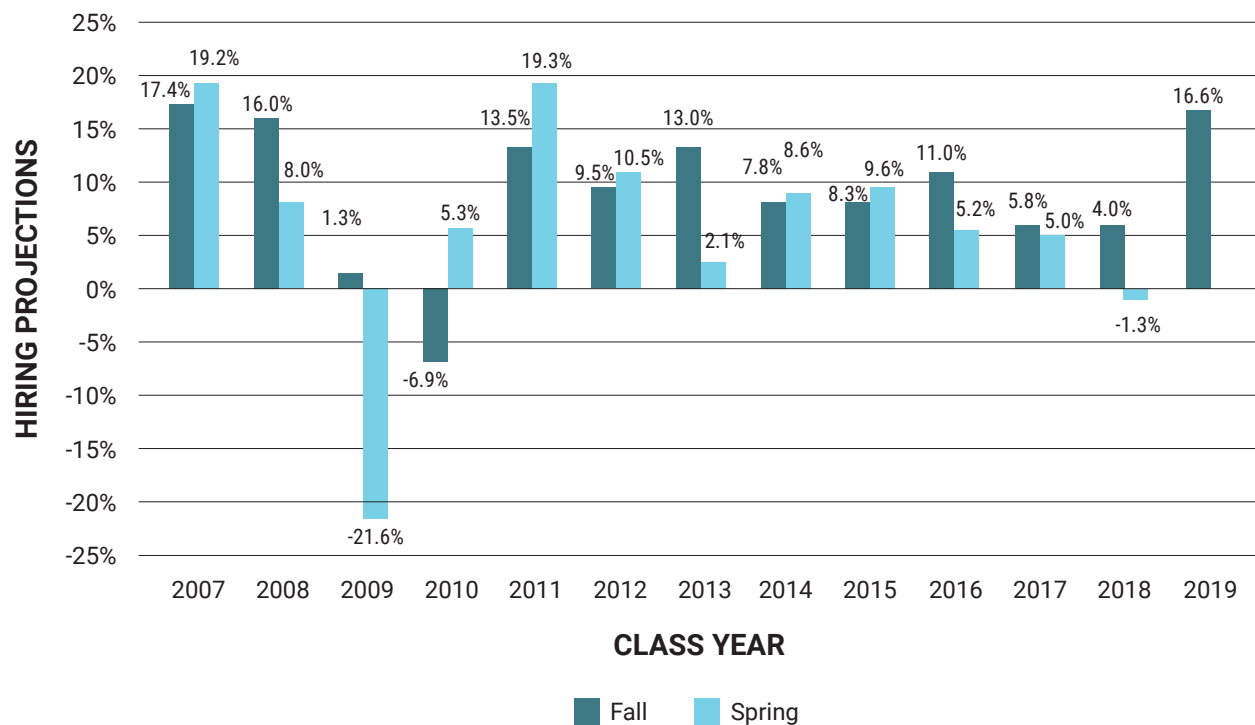
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U.S. College Hiring to Increase by Almost 17 Percent

Employers plan to hire 16.6 percent more new graduates from the Class of 2019 than they did from the Class of 2018 for positions in the United States. (See Figure 1.) This comes as welcome news, especially since employers reported an overall decrease in hiring for Class of 2018 graduates. This year marks the best initial hiring outlook since the Class of 2007.*

FIGURE 1

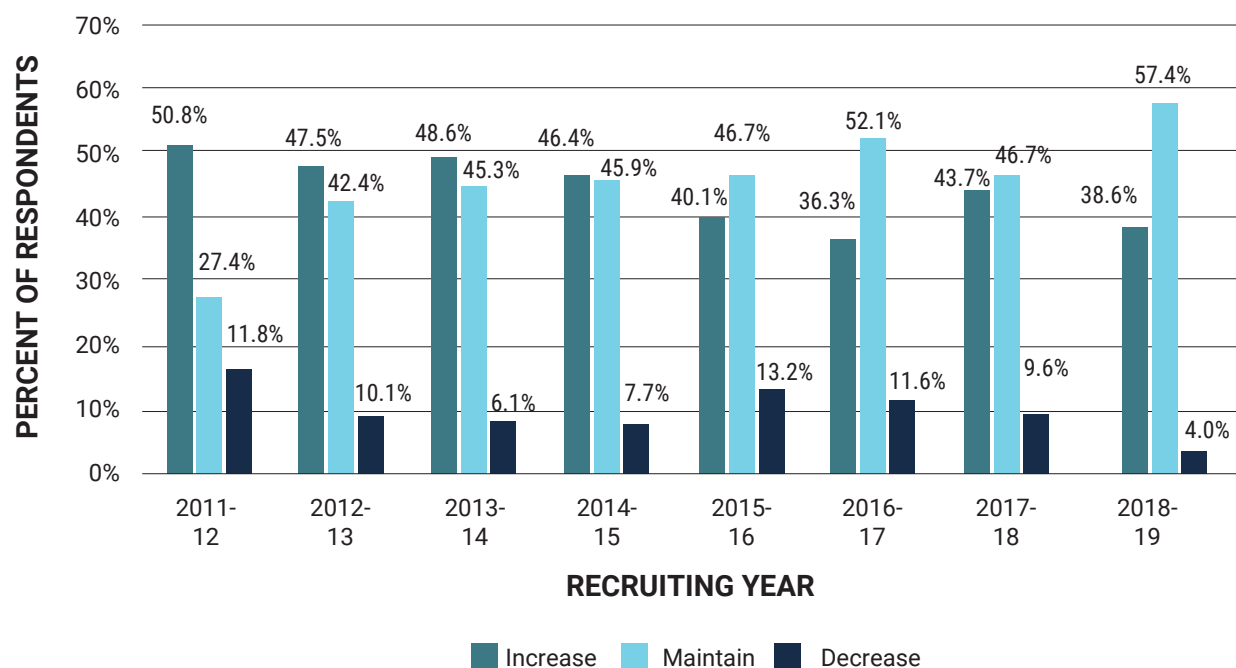
Job Outlook Hiring Projections, 2007 – 2019



*Projections prior to 2014 were for both international and U.S. positions.

Over the past three recruiting years, the largest group of employers indicated plans to maintain their individual hiring numbers. The trend continues this year as 57.4 percent of employers plan to keep their number of college hires the same. (See Figure 2.) While 38.6 percent of responding employers plan to increase their hires, perhaps the most encouraging finding is that just 4 percent of respondents will decrease their hires. This represents less than half of last year's respondents (9.6 percent) that planned to decrease hires, and it is the smallest group with these plans in the past seven years.

FIGURE 2
Employers' Hiring Expectations



Respondents with plans to increase their new college hiring provided key factors for doing so that yielded common themes. An improved economy, company growth, anticipated retirements, and a focus on early talent/succession planning were reasons cited almost universally among these respondents. In addition, several others in this group reported that they plan to concentrate on converting more interns to full-time hires, thus increasing their overall hiring numbers.

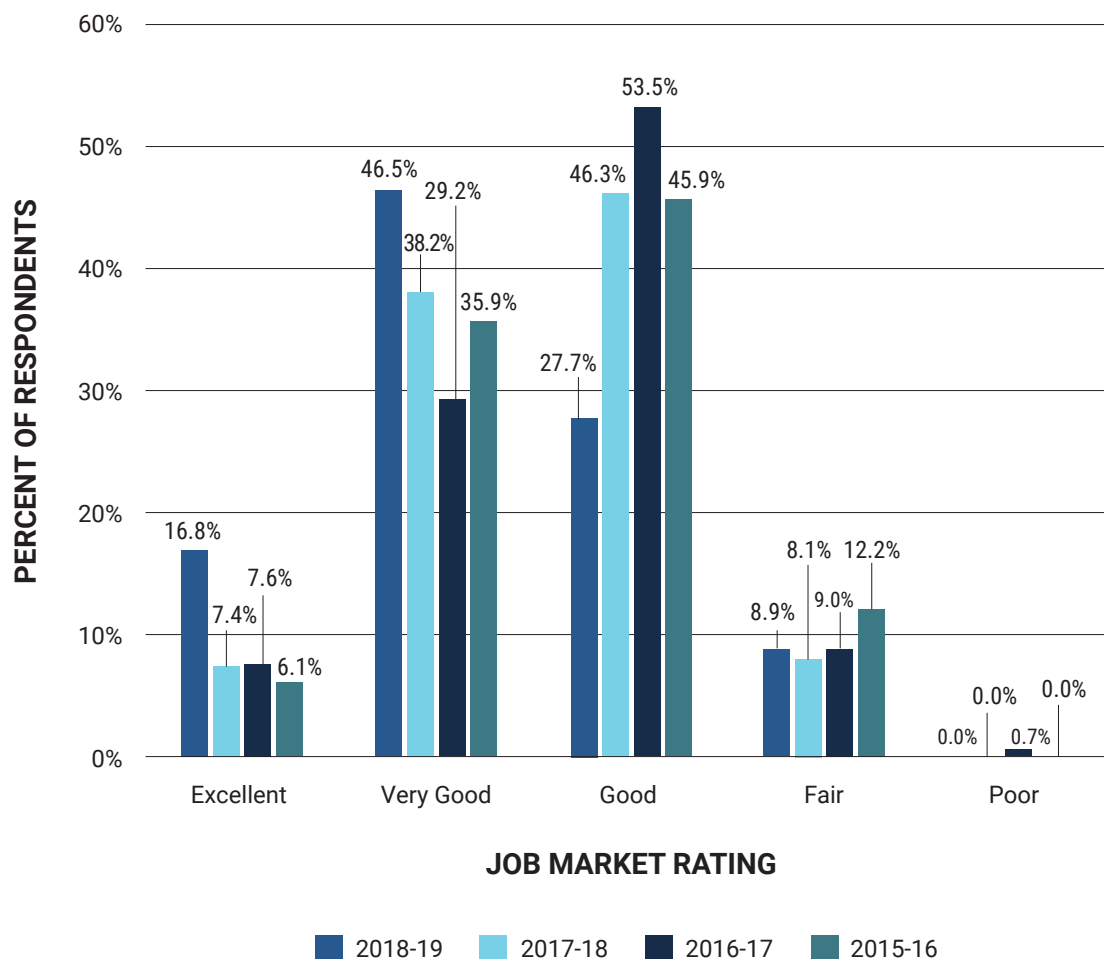
Most of the respondents that are maintaining their new college hiring numbers indicated that the growth in their respective companies is steady, so they have no need to increase or decrease their numbers. Other respondents reported that they hired aggressively in the past few years, so they will maintain college hiring at their current levels.

Among the small number of respondents that are decreasing their hiring numbers, not all cited negative factors. A few mentioned that they, too, had hired more graduates last year than expected, so they will cut back slightly this year. Others noted college recruiting programs that are currently on hold or being revamped, hence a decrease in hires. Meanwhile, just one respondent indicated that it will hire fewer new college graduates because it expects smaller growth in the organization during the coming year.

Ratings indicate strength of job market

The ratings that employers give the 2018-19 job market underscore its strength. With the unemployment rate at a historic low, it is not surprising that nearly half of respondents rate the job market as “very good.” This also bucks the trend seen over the last three years when most employers rated the job market as “good.” Additionally, the group of employers providing an “excellent” job market rating has jumped from 7.4 percent last year to almost 17 percent this year. Once again, no employers rated the job market as “poor.” (See Figure 3.)

FIGURE 3
Employers Rate the Job Market for 2018-19 Graduates

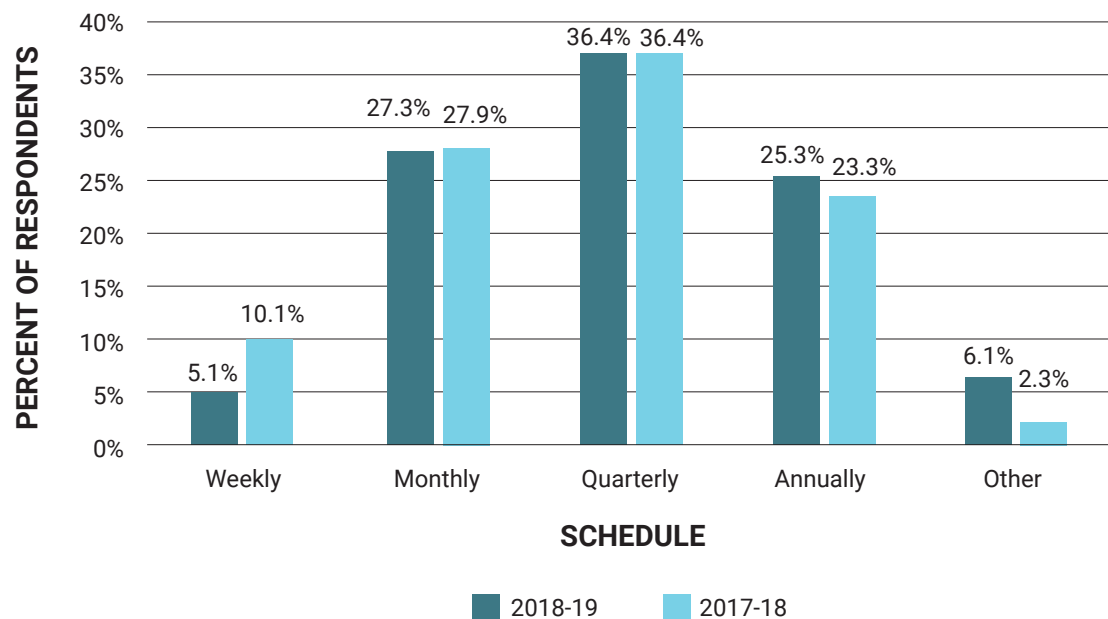


Plans for reassessing hiring show little change

In this “very good” job market, employers appear to have their hiring needs under control and, for the most part, will continue to reassess these needs on a quarterly schedule, which is identical to last year’s result. (See Figure 4.) Their counterparts that will reassess hiring needs on either a monthly or an annual basis also remain nearly unchanged. There is, however, a drop in the group reassessing needs on a weekly basis this year. Interestingly, most of the respondents that indicated “other” schedules for reassessing hiring needs either said they will not reassess their college hiring needs at all or they will do so on an “as-needed” basis.

FIGURE 4

Employers’ Plans to Reassess Hiring Needs



Fall vs. spring recruiting

With hiring cycles continuously being pushed up, it stands to reason that the fall is the more active season for college recruiting. In fact, this is the fourth consecutive year respondents report they will be conducting approximately 70 percent of their college recruiting in the fall, with the remainder to be conducted in the spring. (See Figure 5.)

