



**3 RIVERS WIB**  
THREE RIVERS WORKFORCE INVESTMENT BOARD

**Architecture and Engineering  
Occupations  
in Allegheny County  
2015-2025**



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Architecture and Engineering Occupations in Allegheny County, PA



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## Occupation Summary for Architecture and Engineering Occupations

<b>14,227</b> Jobs (2015) 15% above National average	<b>11.3%</b> % Change (2015-2025) Nation: 9.5%	<b>\$35.49/hr</b> Median Hourly Earnings Nation: \$37.97/hr
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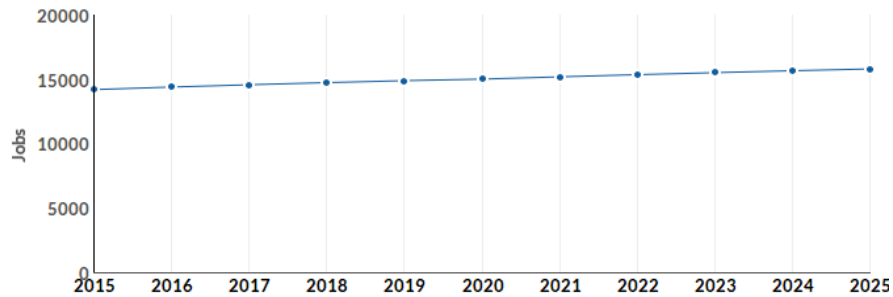


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## Growth

<b>14,227</b> 2015 Jobs	<b>15,833</b> 2025 Jobs	<b>1,606</b> Change (2015-2025)	<b>11.3%</b> % Change (2015-2025)
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Occupation	2