Another potential trend to watch is that, this year, almost 15 percent of respondents are reporting that they will do 100 percent of their college recruiting in the fall, up from 13 percent last year.

FIGURE 5
Percentage of College
Recruiting Conducted
In Fall vs. Spring,
2014-2019

<i>Job Outlook Survey Year</i>	Fall	Spring
2019	71%	29%
2018	70%	30%
2017	72%	28%
2016	71%	29%
2015	66%	34%
2014	62%	38%

Among the respondents that plan to recruit in spring 2019, almost 70 percent indicate that they have firm or tentative plans in place. Just 1 percent of respondents that will be on campus in the spring will not be hiring, and 12.1 percent are unsure of their spring 2019 recruiting plans. With almost 20 percent conducting all recruiting in the fall, the group that is unsure of its spring 2019 plans may be made up of those that only recruit in the spring to finish their college recruiting quotas. (See Figure 6.)

FIGURE 6
Spring 2019
Recruiting Plans

Recruiting Plans	Spring 2019	Spring 2018
Firm recruiting plans	37.4%	37.1%
Tentative plans in place	30.3%	32.6%
All recruiting in fall	19.2%	18.2%
Unsure	12.1%	10.6%
Not hiring	1.0%	1.5%

Hiring by industry

Of the 10 industries that provided hiring projections in this report, eight are showing overall increases in college hiring; the remaining two report overall decreases. (See Figure 7.) While just two of 13 industries responding to last year's *Job Outlook 2018* survey reported overall decreases, the numerical percentage increases in hiring this year far outweigh the decreases.

For instance, nearly all of the industries that are increasing overall hires this year show double-digit bumps. This was not the case last year, when just four industries indicated double-digit percentage increases.

The three largest hiring increases this year are seen in the chemical (pharmaceutical) manufacturing, computer and electronics manufacturing, and oil and gas extraction industries. All three industries are reporting that they will hire at least 30 percent more new college graduates this year than they did last year.

FIGURE 7

Total Change in Hiring, by Industry

Industry	# of 2019 Projected Hires	# of 2018 Actual Hires	% Change	# of Respondents
Oil & Gas Extraction	790	600	31.7%	7
Construction	801	840	-4.7%	6
Chemical (Pharmaceutical) Mfg.	687	503	36.6%	9
Computer & Electronics Mfg.	3,465	2,562	35.2%	13
Misc. Mfg.	999	794	25.8%	15
Information	351	337	4.2%	5
Finance, Insurance & Real Estate	13,385	11,238	19.1%	27
Engineering Services	282	280	0.5%	7
Misc. Professional Services	1,569	1,361	15.3%	9
Government	3,084	3,122	-1.2%	5

Chemical (pharmaceutical) manufacturers, which reported an overall hiring increase of 36.6 percent, have 80 percent of respondents with either firm or tentative plans in place for spring 2019 recruiting. They also rated the job market within their industry just above the “very good” rating. (See Figures 8 and 9.)

Also reporting a large increase in hiring, computer and electronics manufacturers have almost 38 percent of their respondents doing all their recruiting this fall. Half of their respondents have firm or tentative plans for spring 2019 recruiting. They rate the job market within their industry somewhere between “good” and “very good.”

FIGURE 8
Spring 2019 Recruiting Plans, by Industry

Industry	Firm plans	Tentative plans	All in Fall	Not Hiring	Unsure	# of Respondents
Chemical (Pharmaceutical) Mfg.	40.0%	40.0%	0.0%	20.0%	0.0%	5
Computer & Electronics Mfg.	37.5%	12.5%	37.5%	0.0%	12.5%	8
Misc. Mfg.	22.2%	55.6%	5.6%	0.0%	16.7%	18
Information	16.7%	50.0%	0.0%	0.0%	33.3%	6
Finance, Insurance, & Real Estate	37.5%	31.3%	25.0%	0.0%	6.3%	16
Engineering Services	0.0%	20.0%	40.0%	0.0%	40.0%	5
Misc. Prof. Services	83.3%	16.7%	0.0%	0.0%	0.0%	6
Government	40.0%	20.0%	20.0%	0.0%	20.0%	5

FIGURE 9

Job Market Ratings, by Industry*

Industry	Average Rating	Number of Respondents
Engineering Services	4.40	5
Chemical (Pharmaceutical) Mfg.	4.20	5
Finance, Insurance, & Real Estate	4.00	16
Misc. Prof. Services	3.83	6
Government	3.60	5
Computer & Electronics Mfg.	3.33	9
Misc. Mfg.	3.33	18
Information	3.33	6

*5-point scale, where 1=Poor, 2=Fair, 3=Good, 4=Very Good, and 5=Excellent.

Hiring by region

In the *Job Outlook 2018* survey, data were reported for just four geographic regions. This year, NACE included seven regions as defined by the Bureau of Economic Analysis.

Increases in hiring are shown across all regions, with New England boasting the highest projected gain of 31.2 percent. (See Figure 10.) The Southwest, Plains, and Rocky Mountain/Far West regions also have double-digit projected increases, and in all cases, there are no respondents with plans to decrease hiring. (See Figure 11.) While the Mideast also has an overall increase reported in the double-digits, slightly more than 14 percent of respondents in this region have plans to decrease their hiring numbers.

FIGURE 10

Total Change in Hiring, by Region

Region	# of 2019 Projected Hires	# of 2018 Actual Hires	% Change	# of Respondents
New England	3,561	2,714	31.2%	11
Mideast	5,725	4,864	17.7%	21
Great Lakes	1,961	1,938	1.2%	32
Plains	11,459	9,583	19.6%	12
Southeast	5,720	5,278	8.4%	19
Southwest	1,669	1,390	20.0%	22
Rocky Mountain/Far West	1,589	1,395	13.9%	14

FIGURE 11
Hiring Expectations by Region, by Percent of Respondents

Region	Increase	Maintain	Decrease
New England	42.9%	57.1%	0.0%
Mideast	50.0%	35.7%	14.3%
Great Lakes	21.4%	75.0%	3.6%
Plains	54.5%	45.5%	0.0%
Southeast	29.4%	64.7%	5.9%
Southwest	53.3%	46.7%	0.0%
Rocky Mountain/Far West	44.4%	55.6%	0.0%

In some regions, employers' plans for spring 2019 recruiting differ slightly from their overall hiring projections and expectations. (See Figure 12.) In the Mideast region, for example, almost 30 percent of respondents will do all their hiring in the fall with the remaining respondents having either firm or tentative plans for the spring. While there are no respondents here that are not hiring or are unsure of their spring 2019 recruiting plans, 14.3 percent of Mideast respondents are planning to decrease college hiring—the highest percentage of all seven regions.

In contrast, in the Southwest region, almost 7 percent of respondents will not be on campus in spring 2019 because they are not hiring. Yet, this is the same region with a high percentage of employers (53.3 percent) that are increasing their college hires and with an overall hiring increase of 20 percent.

Only in the Plains region is there consistency in all three factors. The overall hiring increase is 19.6 percent. Respondents increasing their hiring account for 54.5 percent of the region, with the remaining 45.5 percent maintaining their hires. In addition, 100 percent of respondents in the Plains region report either firm or tentative plans for spring 2019 recruiting.

FIGURE 12

Spring 2019 Recruiting Plans, by Region

Region	Firm plans	Tentative plans	All in Fall	Not Hiring	Unsure	# of Respondents
New England	42.9%	14.3%	14.3%	0.0%	28.6%	7
Mideast	21.4%	50.0%	28.6%	0.0%	0.0%	14
Great Lakes	29.6%	37.0%	25.9%	0.0%	7.4%	27
Plains	54.5%	45.5%	0.0%	0.0%	0.0%	11
Southeast	64.7%	17.6%	11.8%	0.0%	5.9%	17
Southwest	26.7%	13.3%	26.7%	6.7%	26.7%	15
Rocky Mountain/Far West	25.0%	25.0%	12.5%	0.0%	37.5%	8



Who Is in Demand?

Demand by degree level

Fully 100 percent of this year's survey respondents plan to hire bachelor's degree graduates from the Class of 2019. (See Figure 13.) This was also true for the Class of 2017, and, for the most part, for the Class of 2018.

Not only does the composition of new hires at the bachelor's level remain generally the same, but respondents are also keeping their new hire percentages steady at the associate and advanced-degree levels.

FIGURE 13

Hiring Expectations, by Degree Level

Degree Level	Average % of New College Hires in 2018-19	Number of Respondents Hiring 2018-19	% of Total Respondents Hiring in 2018-19	Average % of New College Hires in 2017-18	Number of Respondents That Hired in 2017-18	% of Total Respondents That Hired in 2017-18
Associate	3.8%	16	19.3%	2.4%	18	15.4%
Bachelor's	83.1%	83	100.0%	83.4%	116	99.1%
Master's	10.6%	58	69.9%	12.1%	83	71.0%
Doctorate	2.0%	18	21.7%	1.7%	26	22.2%
Professional (J.D., M.D., etc.)	0.5%	6	7.2%	0.4%	11	9.4%

Demand by broad category is identical to last year, with business, engineering, and computer science as the top disciplines. This holds true at the associate, bachelor's, and master's degree levels, although not in the same order. Meanwhile, math and sciences are most in demand at the doctorate level. (See Figures 14 and 15.)

FIGURE 14

Top Degrees in Demand, by Broad Category

Broad Category	Number of Respondents That Will Hire	% of Total Respondents (N=101)
Business	84	83.2%
Engineering	83	82.2%
Computer & Information Sciences	63	62.4%
Math & Sciences	35	34.7%
Communications	19	18.8%
Social Sciences	21	20.8%
Humanities	6	5.9%
Agriculture & Natural Resources	6	5.9%
Healthcare	5	5.0%
Education	1	1.0%

FIGURE 15

Top Degrees in Demand, by Degree Level and Broad Category

	Broad Category	Number of Respondents That Will Hire	% of Total Respondents (N=101)
ASSOCIATE	Business	4	4.0%
	Computer & Information Sciences	4	4.0%
	Engineering	4	4.0%
	Communications	2	2.0%
	Agriculture & Natural Resources	1	1.0%
	Healthcare	1	1.0%
	Humanities	1	1.0%
	Math & Sciences	1	1.0%
	Social Sciences	1	1.0%
	Education	0	0.0%
BACHELOR'S	Engineering	82	81.2%
	Business	79	78.2%
	Computer & Information Sciences	61	60.4%
	Math & Sciences	32	31.7%
	Social Sciences	20	19.8%
	Communications	19	18.8%
	Agriculture & Natural Resources	6	5.9%
	Humanities	6	5.9%
	Healthcare	5	5.0%
	Education	1	1.0%
MASTER'S	Business	46	45.5%
	Engineering	30	29.7%
	Computer & Information Sciences	27	26.7%
	Math & Sciences	17	16.8%
	Social Sciences	4	4.0%
	Healthcare	3	3.0%
	Agriculture & Natural Resources	2	2.0%
	Education	1	1.0%
	Humanities	1	1.0%
	Communications	0	0.0%
DOCTORATE	Math & Sciences	10	9.9%
	Engineering	9	8.9%
	Computer & Information Sciences	6	5.9%
	Business	3	3.0%
	Healthcare	2	2.0%
	Social Sciences	1	1.0%
	Education	1	1.0%
	Agriculture & Natural Resources	0	0.0%
	Communications	0	0.0%
	Humanities	0	0.0%

Top majors in demand

At the bachelor's degree level, employer demand by individual major has shifted back to a mix of both business and technical degrees. (See Figure 16.) Last year, finance and accounting were also the top two bachelor's degree majors in demand, but there were no engineering majors among the top 10.

This year, mechanical engineering, electrical engineering, and computer engineering are interspersed throughout the list. In addition, computer science is fourth on the list and information science is seventh (both held the same positions last year).

FIGURE 16
Top Degrees in Demand (Bachelor's Degree Level)

Major	# of Respondents That Will Hire	% of Total Respondents That Will Hire
Finance	65	64.4%
Accounting	62	61.4%
Mechanical Engineering	57	56.4%
Computer Science	56	55.4%
Business Administration/Mgmt.	55	54.5%
Electrical Engineering	53	52.5%
Information Science	52	51.5%
Logistics/Supply Chain	49	48.5%
Management Information Systems	49	48.5%
Computer Engineering	46	45.5%

Demand for individual majors within each of the seven broad categories is shown in Figures 17 through 23. Results include:

- Nearly 80 percent of respondents hiring graduates with business degrees are seeking finance and accounting majors. These are also the top two overall bachelor's degree majors in demand and will be targeted by at least 60 percent of total respondents.
- The top three engineering fields in demand—mechanical, electrical, and computer engineering—also made the top 10 list of overall majors in demand at the bachelor's degree level. More than half of respondents hiring engineering graduates will hire these majors, and approximately half of total respondents have plans to recruit them.
- More than 60 percent of employers that will hire computer sciences majors will hire all three reported individual majors—computer science, information sciences and systems, and software applications.

- Three-quarters of respondents hiring graduates in math and sciences will specifically hire mathematics majors. Slightly more than one-third of these respondents will also recruit chemistry majors, but less than 20 percent of respondents are interested in the remaining science fields—biology, environmental science, physics, construction science, and geology.
- While graduates earning social sciences degrees will be recruited by 19.8 percent of total respondents, 95 percent of those that plan to recruit them will hire economics majors. Political science/government and psychology majors will also be targeted, but by just 35 percent of those respondents hiring graduates with social science degrees.
- Less than 6 percent of total respondents have plans to hire humanities majors. English and liberal arts/general studies will receive the most interest.

FIGURE 17

Top Business Degrees in Demand (Bachelor's Degree Level)

Major	# of Respondents That Will Hire	% of Respondents Hiring Business Degrees (N=79)
Finance	65	82.3%
Accounting	62	78.5%
Business Administration/Mgmt.	55	69.6%
Management Information Systems	49	62.0%
Logistics/Supply Chain	49	62.0%
Marketing	43	54.4%
Economics	40	50.6%
Sales	36	45.6%
Human Resources	32	40.5%
International Business	20	25.3%
Actuary	15	19.0%
Hospitality Management	8	10.1%

FIGURE 18

Top Engineering Degrees in Demand (Bachelor's Degree Level)

Major	# of Respondents That Will Hire	% of Respondents Hiring Engineering Degrees (N=82)
Mechanical Engineering	57	69.5%
Electrical Engineering	53	64.6%
Computer Engineering	46	56.1%
Software Engineering	39	47.6%
Industrial Engineering	33	40.2%
Chemical Engineering	31	37.8%
Systems Engineering	22	26.8%
Materials Engineering	21	25.6%
Engineering Technology	20	24.4%
Civil Engineering	19	23.2%
Environmental Engineering	19	23.2%
Aerospace/Aeronautical Engineering	11	13.4%
Biomedical Engineering	10	12.2%
Petroleum Engineering	4	4.9%
Nuclear Engineering	2	2.4%

FIGURE 19

Top Computer and Information Science Degrees in Demand (Bachelor's Degree Level)

Major	# of Respondents That Will Hire	% of Respondents Hiring Computer & Information Science Degrees (N=61)
Computer Science	56	91.8%
Information Sciences & Systems	52	85.2%
Software Applications	39	63.9%

FIGURE 20

Top Math and Science Degrees in Demand (Bachelor's Degree Level)

Major	# of Respondents That Will Hire	% of Respondents Hiring Math & Science Degrees (N=32)
Mathematics	24	75.0%
Chemistry	11	34.4%
Biology	6	18.8%
Environmental Science	6	18.8%
Physics	6	18.8%
Construction Science	5	15.6%
Geology	3	9.4%

FIGURE 21

Top Communications Degrees in Demand (Bachelor's Degree Level)

Major	# of Respondents That Will Hire	% of Respondents Hiring Communications Degrees (N=19)
Communications	19	100.0%
Public Relations	13	68.4%
Advertising	12	63.2%
Journalism	11	57.9%

FIGURE 22

Top Social Sciences Degrees in Demand (Bachelor's Degree Level)

Major	# of Respondents That Will Hire	% of Respondents Hiring Social Sciences Degrees (N=20)
Economics	19	95.0%
Political Science/International Relations	7	35.0%
Psychology	7	35.0%
Sociology	5	25.0%
Social Work	3	15.0%

FIGURE 23

Top Humanities Degrees in Demand (Bachelor's Degree Level)

Major	# of Respondents That Will Hire	% of Respondents Hiring Humanities Degrees (N=6)
English	5	83.3%
Liberal Arts/General Studies	5	83.3%
History	3	50.0%
Foreign Language & Literature	3	50.0%
Philosophy	3	50.0%
Visual & Performing Arts	3	50.0%
Area & Gender Studies	3	50.0%

Demand for individual majors at the master's degree level continues to include a mix of STEM and business majors, with computer science and M.B.A.s as the majors most in demand. (See Figure 24.) This was also the case last year. Four engineering majors—computer, software, electrical, and mechanical engineering—are also included on the list, and accounting and finance majors field interest from almost 20 percent of employers hiring graduates with master's degrees.

FIGURE 24

Top Degrees in Demand (Master's Degree Level)

Major	# of Respondents That Will Hire	% of Total Respondents That Will Hire
Computer Science	25	24.8%
Business Administration/Mgmt. (M.B.A.)	24	23.8%
Computer Engineering	23	22.8%
Information Sciences & Systems	23	22.8%
Accounting	19	18.8%
Finance	19	18.8%
Software Engineering	19	18.8%
Electrical Engineering	17	16.8%
Mechanical Engineering	17	16.8%
Management Information Systems	16	15.8%

At the doctorate degree level, demand is totally focused on STEM majors. (See Figure 25.) Computer science majors top the list, with graduates in mathematics, engineering, and other computer-related fields also receiving interest.

FIGURE 25
Top Degrees in Demand (Doctorate Degree Level)

Major	# of Respondents That Will Hire	% of Total Respondents That Will Hire
Computer Science	6	5.9%
Mathematics	6	5.9%
Computer Engineering	4	4.0%
Electrical Engineering	4	4.0%
Information Science & Systems	4	4.0%
Mechanical Engineering	4	4.0%
Software Applications	4	4.0%
Civil Engineering	3	3.0%
Materials Engineering	3	3.0%
Software Engineering	3	3.0%

Demand by region once again confirms that finance is the top bachelor's degree in demand, as it tops the list in three of the seven regions. (See Figures 26 through 32.) Other top majors are a combination of business, computer science, and engineering degrees.

FIGURE 26
Top Five Undergraduate Majors – New England

Major	# of New England Respondents That Will Hire	% of New England Respondents That Will Hire	% of Total Respondents That Will Hire
Finance	6	85.7%	5.9%
Information Science & Systems	6	85.7%	5.9%
Business Administration/Mgmt.	5	71.4%	5.0%
Computer Science	5	71.4%	5.0%
Management Information Systems	5	71.4%	5.0%

FIGURE 27

Top Five Undergraduate Majors – Mideast

Major	# of Mideast Respondents That Will Hire	% of Mideast Respondents That Will Hire	% of Total Respondents That Will Hire
Finance	9	64.3%	8.9%
Accounting	9	64.3%	8.9%
Business Administration/Mgmt.	8	57.1%	7.9%
Computer Science	8	57.1%	7.9%
Information Science & Systems	8	57.1%	7.9%

FIGURE 28

Top Five Undergraduate Majors – Great Lakes

Major	# of Great Lakes Respondents That Will Hire	% of Great Lakes Respondents That Will Hire	% of Total Respondents That Will Hire
Mechanical Engineering	18	64.3%	17.8%
Finance	16	57.1%	15.8%
Accounting	15	53.6%	14.9%
Electrical Engineering	15	53.6%	14.9%
Logistics/Supply Chain	15	53.6%	14.9%

FIGURE 29

Top Five Undergraduate Majors – Plains

Major	# of Plains Respondents That Will Hire	% of Plains Respondents That Will Hire	% of Total Respondents That Will Hire
Finance	10	90.9%	9.9%
Accounting	9	81.8%	8.9%
Business Administration/Mgmt.	9	81.8%	8.9%
Logistics/Supply Chain	9	81.8%	8.9%
Management Information Systems	8	72.7%	7.9%

FIGURE 30

Top Five Undergraduate Majors – Southeast

Major	# of Southeast Respondents That Will Hire	% of Southeast Respondents That Will Hire	% of Total Respondents That Will Hire
Computer Science	11	64.7%	10.9%
Information Science & Systems	11	64.7%	10.9%
Accounting	10	58.8%	9.9%
Electrical Engineering	10	58.8%	9.9%
Finance	9	52.9%	8.9%

FIGURE 31

Top Five Undergraduate Majors – Southwest

Major	# of Southwest Respondents That Will Hire	% of Southwest Respondents That Will Hire	% of Total Respondents That Will Hire
Computer Science	10	66.7%	9.9%
Accounting	8	53.3%	7.9%
Business Administration.Mgmt.	8	53.3%	7.9%
Finance	8	53.3%	7.9%
Mechanical Engineering	8	53.3%	7.9%

FIGURE 32

Top Five Undergraduate Majors – Rocky Mountain/Far West

Major	# of Rocky Mountain/Far West Respondents That Will Hire	% of Rocky Mountain/Far West Respondents That Will Hire	% of Total Respondents That Will Hire
Accounting	7	77.8%	6.9%
Computer Science	7	77.8%	6.9%
Finance	7	77.8%	6.9%
Mechanical Engineering	6	66.7%	5.9%
Software Engineering	6	66.7%	5.9%

By industry, finance, insurance, and real estate employers have the most interest in finance majors, with 100 percent of respondents reporting that they will hire these majors. (See Figure 33.) Respondents also show high interest in the other top business majors in demand, including accounting and business administration/management. A large percentage of government and miscellaneous manufacturers also plan to target top bachelor's majors.

FIGURE 33
Who Is Hiring, by Industry (Bachelor's Degree Level)

Major	Most Interested Industries	% of Industry Respondents
Finance	Finance, Insurance & Real Estate	100.0%
	Government	80.0%
	Retail Trade	80.0%
Accounting	Government	100.0%
	Finance, Insurance & Real Estate	86.7%
	Misc. Mfg.	66.7%
Mechanical Engineering	Misc. Mfg.	94.4%
	Chemical (Pharmaceutical) Mfg.	80.0%
	Computer & Electronics Mfg.	66.7%
Computer Science	Information	100.0%
	Misc. Prof. Services	83.3%
	Retail Trade	80.0%
Business Administration/Mgmt.	Finance, Insurance & Real Estate	86.7%
	Government	80.0%
	Misc. Mfg.	55.6%

When it comes to the majors most in demand at the bachelor's degree level, respondents in the Plains region have the highest percentage of employers that plan to target the three business majors, while those in the Rocky Mountain/Far West region hold the most interest in the technical degrees. (See Figure 34.)

FIGURE 34
Who Is Hiring, by Region
(Bachelor's Degree Level)

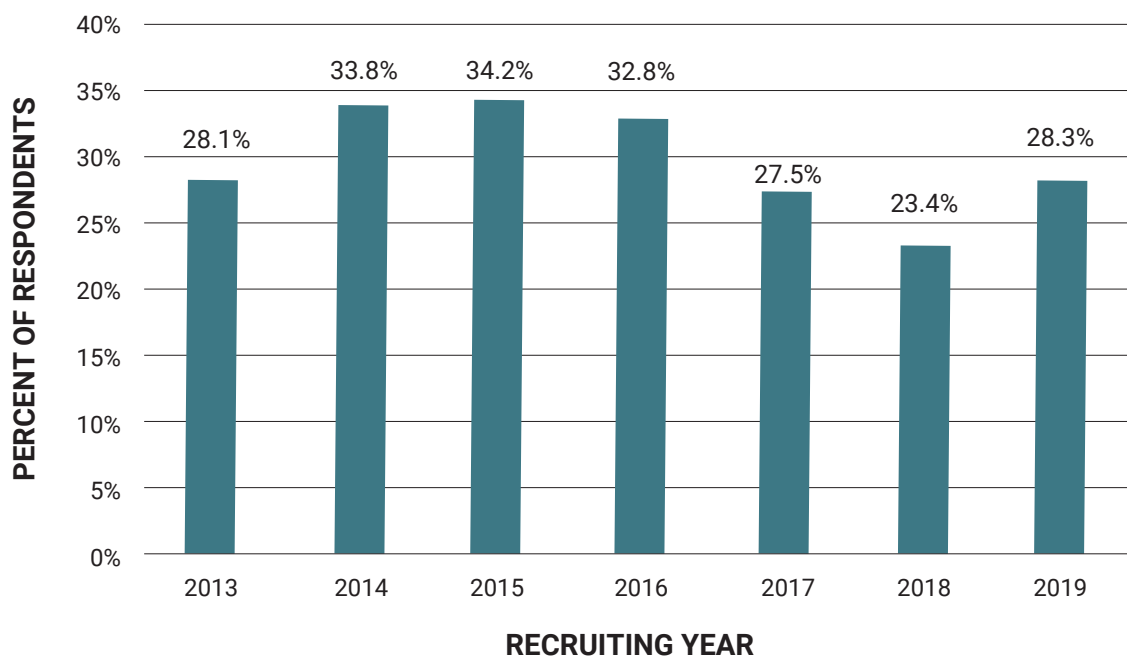
Major	Most Interested Regions	% of Region's Respondents
Finance	Plains	90.9%
	New England	85.7%
	Rocky Mountain/Far West	77.8%
	Mideast	64.3%
	Great Lakes	57.1%
	Southwest	53.3%
	Southeast	52.9%
Accounting	Plains	81.8%
	Rocky Mountain/Far West	77.8%
	Mideast	64.3%
	Southeast	58.8%
	New England	57.1%
	Great Lakes	53.6%
	Southwest	53.3%
Mechanical Engineering	Rocky Mountain/Far West	66.7%
	Great Lakes	64.3%
	Plains	63.6%
	Southwest	53.3%
	Southeast	52.9%
	Mideast	50.0%
	New England	28.6%
Computer Science	Rocky Mountain/Far West	77.8%
	New England	71.4%
	Southwest	66.7%
	Southeast	64.7%
	Plains	63.6%
	Mideast	57.1%
	Great Lakes	28.6%
Business Administration/ Mgmt.	Plains	81.8%
	New England	71.4%
	Mideast	57.1%
	Rocky Mountain/Far West	55.6%
	Southwest	53.3%
	Great Lakes	46.4%
	Southeast	41.2%

International student hiring recovers

Last year, the percentage of employers that had plans to hire international students dropped to its lowest level in the past five years at just 23.4 percent. This year, however, more than 28 percent of respondents indicate plans to hire international students. (See Figure 35.) Among the small group of respondents (n=14) that provided their specific hiring numbers for international students, the news is also good: These particular employers plan an overall increase in international student hiring of 23.2 percent.

FIGURE 35

International Student Hiring Plans



Two-thirds of respondents in the information industry plan to hire international students from the Class of 2019. (See Figure 36.) This is a substantial improvement over last year, when just 36.4 percent of information employers had plans to do so. Retail employers are showing more interest in these graduates this year, with 50 percent having plans to hire international students, which is up from 25 percent last year. Construction firms (40 percent this year; 20 percent last year) and miscellaneous manufacturers (21.1 percent this year; 12 percent last year) are also showing stronger interest this year.

FIGURE 36

International Student Hiring Plans, by Industry

Industry	% of Respondents That Plan to Hire International Students
Information	66.7%
Retail Trade	50.0%
Construction	40.0%
Computer & Electronics Mfg.	33.3%
Finance, Insurance, & Real Estate	33.3%
Misc. Prof. Services	33.3%
Misc. Mfg.	21.1%
Chemical (Pharmaceutical) Mfg.	16.7%
Engineering Services	16.7%

Of the seven geographic regions in this report, more than half of respondents located in the Plains region and one-third of Mideast respondents have plans to hire international students. (See Figure 37.) In comparison, last year's regional outlook for international students was the best in the West region, with 37 percent of respondents planning to hire international students.

FIGURE 37

International Student Hiring Plans, by Region

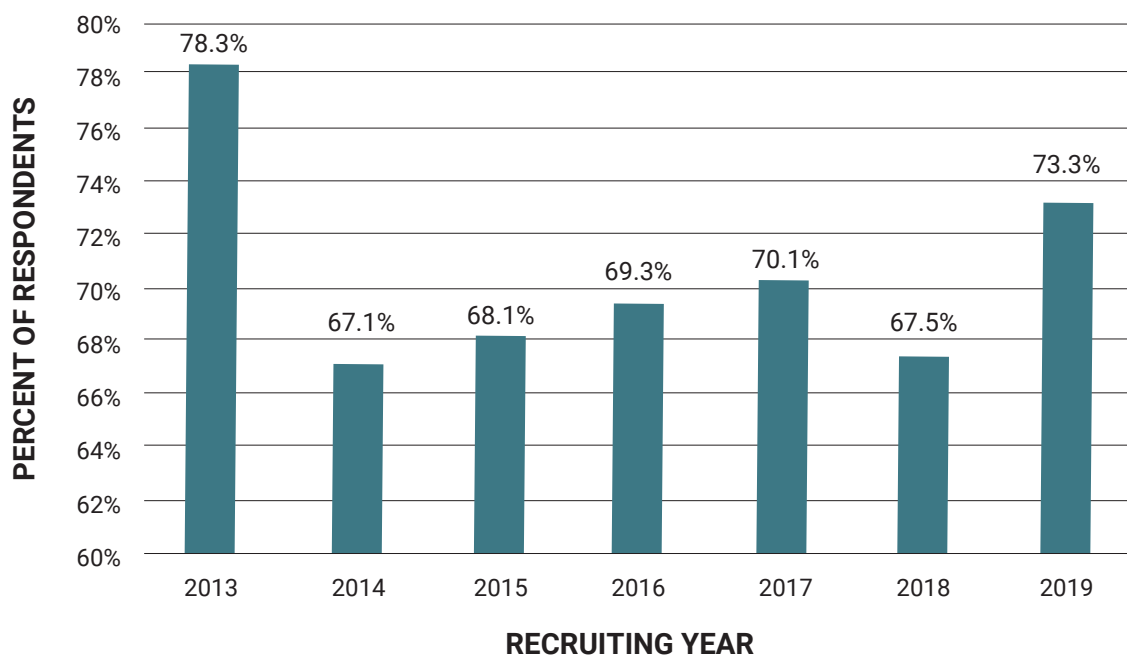
Region	% of Respondents That Plan to Hire International Students
Plains	54.5%
Mideast	33.3%
Great Lakes	26.7%
New England	25.0%
Southeast	23.8%
Rocky Mountain/Far West	23.5%
Southwest	22.2%

How Employers View Candidates

The percentage of employers that will screen candidates by GPA has reached its highest level since the 2013 recruiting year. (See Figure 38.) Nearly three-quarters of respondents will screen Class of 2019 candidates by GPA; the typical GPA cutoff will be 3.0 this year.

FIGURE 38

Screen Candidates by GPA, by Percentage of Respondents



The three industries with the largest hiring increases planned for Class of 2019 graduates—chemical (pharmaceutical) manufacturers, computer and electronics manufacturers, and oil and gas extraction firms—are also three of the top industries most likely to screen candidates by GPA. (See Figure 39.) All respondents in the chemical (pharmaceutical) manufacturing and oil and gas extraction industries plan to screen their job candidates by GPA, and 85.7 percent of computer and electronics manufacturers will do so. Other industries reported having at least 60 percent of respondents that will perform GPA screening.

FIGURE 39

Screen Candidates by GPA, by Industry

Industry	% of Respondents	GPA Cutoff (Reported Median)
Chemical (Pharmaceutical) Mfg.	100.0%	3.0
Oil & Gas Extraction	100.0%	3.0
Finance, Insurance, & Real Estate	92.3%	3.0
Computer & Electronics Mfg.	85.7%	3.0
Engineering Services	80.0%	3.0
Food & Beverage Mfg.	75.0%	3.0
Misc. Mfg.	75.0%	3.0
Information	66.7%	3.1
Misc. Prof. Services	60.0%	3.0

Resume attributes

In addition to working hard to obtain a high GPA, graduates may want to focus on presenting a well-written resume, as more than 80 percent of employers will seek proof of solid written communication skills on a candidate's resume. (See Figure 40.)

Last year's survey also had slightly more than 80 percent of respondents that were paying attention to written communication skills, but more were in search of problem-solving skills and the ability to work in a team. These two attributes fall second and third on this year's "wish list."

Initiative is selected as a top-four attribute this year by almost three-quarters of respondents; last year, just 67.5 percent of respondents reported seeking initiative. Another change this year is in leadership skills, which were top four last year, with 72.6 percent seeking them. However, only 67.4 percent of survey respondents are looking for leadership skills this year.

FIGURE 40

Attributes Employers Seek On a Candidate's Resume

Attribute	% of Respondents
Communication skills (written)	82.0%
Problem-solving skills	80.9%
Ability to work in a team	78.7%
Initiative	74.2%
Analytical/quantitative skills	71.9%
Strong work ethic	70.8%
Communication skills (verbal)	67.4%
Leadership	67.4%
Detail-oriented	59.6%
Technical skills	59.6%
Flexibility/adaptability	58.4%
Computer skills	55.1%
Interpersonal skills (relates well to others)	52.8%
Organizational ability	43.8%
Strategic planning skills	38.2%
Tactfulness	25.8%
Creativity	23.6%
Friendly/outgoing personality	22.5%
Entrepreneurial skills/risk-taker	16.9%
Fluency in a foreign language	11.2%

Candidate A = Candidate B. How do employers choose?

Often, employers will narrow down their hiring decision to two (or more) equally qualified candidates. Knowing what makes them choose one over another is key insight in the job-search process. Internship experience appears to be the answer. (See Figure 41.)

Having completed an internship with the hiring organization has the most influence in selecting one candidate over another, with both this year's and last year's respondents reporting that particular attribute as having extreme influence. In addition, internship experience within the industry is also extremely influential.

Other attributes of influence are a student's major and having held a leadership position, as well as general work experience and involvement in extracurricular activities. In a negative sense, no work experience is also somewhat influential in that it may even negate a GPA of 3.0 or above.

FIGURE 41
Influence of Attributes

Attribute	2019 Average Influence Rating*	2018 Average Influence Rating*	2017 Average Influence Rating*
Has completed an internship with your organization	4.6	4.6	N/A
Has internship experience in your industry	4.5	4.4	N/A
Major	4.0	3.8	4.0
Has held leadership position	3.8	3.7	3.9
Has general work experience	3.7	3.7	N/A
Has been involved in extracurricular activities (clubs, sports, student government, etc.)	3.5	3.3	3.6
Has no work experience	3.4	3.4	N/A
High GPA (3.0 or above)	3.3	3.4	3.6
School attended	2.7	2.8	2.9
Has done volunteer work	2.6	2.7	2.6
Is fluent in a foreign language	2.1	2.2	2.1
Other	2.1	2.2	N/A
Has studied abroad	2.0	2.2	2.0

*5-point scale, where 1=No influence at all, 2=Not much influence, 3=Somewhat of an influence, 4=Very much influence, and 5=Extreme influence.

Career readiness

Little change is seen year to year in the ratings that employers give to the eight NACE career readiness competencies in terms of essential need. Critical thinking/problem solving is once again rated as most essential by this year's respondents. (See Figure 42.)

The top four most essential competencies have also not changed in terms of order with teamwork/collaboration, professionalism/work ethic, and oral/written communications falling second through fourth on the list, as they did last year. In addition, all of the four top-rated competencies are rated above "essential."

However, competencies that are rated between "somewhat essential" and "essential" have changed order. This year, digital technology is the fifth most essential competency, according to respondents, and leadership is sixth. This is interesting since, earlier in this report, we found that leadership skills were also lower on this year's list of attributes that employers look for on a student's resume.

The two lowest-rated competencies—career management and global/multi-cultural fluency—remain in the same order, but their average ratings fell.

FIGURE 42

Employers Rate the Essential Need of the Career Readiness Competencies

Competencies	Weighted Average Rating*
Critical Thinking/Problem Solving	4.66
Teamwork/Collaboration	4.48
Professionalism/Work Ethic	4.41
Oral/Written Communications	4.30
Digital Technology	3.84
Leadership	3.65
Career Management	3.38
Global/Multi-cultural Fluency	2.78

**5-point scale, where 1=Not essential, 2=Not very essential, 3=Somewhat essential, 4=Essential, 5=Absolutely essential*

In terms of proficiency, employers gave students slightly higher marks in all eight competencies this year, but all ratings still fall in the range between “somewhat proficient” and “very proficient.” Employers feel that recent graduates are most proficient in teamwork/collaboration, digital technology, and critical thinking/problem solving.

Through their proficiency ratings, employers kept the top six competencies in the same order as they were last year. However, students are rated more proficient in global/multi-cultural fluency than career management this year. (See Figure 43.)

FIGURE 43
Employers Rate Recent Graduates on the Eight Career Readiness Competencies

Competencies	Weighted Average Rating*
Teamwork/Collaboration	3.83
Digital Technology	3.76
Critical Thinking/Problem Solving	3.64
Oral/Written Communications	3.49
Professionalism/Work Ethic	3.47
Leadership	3.31
Global/Multi-cultural Fluency	3.13
Career Management	3.05

**5-point scale, where 1=Not at all proficient, 2=Not very proficient, 3=Somewhat proficient, 4=Very proficient, 5=Extremely proficient.*

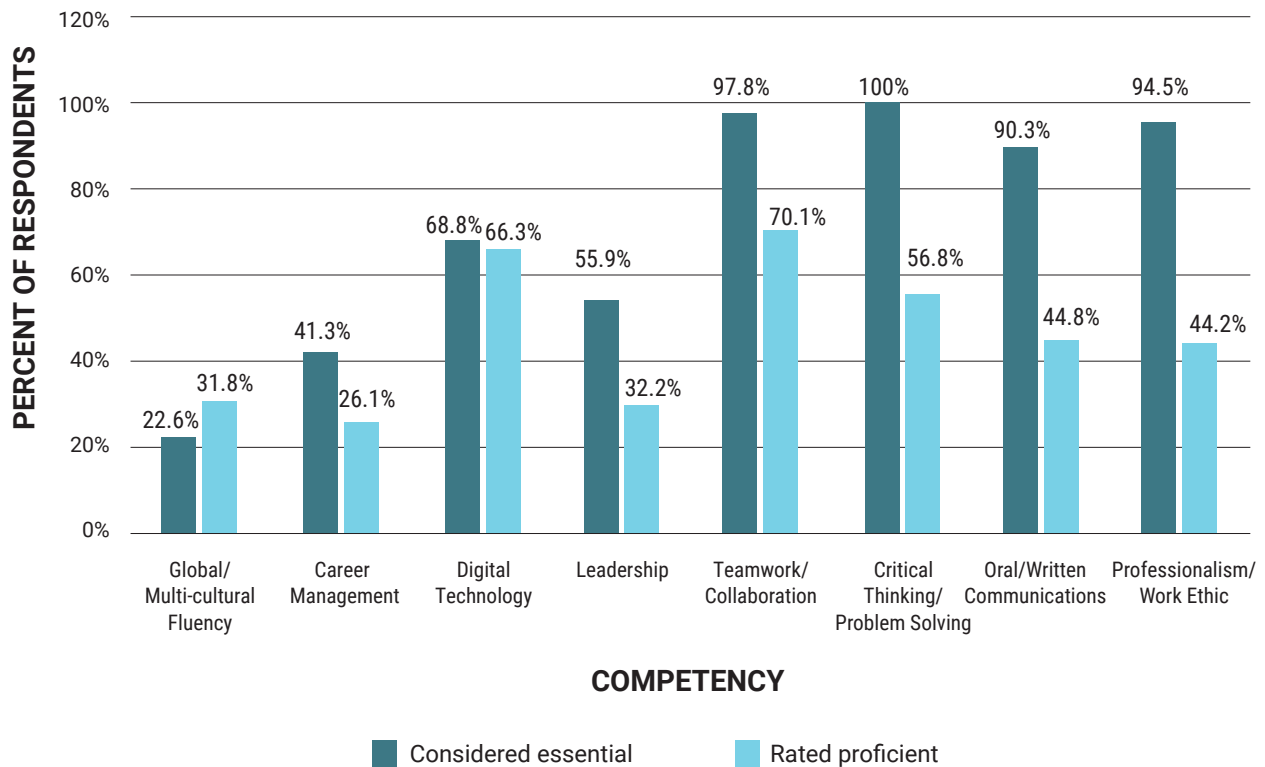
In examining the need vs. proficiency ratings of all eight career readiness competencies, the findings show that skill gaps remain in certain areas. (See Figure 44.)

Among the four top-rated competencies in terms of need—critical thinking/problem solving, teamwork, professionalism/work ethic, and oral/written communications—the difference between the need and proficiency ratings are the greatest. They range from 27.7 percent for teamwork to 50.3 percent for professionalism. Also, just 56.8 percent of respondents consider students proficient in critical thinking/problem solving, yet 100 percent of employers rated the competency as very or extremely essential.

There are, however, two competencies for which students are meeting or exceeding employers' expectations. While 68.8 percent of respondents consider digital technology to be essential, an almost equal percentage (66.3 percent) consider students to be proficient. In addition, global/multi-cultural fluency is rated highly in terms of essential need by just 22.6 percent of respondents, but more than 31 percent of employers rated students as proficient.

FIGURE 44

Need vs. Proficiency on Career Readiness Competencies, by Percent of Respondents



*The percentages corresponding to "considered essential" represent, among all responding employers, the percentage who, on a five-point scale, indicated that the respective competency was either "essential" (4) or "absolutely essential" (5) for college graduates to enter their work force. The percentages corresponding to "rated proficient" represent, among all responding employers, the percentage who, on a five-point scale, rated recent graduates either "very" (4) or "extremely" (5) proficient in the respective competency.

Compensation & Signing Bonuses

Starting salaries

Even though the percentage of respondents that plan to increase bachelor's degree starting salaries has dipped somewhat compared to last year, more than 60 percent still have plans to do so for the Class of 2019. (See Figure 45.)

Among respondents to this survey, the average salary increase for bachelor's degree graduates is expected to be 3.4 percent, with a median increase of 3 percent. Slightly more than one-third of respondents have bachelor's degree increases planned that exceed 3 percent.

Information employers are most likely to raise bachelor's degree starting salaries, with 80 percent of respondents planning increases. (See Figure 46.) At least half of responding finance, insurance, and real estate employers and miscellaneous manufacturers plan to increase salaries for new college hires with bachelor's degree.

FIGURE 45

Employers With Plans to Increase Starting Salaries to Bachelor's Degree Graduates

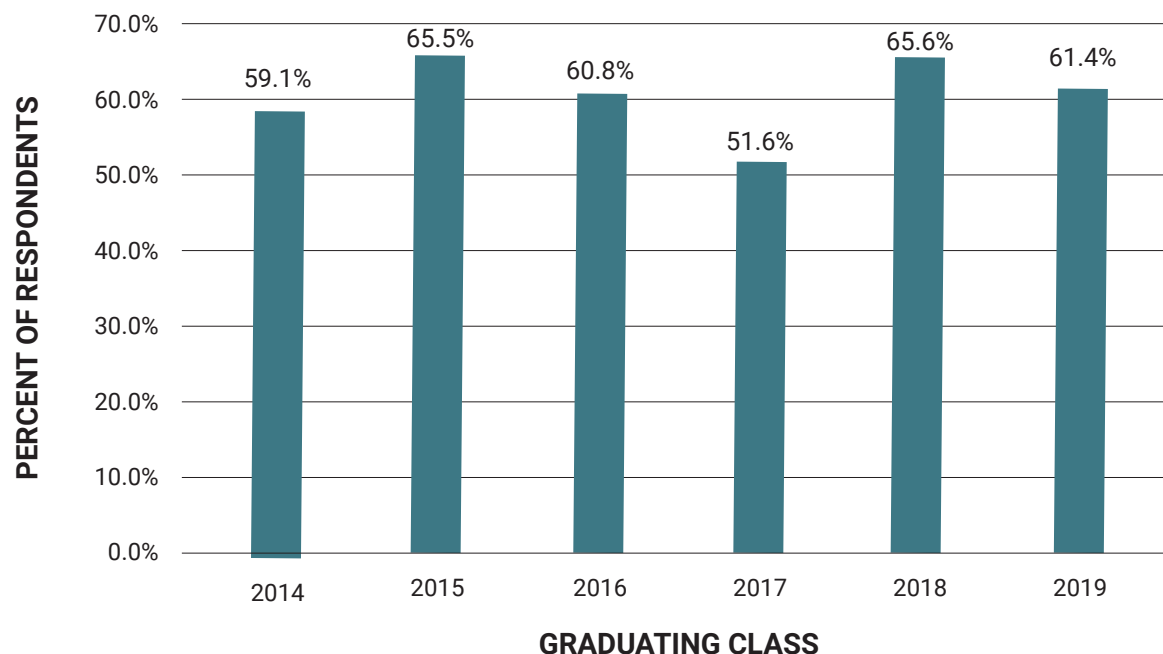


FIGURE 46

Employers With Plans to Increase Starting Salaries, by Industry

Industry	# of Respondents With Plans to Increase Bachelor's Salaries	# of Respondents by Industry	% of Respondents by Industry
Information	4	5	80.0%
Finance, Insurance & Real Estate	5	9	55.6%
Misc. Mfg.	6	12	50.0%
Computer & Electronics Mfg.	2	5	40.0%
Government	1	5	20.0%

By region, employers in the Great Lakes are most likely to increase bachelor's degree salaries. Nationwide, at least half of respondents by region have plans to do so. (See Figure 47.)

FIGURE 47

Employers With Plans to Increase Starting Salaries, by Region

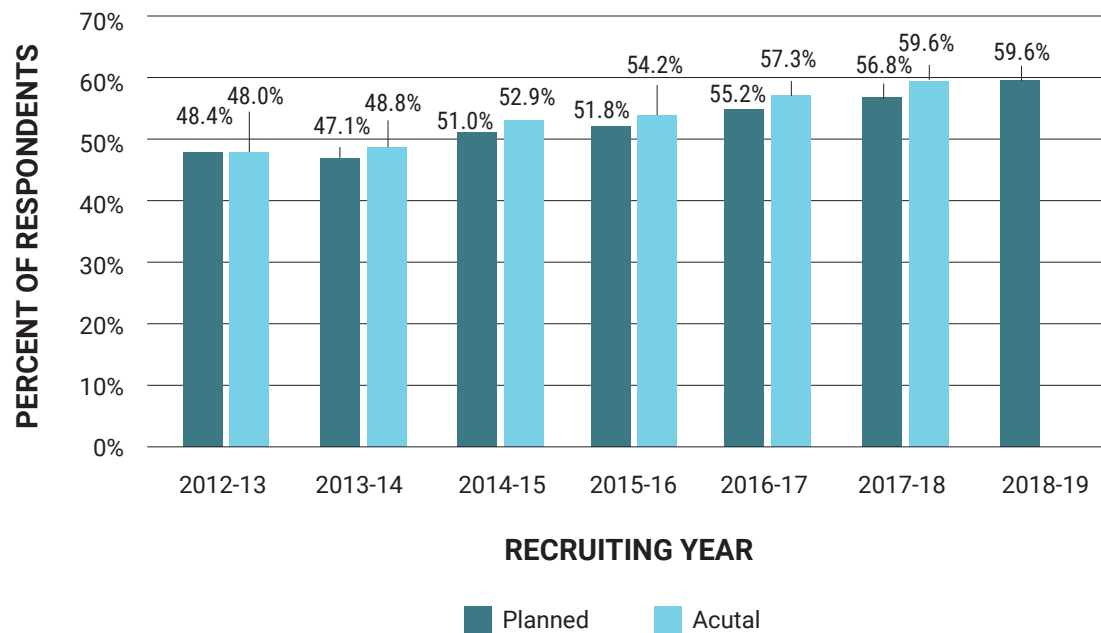
Region	# of Respondents With Plans to Increase Bachelor's Salaries	# of Respondents by Region	% of Respondents by Region
Great Lakes	13	18	72.2%
Southeast	9	14	64.3%
Plains	3	5	60.0%
Southwest	7	13	53.8%
Mideast	5	10	50.0%
Rocky Mountain/Far West	3	6	50.0%

Signing bonuses

The group of employers with plans to offer signing bonuses has climbed to almost 60 percent—the highest percentage since the 2012-13 recruiting year. (See Figure 48.) Additionally, last year, almost 57 percent of respondents intended to offer signing bonuses, and nearly 60 percent actually provided them, showing that the upward trend continues.

Although more bonuses will be offered in 2018-19, they will only go to selected graduates. Nearly 60 percent of respondents report that they will only offer signing bonuses to selected majors, consisting primarily of engineering, computer science, and certain business majors.

FIGURE 48

Employers Offering Signing Bonuses

By industry, all responding chemical (pharmaceutical) manufacturers plan to offer signing bonuses. Employers in the miscellaneous manufacturing, information, computer and electronics manufacturing, and engineering services industries also have at least 60 percent of respondents planning to offer signing bonuses. (See Figure 49.)

Employers in the Plains region are also the most likely to offer signing bonuses, while only the Southeast region has less than half of its respondents offering signing bonuses to 2018-19 graduates. (See Figure 50.)

FIGURE 49

Percent of Employers Offering Signing Bonuses to 2018-19 Graduates, by Industry

Industry	% offering Signing Bonuses	# of Respondents
Chemical (Pharmaceutical) Mfg.	100.0%	5
Misc. Mfg.	72.2%	18
Information	66.7%	6
Computer & Electronics Mfg.	62.5%	8
Engineering Services	60.0%	5
Finance, Insurance & Real Estate	53.3%	15
Misc. Prof. Services	50.0%	6

FIGURE 50

Percent of Employers Offering Signing Bonuses to 2018-19 Graduates, by Region

Region	% offering Signing Bonuses	# of Respondents
Plains	80.0%	10
Great Lakes	66.7%	27
Mideast	61.5%	13
New England	57.1%	7
Rocky Mountain/Far West	55.6%	9
Southwest	53.3%	15
Southeast	44.4%	18

Despite more employers offering signing bonuses this year, data on bonus amounts are extremely limited, as just five major categories are reported at the bachelor's level this year. (See Figure 51.) While increases are seen in four of the five categories, the data should be used with caution, as limited numbers are greatly affected by any outliers.

At the master's level, even fewer data are reported, but bonus amounts are provided for M.B.A. and computer science degrees. (See Figure 52.)

FIGURE 51

Average Signing Bonus, by Major (Bachelor's Degrees)*

Major	2018-19 Average Bonus (Projected)	# of Respondents 2018-19	2017-18 Average Bonus (Projected)	# of Respondents 2017-18
Accounting	\$5,400	5	\$2,375	5
All majors	\$3,625	4	\$4,900	5
Business	\$4,000	4	\$3,357	7
Computer Science	\$7,500	5	\$6,000	9
Engineering (not specified)	\$5,600	10	\$4,083	6

*Where 4 or more data points were provided.

FIGURE 52

Average Signing Bonus, by Major (Master's Degrees)*

Major	2018-19 Average Bonus (Projected)	# of Respondents 2018-19	2017-18 Average Bonus (Projected)	# of Respondents 2017-18
M.B.A.	\$22,500	5	\$15,500	5
Computer Science	\$10,167	4	\$10,375	5

*Where 4 or more data points were provided.

Appendix

FIGURE 53

Respondents by Size of Department/Business Unit

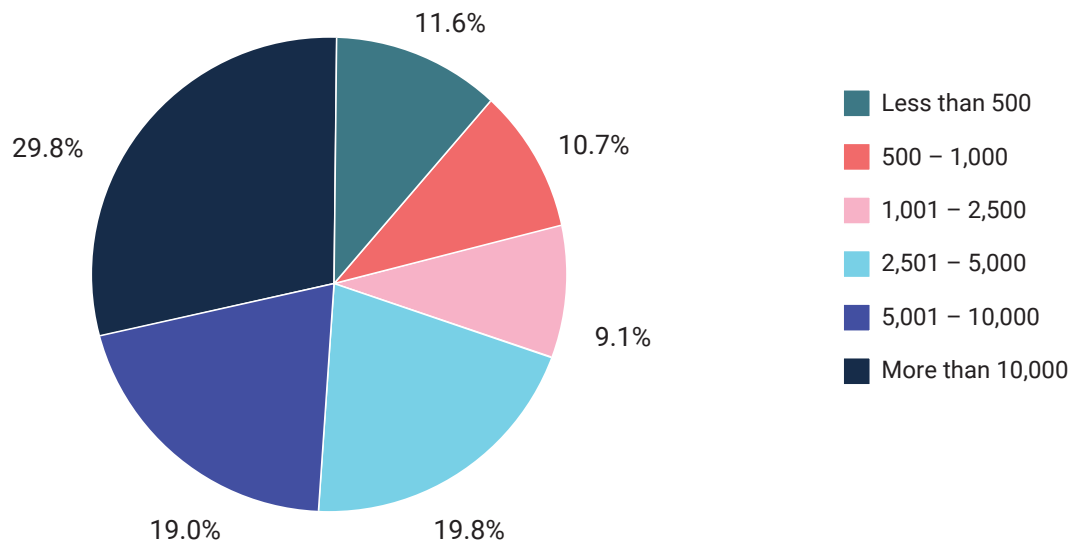


FIGURE 54

Respondents by Industry

Industry	# of respondents	% of respondents
Oil & Gas Extraction	8	4.7%
Utilities	4	2.3%
Construction	7	4.1%
Food & Beverage Mfg.	4	2.3%
Chemical (Pharmaceutical) Mfg.	10	5.8%
Computer & Electronics Mfg.	17	9.9%
Motor Vehicle Mfg.	6	3.5%
Misc. Mfg.	22	12.8%
Wholesale Trade	5	2.9%
Retail Trade	8	4.7%
Transportation	3	1.7%
Information	9	5.2%
Finance, Insurance & Real Estate	31	18.0%
Accounting Services	3	1.7%
Engineering Services	8	4.7%
Management Consulting	3	1.7%
Misc. Prof. Services	10	5.8%
Social Services	3	1.7%
Recreation & Hospitality	2	1.2%
Misc. Support Services	2	1.2%
Government	7	4.1%

FIGURE 55
States Included in Each Region

Region	States
New England	CT, ME, MA, NH, RI, VT
Mideast	DE, DC, MD, NJ, NY, PA
Great Lakes	IL, IN, MI, OH, WI
Plains	IA, KS, MN, MO, NE, ND, SD
Southeast	AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, VA, WV
Southwest	AZ, NM, OK, TX
Rocky Mountain/Far West	CO, ID, MT, UT, WY, AK, CA, HI, NV, OR, WA



Participating Organizations

Below is a list of the organizations that responded to the *Job Outlook 2019* survey. (Please note: Although 172 organizations responded, the list below includes 87, as 85 organizations preferred not to be listed.)

Activision Blizzard	GE Appliances, a Haier company
Amtrak	General Dynamics Electric Boat
Andersen Corporation	Genworth Financial
ArcelorMittal USA	Georgia Tech Research Institute
Arizona Public Service	GlaxoSmithKline
Austin Commercial	Great Lakes Dredge & Dock Company
Avery Dennison Corporation	Hallmark Cards
BOK Financial Corporation	Harley-Davidson Inc.
California State Auditor	Highmark Health
Capital Group	HNTB Companies
CGI Federal	Hubbell Incorporated
Charter Manufacturing Company, Inc.	INEOS
City and County of Denver Talent Acquisition	Info Tech
ConocoPhillips Company	Ingredion
Continental AG	Intuit Inc.
Daikin Industries/Goodman Manufacturing	ITW
Dick's Sporting Goods	John Hancock Financial
Dot Foods	Kimberly-Clark Corporation
E. & J. Gallo Winery	Kohl's Department Stores
Echo Global Logistics	Liberty Mutual Insurance Company
ellucian	Linde Engineering North America Inc.
Enterprise	Link-Belt Construction Equipment Co.
EOG Resources, Inc.	M&T Bank Corporation
Equinix	Macy's, Inc.

MAVERICK Technologies
McAfee, Inc.
MGM Resorts International
National Instruments
NetApp
Nokia
Occidental Petroleum Corp.
Olin Corporation
Owens Corning
Parsons Corporation
Philips Lighting
Phillips 66
PPL Corporation
Principal Financial Group
Protiviti Inc.
Raytheon Company
Regions Financial Corporation
Selden Fox LTD
Shaw Industries, Inc.
Simpson Gumpertz & Heger Inc.

Sonoco Products Company
Southern Company
Speedway LLC
Stryker Corporation
T-Mobile USA, Inc.
Textron Inc.
The Aerospace Corporation
The Clorox Co.
The Kleingers Group
The MITRE Corporation
The Travelers Companies, Inc.
The Walsh Group
Thermo Fisher Scientific Inc.
TimkenSteel Corporation
Turner Construction Company
U.S. Cellular Corporation
United Launch Alliance
Verso Corp.
W. L. Gore & Associates, Inc.



Appendix D: REDI Cincinnati Report

ECONOMY-WIDE OCCUPATIONS: TALENT PRODUCTION & SUPPLY+DEMAND ANALYSIS IN THE CINCINNATI MSA

What does this report show?

This report was designed to show a general range of possible talent surpluses and shortages for selected occupationsⁱ.

Why these fifteen occupations?

In concert with REDI's mission, occupations were selected that are widely demanded, relatively high paying, and typically require a minimum of a Bachelor's degree. A list of these occupations is displayed to the right.

What occupations are "economy-wide"?

Some occupations, such as Doctors or Tax Collectors are concentrated in a few industries (e.g. Healthcare & Government). However, there are some occupations that are demanded by most, if not all, industries (think Human Resources or Accounting professionals). These occupation types are demanded by almost every industry regardless of the industry's primary business activity. These are "economy-wide" occupations.

How do we estimate demand?

The demand for these occupations is estimated using the 2020 Jobs Outlookⁱⁱ, which was produced based on national forecasts and how the Cincinnati MSA compared to the nation historically. These forecasts also provide a "replacement rate", which forecasts the rate of turnover in an occupation.

How do we estimate supply?

Supply is estimated using 2010-2013 trends from the Integrated Postsecondary Educational Data System. Any educational institution that accepts federal money is required to report the number of graduates from each program into this system. The regional talent supply in this report is the sum of graduates from eight colleges and universities in the area including: Cincinnati State Technical & Community College, Gateway Community & Technical College, Miami University, Northern Kentucky University, Sinclair Community College, Thomas More College, University of Cincinnati, and Xavier University.

THE REDI 15 ECONOMY-WIDE OCCUPATIONS

11-1021 General & Operations Managers

11-2022 Sales Managers

11-3011 Administrative Services Managers

11-3021 Computer & Information Systems Managers

11-3031 Financial Managers

13-1071 Human Resources Specialists

13-1111 Management Analysts

13-1161 Market Research Analysts & Marketing Specialists

13-2011 Accountants & Auditors

13-2051 Financial Analysts

15-1121 Computer Systems Analysts

15-1131 Computer Programmers

15-1132 Software Developers, Applications

15-1133 Software Developers, Systems Software

15-1142 Network & Computer Systems Administrators

Occupations are from the U.S. Bureau of Labor Statistics' 2010 Standard Occupational Classification System.

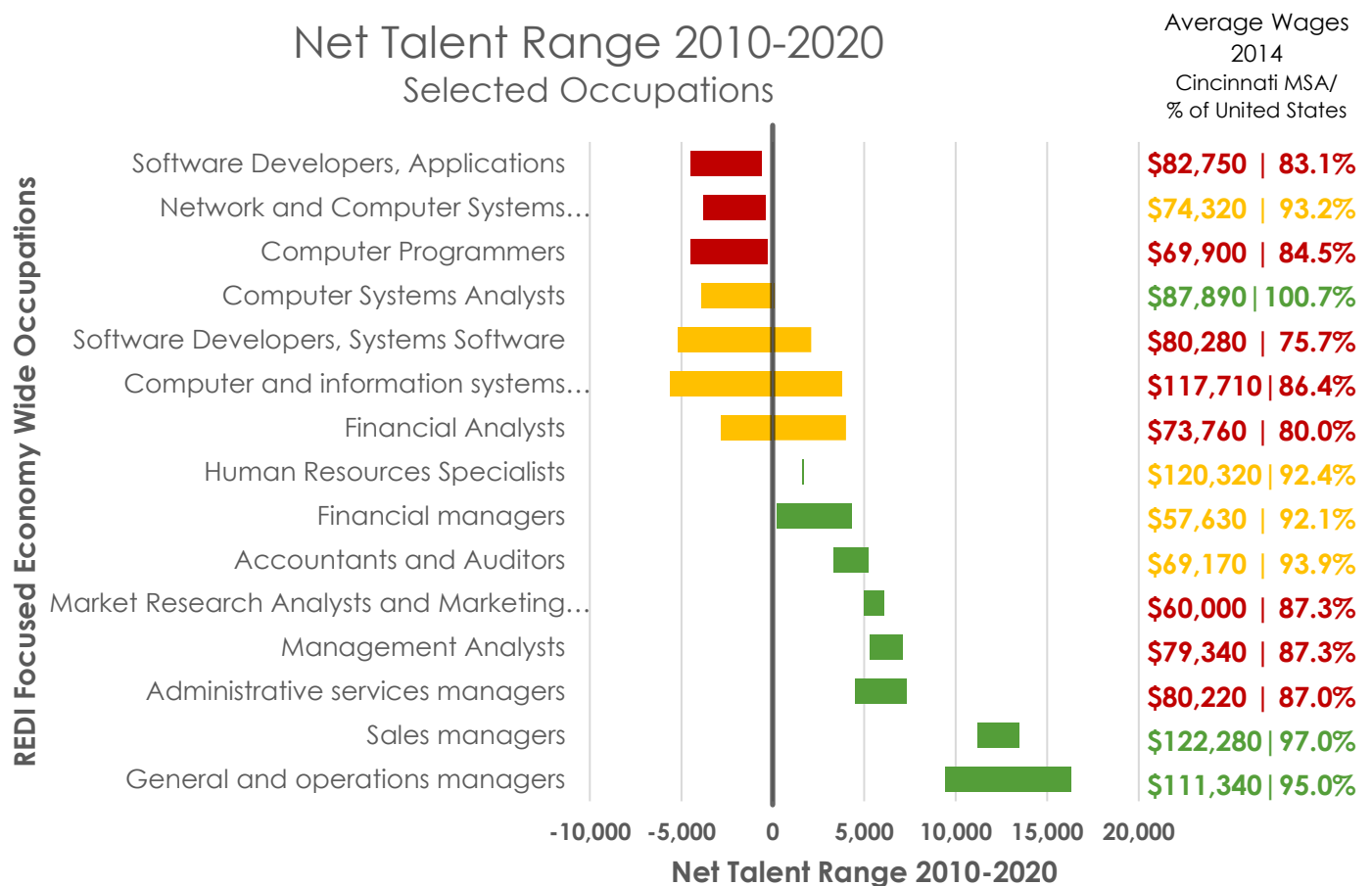
About This Graph

This graph represents a range of possible talent supply surpluses and shortages (Supply minus Demand) for occupations in the Cincinnati MSA. Almost every degree holder is qualified for more than one occupation and, every occupation accepts more than one type of degree holder. This is why ranges are presented versus point estimates of shortages/surpluses.

The **lower bound** of the range shows the expected shortage/surplus of talent **if all qualified graduates for a particular occupation entered other occupations that compete for the same talent.**

The **upper bound** of the range shows the expected shortage/surplus **if all qualified graduates for a particular occupation entered into that occupation.**

Example: Roughly 1,600 graduates are expected to enter the market with skills to work as Applications Software Developers. The expected demand for this occupation during that same period is ~2,200. If all 1,600 graduates gained employment as an Applications Software Developer, there would still be roughly 600 positions that need to be filled from other talent (this is the right side of the top red bar). These same graduates are in demand by other occupations. The left side (lower bound) of the top red bar represents the pull of talent by competing occupations. The position and width of each bar is designed to show the magnitude of competition between the occupation in question and the occupations that also compete for the same talent.



Data sources: Demand– U.S. BLS, 2010-2020 Employment Projections, 2005-2010 Occupational Employment Statistics (OES); 2020 Jobs Outlook, Center for Economic Analysis & Development at Northern Kentucky University & the Institute for Policy Research at the University of Cincinnati; Talent Supply – 2010-2013 Graduates, Integrated Postsecondary Educational Data System. Average Wages – U.S. BLS OES; Wages are color coded by Cincinnati MSA as a % of the U.S. Average. Green: $\geq 95\%$, Yellow: $< 95\%$ and $> 90\%$, Red: $< 90\%$.

What are the caveats?

This study was designed to provide magnitude and direction of the net talent shortages and surpluses for these 15 occupations. These data are not intended to be exact estimates. Several caveats exist in the data used for this project, notably:

- Several reasons for surpluses/shortages can exist, including: program capacity, migration of graduates out of the market, competitiveness of wages, and the relative specificity of the job (e.g. General and Operations Managers most likely require skills that are transferrable outside of a typical business occupation, versus a Physician whose skills most likely prepare them for a much smaller number of occupations).
- Since the production of the 2020 Jobs Outlook, national forecasts have changed for certain occupations. These revised forecasts reflect technological changes that may decrease the demand of certain occupations. These forecasts also reflect a growing economy, whereas the forecasts used in the 2020 Jobs Outlook were produced at the end of one of the deepest recessions in U.S. history. The demand for some occupations (e.g. Computer/IT) may be understated.
- The migration of graduates out of the market can have an effect on the talent supply produced by a region. Conversely, companies may choose to recruit for these occupations from schools that are not one of the eight regional colleges and universities included in the analysis.
- The talent supply includes post-secondary certificate holders. This assumes that someone with a Bachelor's degree in an unrelated field is qualified for the occupation if they received certificate-level skills in a program relevant to the occupation.
- The talent supply does not include graduates "in the pipeline", or those that graduate with the same skills at a lower level (e.g. Associate's in Accounting or Finance). CEAD/IPR chose NOT to make the assumption that these graduates would ultimately increase their education and enter into one of these occupations.
- The talent supply does not include graduates at the Doctoral level. CEAD/IPR chose to make the assumption that most Doctoral level graduates would enter into a Doctoral level occupation.

ⁱ Occupations were selected based on a variety of factors relative to REDI Cincinnati's mission. Using the Herfindahl Hirschman Index, occupations were first selected based on how widely spread out the demand for the occupation was by industry (e.g. the more industries the occupation was demanded by, the wider the spread). Secondary criteria included a minimum educational requirement of a postsecondary degree and if the occupation's MSA employment was in the top quartile of the most spread out occupations with a minimum requirement of an Associate's degree or higher.

ⁱⁱ The 2020 Jobs Outlook Report was sponsored in collaboration by the Strive Partnership, Partners for A Competitive Workforce, Agenda360, and Skyward (formerly Vision 2015). The report forecasts occupational employment needs across the Cincinnati MSA.

Appendix E: AACU Employer Survey

Fulfilling the American Dream: Liberal Education and the Future of Work

*Selected Findings from Online Surveys
of Business Executives and Hiring Managers*

Conducted on Behalf of



with support from



July 2018



1724 Connecticut Avenue, NW
Washington, DC 20009

Methodology

From May 17 to June 1, 2018, Hart Research Associates conducted an online survey on behalf of the Association of American Colleges and Universities among employers at companies that have at least 25 employees and report that 25% or more of their new hires hold either an associate's degree from a two-year college or a bachelor's degree from a four-year college.

The research includes two parallel surveys:

- *One among 501 business executives at private sector and nonprofit organizations, including owners, CEOs, presidents, C-suite level executives, vice presidents, and directors;*
- *One among 500 hiring managers, or non-executives (directors, managers, supervisors, and office administrators) whose current job responsibilities include recruiting, interviewing, and/or hiring new employees.*

Company/Organization Profile of Executives			
Private company	86%	25 to 99 employees	33%
Nonprofit	13%	100 to 499 employees	33%
		500/more employees	34%
Local	23%	Northeast	25%
Regional	26%	South	28%
National	27%	Midwest	23%
Multinational	24%	West	24%

Company/Organization Profile of Hiring Managers			
Private company	85%	25 to 99 employees	33%
Nonprofit	14%	100 to 499 employees	34%
		500/more employees	33%
Local	26%	Northeast	25%
Regional	26%	South	28%
National	28%	Midwest	24%
Multinational	20%	West	23%

All interviews were completed online using opt-in panels in which business executives and professionals were recruited through partnerships with leading global brands, publishers, and online professional communities. Potential respondents were targeted for invitations to participate in the survey based on their employment profile, including job title, size of company/employer, and type of company/organization. Potential respondents received an e-mail or mobile app invitation to answer basic questions to ensure they qualified and were then directed through to the survey if they met the screening criteria.

Results were analyzed by key subgroups, including company size, type, and region. Significant differences are noted where applicable. While regional findings are highlighted in this report, most are not statistically significant.

The objective of the survey was to gauge the degree to which business executives and hiring managers believe that a college education is important and worthwhile, the learning outcomes they believe are most important for success in today's economy and how prepared recent college graduates are in these areas, and the kinds of professional development they are providing to their employees.

NOTE: The use of the term "employers" in this report refers to business executives and hiring managers collectively.

Overview

Both executives and hiring managers express a higher degree of confidence in colleges and universities than does the American public, and the majority feel satisfied with recent college graduates' ability to apply the skills and knowledge they learned in college to complex problems in the workplace.

Business executives and hiring managers agree on the importance and value of college. Indeed, executives and hiring managers largely are aligned in their priorities for college learning and their perceptions of recent college graduates' preparedness and ability to succeed in the workplace.

However, higher proportions of both executives and hiring managers say that recent graduates have the skills to succeed in entry-level positions than say that recent graduates have the skills needed to advance or be promoted. Majorities think that colleges and universities need to make improvements to ensure that their graduates possess the skills and knowledge needed for workplace success at the entry level, and especially for advancement.

When hiring, executives and hiring managers place a high priority on graduates' demonstrated proficiency in skills and knowledge that cut across majors, and hiring managers are closely aligned with executives in the importance that they place on key college learning outcomes. The college learning outcomes that both audiences rate as most important include oral communication, critical thinking, ethical judgment, working effectively in teams, working independently, self-motivation, written communication, and real-world application of skills and knowledge.

However, executives and hiring managers see recent college graduates as underprepared in the skills and knowledge areas that they deem most important, even though some improvement has occurred in executives' assessment of recent graduates' preparedness since five years ago.

- Among the college learning outcomes tested, both executives and hiring managers place the highest importance on the ability to communicate orally, but only 40% of executives and 47% of hiring managers rate recent college graduates as well prepared in this area.

- Both audiences value applied experiences and real-world skills, but only 33% of executives and 39% of hiring managers think that recent graduates are very well prepared to apply knowledge and skills to real-world settings.

Despite these gaps, executives and hiring managers say that recent college graduates are fairly effective in communicating about the skills and knowledge they have gained in college that will be important for workplace success. And they find ePortfolios more helpful than college transcripts and resumes alone when evaluating and hiring recent graduates.

Executives and hiring managers reveal expectations for continued learning among their employees with a focus toward advancement. Majorities of both audiences report that their companies offer some form of professional development—with most saying that these opportunities include training in more advanced skills that will allow employees to take on more responsibility. In partnering with colleges and universities, they say that their companies most commonly do so to offer service learning opportunities, internships, and/or apprenticeships—underscoring their focus on applied learning and real-world experiences.

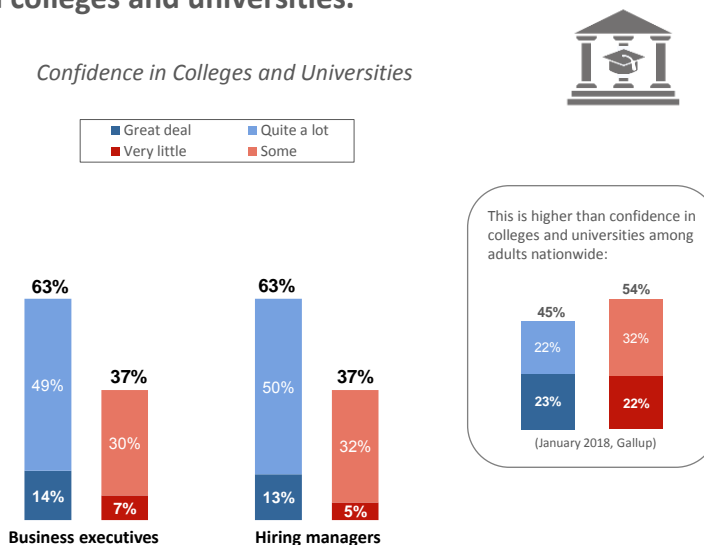
Key Findings

The Value of a College Degree

1. Business executives and hiring managers express a higher degree of confidence in colleges and universities than does the American public.

Among both executives and hiring managers, 63% express quite a lot or a great deal of confidence in colleges and universities—a notably higher proportion than among the general public. In a January 2018 Gallup poll, 45% of adults nationwide expressed a great deal or quite a lot of confidence in colleges and universities.

More than six in 10 executives and hiring managers express confidence in colleges and universities.



- Business executives located in the West are significantly less likely than those in other regions to have quite a lot or a great deal of confidence in colleges and universities (53%).

Proportions who have a great deal/quite a lot of confidence in colleges and universities*		
	Business executives	Hiring managers
Northeast	65%	60%
South	67%	63%
Midwest	69%	71%
West	53%	59%

**The difference between business executives in the West (53%) and business executives in other regions is statistically significant. All other differences by region are not statistically significant.*

2. Business executives and hiring managers agree on the value of college: they believe that it is both important and worth the time and money involved.

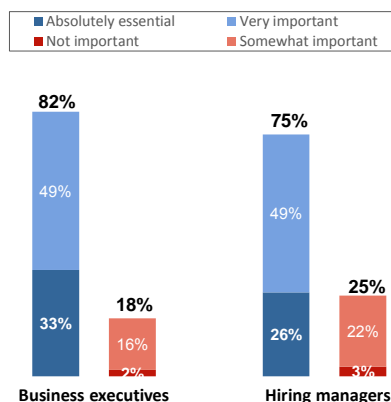
Strong majorities of executives (82%) and hiring managers (75%) believe that it is very important or absolutely essential for individuals today to complete a college education. This includes one in four (26%) hiring managers and an even higher proportion of business executives (33%, a statistically significant difference) who say that a college education is absolutely essential.¹

Additionally, an overwhelming 88% of executives and 85% of hiring managers consider the money and time involved in getting a college degree to be worthwhile.

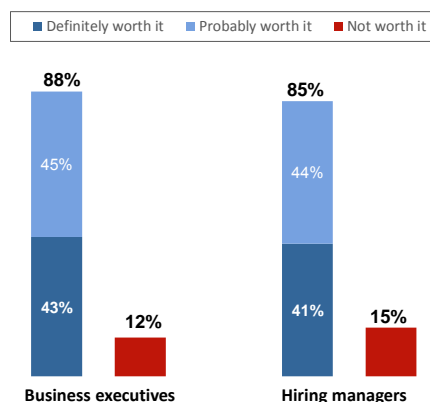
¹ It is worth noting that nearly all business executives and most hiring managers have earned a college degree, including 91% of business executives and 73% of hiring managers who have a four-year degree or more education.

Executives and hiring managers alike agree on the value of college.

Importance of Completing a College Education



Evaluation of Whether a College Degree Is Worth the Time and Money Involved



- Hiring managers in the South are slightly more likely than hiring managers in other regions of the country to say that completing college is important, while executives in the Midwest are slightly more likely to say so than executives in other regions.

Proportions who say a completing college is very important/absolutely essential*		
	Business executives	Hiring managers
<i>Northeast</i>	82%	74%
<i>South</i>	79%	79%
<i>Midwest</i>	84%	73%
<i>West</i>	82%	73%

*Differences by region are not statistically significant.

When asked to describe the value of a college degree in an open-ended question, both executives and hiring managers most commonly cite the accumulation of knowledge, development of critical thinking and analytical skills regardless of profession, potential for increased earnings, and focus on a goal as factors that make it useful or important for an individual to obtain a college degree today.

3. Business executives and hiring managers indicate satisfaction with recent graduates' ability to apply the skills and knowledge they learned in college in the workplace, but they think that recent graduates are better prepared to succeed in entry-level positions than to advance. Among both audiences, majorities believe that colleges and universities need to make improvements to ensure that college graduates possess the skills and knowledge needed for workplace success at the entry level and especially for advancement.

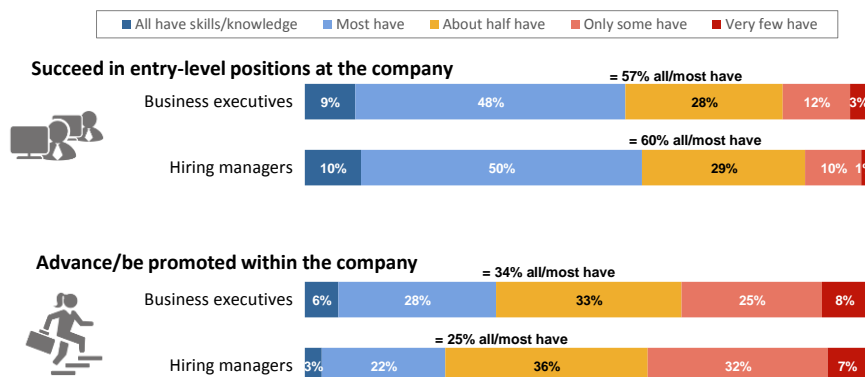
At a time when majorities of executives (56%) and hiring managers (54%) say that it is difficult to fill open positions at their companies, a promising 71% of executives and 74% of hiring managers express satisfaction with recent college graduates' ability to apply the skills and knowledge they learned in college to complex problems in the workplace. They see room for improvement, however, as only 15% of executives and 13% of hiring managers are very satisfied with recent graduates' ability in this regard.

- Majorities of employers (57% of executives and 60% of hiring managers) believe that most recent graduates have the skills and knowledge needed to succeed in **entry-level positions**.
- However, only 34% of executives and significantly fewer hiring managers (25%) say that most recent graduates have the necessary skills and knowledge to **advance or be promoted**.
 - A decrease has occurred in the proportion of executives who think that most recent graduates have the skills and knowledge needed for entry-level positions (down from 67% in 2013 to 57% today) and to advance (down from 44% to 34%).²

² Results from the 2013 report ["It Takes More Than a Major: Employer Priorities for College Learning and Student Success"](#)

Employers view their recent hires out of college as mostly prepared to succeed in entry-level positions but not necessarily to advance beyond that.

Proportions of Recent College Grad Applicants Who Have Full Set of Skills/Knowledge



Slightly higher proportions of executives and hiring managers in the Midwest and West than in the Northeast and South say recent graduates have the skills and knowledge to succeed at the entry level. Lower proportions of both audiences in the Northeast feel that recent graduates have the skills and knowledge to advance or be promoted.

Proportions who say recent graduates have the skills and knowledge to succeed in entry-level positions*		
	Business executives	Hiring managers
Northeast	52%	55%
South	53%	57%
Midwest	63%	66%
West	61%	59%

**Differences by region are not statistically significant.*

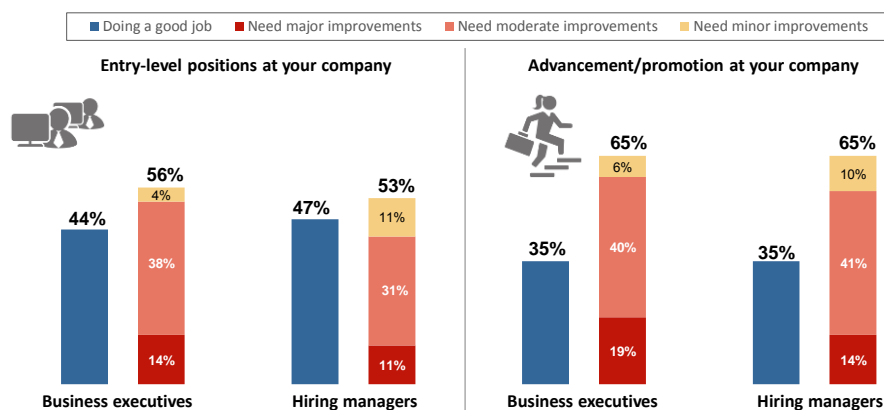
Proportions who say recent graduates have the skills and knowledge to <u>advance or be promoted</u> *		
	Business executives	Hiring managers
<i>Northeast</i>	30%	23%
<i>South</i>	35%	28%
<i>Midwest</i>	35%	26%
<i>West</i>	34%	26%

**Differences by region are not statistically significant.*

Majorities of executives (56%) and hiring managers (53%) believe that colleges and universities need to make improvements to ensure graduates' success at the entry level. Even larger proportions (65% of executives and 65% of hiring managers) feel that improvements are needed to ensure that graduates have the skills and knowledge needed to advance within their company.

Majorities believe that colleges need to make improvements to ensure that graduates gain the skills and knowledge needed for success, especially for advancement.

Assessment of Job Colleges/Universities Are Doing in Ensuring College Graduates Have Full Set of Skills/Knowledge Needed for Entry-Level Positions/Advancement



Priorities for College Learning and Sense of Graduates' Preparedness

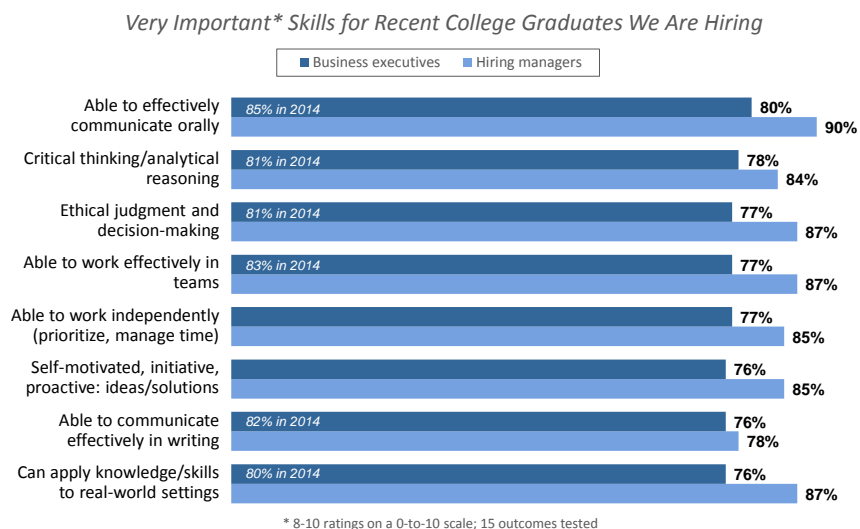
4. When hiring recent graduates, business executives and hiring managers place a high priority on demonstrated proficiency in a variety of skills and knowledge areas that cut across majors.

Respondents were asked to rate how important it is for recent college graduates they are hiring to demonstrate proficiency in a list of 15 skills and knowledge areas. Most of these are broad skills that apply across disciplines, and many rank as high priorities.

Top-tier college learning outcomes: The skill and knowledge areas of greatest importance to both business executives and hiring managers when hiring include oral communication, critical thinking, ethical judgment, working effectively in teams, working independently, self-motivation, written communication, and real-world application of skills and knowledge (each ranked by large majorities as very important, with a rating of eight, nine, or 10 on a zero-to-10 scale).

- Executives and hiring managers largely align in their rankings of learning outcomes, although hiring managers rate each skill or knowledge area as more important across the board. The areas on which hiring managers are notably more focused than executives are oral communication, ethical judgment, working effectively in teams, and applying knowledge and skills in real world settings.

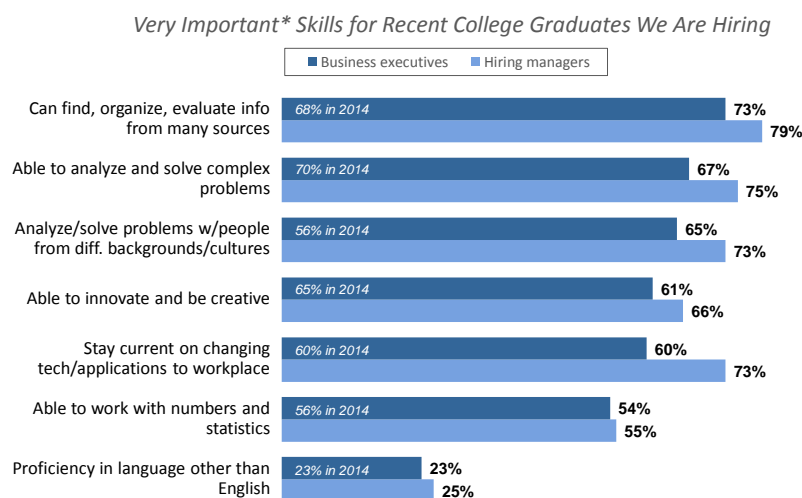
The learning priorities that executives and hiring managers value most highly cut across majors.



Second-tier college learning outcomes: Slightly less important outcomes, while still rated highly, include locating, organizing, and evaluating information from multiple sources, analyzing complex problems, working with people from different backgrounds, being innovative and creative, and staying current on changing technologies. Only slightly more than half of executives and hiring managers deem the ability to work with numbers and statistics as very important, and only about one in four prioritize proficiency in languages other than English.

- Hiring managers (73%) place a notably higher level of importance on staying current on changing technology and its applications in the workplace than do executives (60%).

Executives and hiring managers rank several other learning outcomes as only slightly less important.



* 8-10 ratings on a 0-to-10 scale; 15 outcomes tested

Business executives have shown a slight decline in the high importance they assign to most outcomes since 2014³, and their rankings of outcomes remain largely the same. However, notable increases have occurred in the level of importance that they place on recent graduates' ability to analyze and solve problems with people from different backgrounds and cultures (a nine-point increase since 2014) and their ability to locate, organize, and evaluate information from multiple sources (a five-point increase).

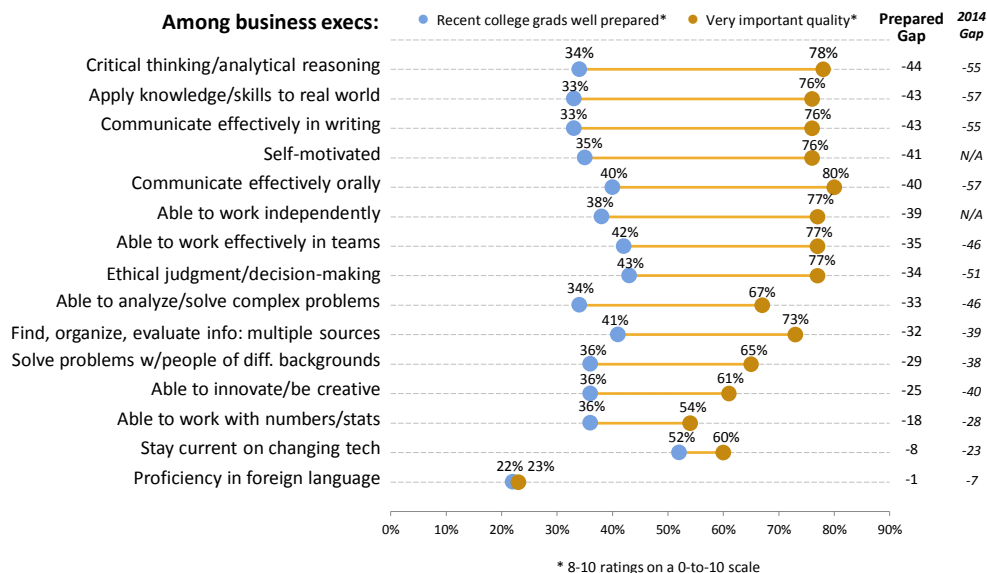
5. Notable gaps emerge between the importance that both business executives and hiring managers place on key learning outcomes and their sense that recent graduates are prepared in these areas.

Respondents were asked to rate how prepared recent college graduates are across the same list of 15 college learning outcomes. Executives and hiring managers generally agree in their sense of college graduates' preparedness across outcomes.

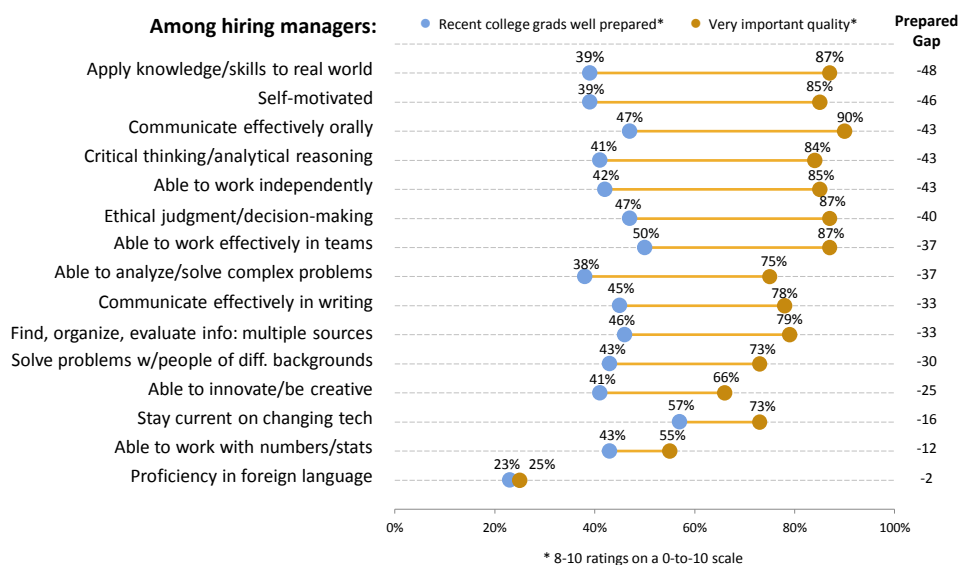
³ Results from the 2015 report ["Falling Short? College Learning and Career Success"](#)

While encouraging improvement has occurred in executives' sense of college graduates' preparedness since 2014, there still is notable room for improvement across learning outcomes, particularly in many of the very skills employers deem most important for workplace success.

Notable gaps emerge between the importance of key learning outcomes and executives' sense that recent graduates are prepared in these areas, even with some improvements.



Hiring managers also identify gaps in recent graduates' preparedness on key learning outcomes.



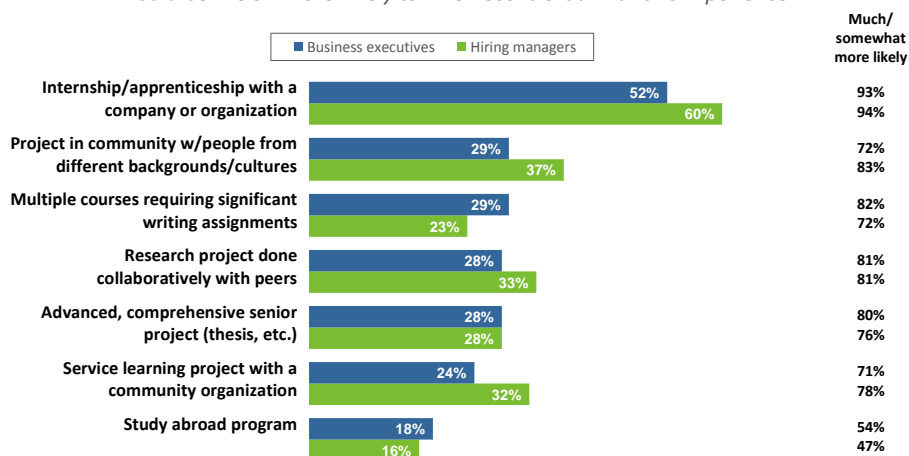
- Both executives and hiring managers perceive a **gap of at least 40 points in importance versus preparedness** in recent graduates' critical thinking and analytical reasoning skills, ability to apply knowledge and skills to the real world, oral communication skills, and self-motivation.
- Only 40% of executives rate recent college graduates as well prepared in **oral communication**, the quality that they prioritize most highly (80%) among the 15 tested (a 40-point gap in importance versus preparedness). This gap is 43 points among hiring managers.
- 76% of executives and 87% of hiring managers rate it very important that recent graduates demonstrate the ability to **apply knowledge and skills in real-world settings**, yet only 33% of executives (43-point gap) and 39% of hiring managers (48-point gap) think that recent graduates are very well prepared in this area.
- A **moderate improvement has occurred in business executives' perceptions of college graduates' preparedness** across learning outcomes since 2014 (most notably, an 18-point increase in graduates' ability to analyze and solve problems with people from different backgrounds and cultures and a 15-point increase in their staying current on changing technologies). Nonetheless, fewer than half of executives and hiring managers see recent graduates as well prepared in most areas.
- These perceived deficits in college graduates' preparation have implications for employers' overall satisfaction with new hires. Business executives who see bigger gaps in college graduates' ability to communicate effectively in writing and to work independently are significantly less satisfied with their experience hiring recent college graduates. Among hiring managers, gaps in recent hires' oral communication skills and ability to apply their knowledge and skills to real-world settings predict lower rates of satisfaction with recent college graduates.

6. Business executives and hiring managers indicate that participation in applied and project-based learning experiences—particularly internships or apprenticeships—gives recent college graduates an edge.

- **Internships and apprenticeships stand out as the applied learning experiences most highly valued by employers:** 93% of executives and 94% of hiring managers say that they would be more likely to hire a recent graduate who has held an internship or apprenticeship with a company or organization, including 52% of executives and significantly more hiring managers (60%) who would be much more likely to do so. Notably, this is a learning outcome for which the gap in importance versus preparedness is among the highest for both executives (43-point gap) and hiring managers (48-point gap).

Applied and project-based learning experiences, particularly internships or apprentice experiences, give recent college graduates an edge with both employer audiences.

Would be MUCH More Likely to Hire Recent Grad with this Experience



- When considering a job candidate, large majorities of business executives and hiring managers say that **completion of other types of applied and project-based learning experiences would give a recent graduate an advantage in the hiring process**, though notably fewer (less than 30%) say that this would make them much more likely to hire someone.
- **Employers at nonprofits** say that they would be more likely to hire recent graduates who have community-based or service learning

experience (41% of nonprofit executives and 43% of nonprofit hiring managers versus 21% of executives and 30% of hiring managers at private companies).

7. Business executives and hiring managers find electronic portfolios that summarize and demonstrate a candidate's accomplishments in key skill and knowledge areas more useful than college transcripts alone in evaluating recent graduates' potential to succeed in the workplace.

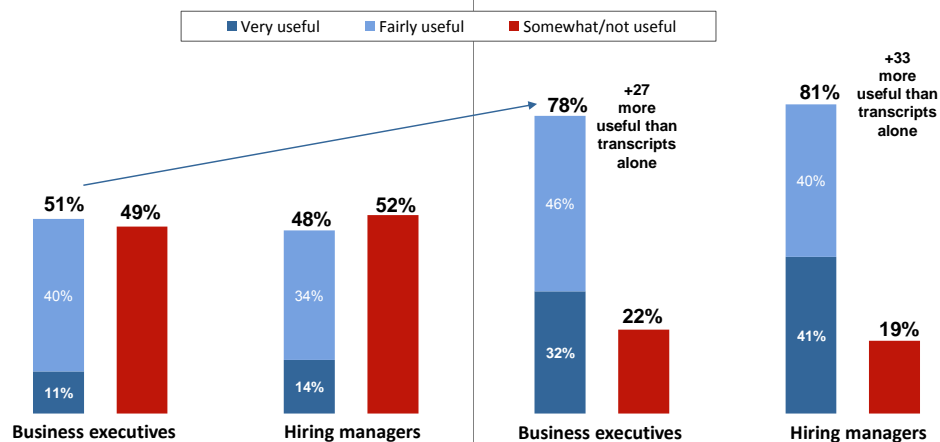
Large majorities of both audiences (64% of business executives and 70% of hiring managers) report that recent college graduates are at least fairly effective in communicating about the skills and knowledge they have gained in college that will be important for workplace success, but the mode of communication makes a difference.

- 78% of executives and 81% of hiring managers find ePortfolios useful when evaluating recent graduates, versus 51% of executives and 48% of hiring managers who find college transcripts useful.

Executives and hiring managers think ePortfolios are more useful than college transcripts alone.

How useful are **college transcripts** in evaluating recent college graduates' potential to succeed at your company?

In addition to resume and transcript, how useful would an **ePortfolio** of recent grads' college work be in evaluating them?



Employers Providing Professional Development

8. Most business executives and hiring managers report that their companies provide a broad variety of professional development opportunities, and most say that these opportunities include training in more advanced skills that will allow employees to take on more responsibility.

The vast majority of both executives (79%) and hiring managers (79%) say that their companies provide professional development opportunities to their employees. Those at larger companies (with 500 or more employees) are significantly more likely to say that their companies offer professional development, but large majorities of those at smaller companies with 25 to 99 employees do as well.

Executives in the Northeast are slightly more likely to say their employers offer professional development opportunities, and hiring managers in the Midwest are also slightly more likely to say so.

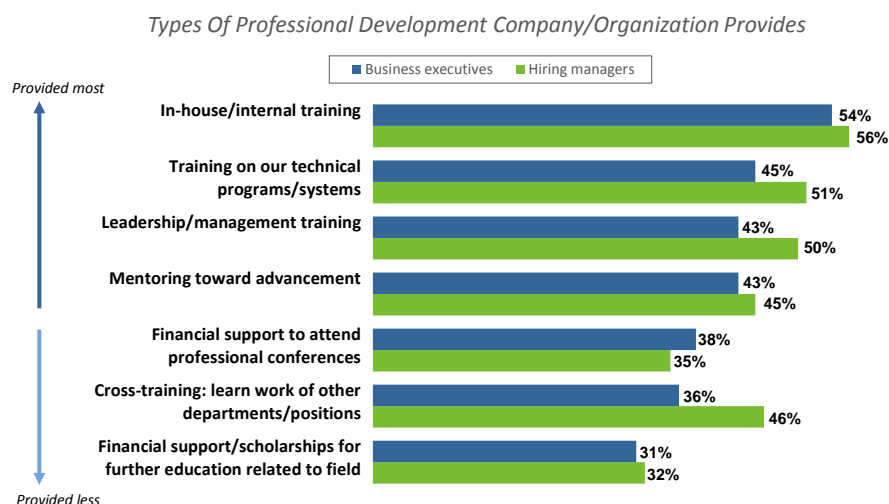
Proportions who say their companies provide professional development opportunities*		
	Business executives	Hiring managers
<i>All</i>	79%	79%
<i>Northeast</i>	82%	79%
<i>South</i>	77%	78%
<i>Midwest</i>	80%	84%
<i>West</i>	75%	77%

**Differences by region are not statistically significant.*

- More than half of executives (64%) and hiring managers (65%) report that this training involves **more advanced skills** or a combination of basic and advanced skills, suggesting that employers are stepping up to fill the gaps that they see in recent graduates' preparation for advancement at their companies.

- The most **common types of professional development** that executives and hiring managers offer include in-house training programs, training on the use of technical programs and systems, leadership and management training, and mentoring toward advancement.
- Fewer than two in five executives and hiring managers report offering financial support to attend professional conferences or for further education.
- Hiring managers are more likely than executives to recognize that their companies offer cross-training for employees to learn how to do work in other departments or positions.

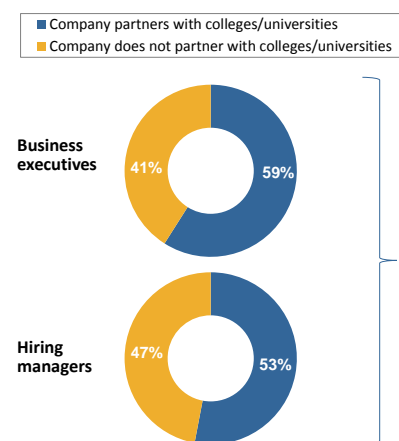
The most common programs are in-house training, training on use of programs/systems, management training, and mentoring.



Majorities of executives (59%) and hiring managers (53%) say that their companies **partner with colleges and universities** in some way, most commonly to offer service learning opportunities, internships, and/or apprenticeships—underscoring the weight that employers place on applied experience and real-world skills when evaluating college graduates. Smaller shares of executives and hiring managers say that their companies partner with colleges and universities in other ways, revealing opportunities for greater collaboration between employers and institutions on professional development.

Executives and hiring managers indicate that their companies partner with colleges/universities in a variety of ways.

Partnerships with Colleges/Universities



Ways Company Partners with Colleges/Universities

	Business execs	Hiring mgrs
Offer service learning, internships, apprenticeships to students	30%	32%
Leaders/staff serve on boards to advise on curriculum development	20%	17%
Employees are adjunct faculty to teach courses our company needs	18%	15%
Company sponsors a scholarship at a college or university	17%	17%
Collaborate to develop industry-specific degrees or credentials	16%	13%
Host college/university course(s) at company's location	12%	11%
Other ways we partner	4%	3%

Employers at larger companies/organizations are more likely to say they partner with colleges/universities in these ways.

- Executives and hiring managers at larger companies are significantly more likely than those at smaller companies to report that their companies partner with colleges and universities in most of these ways.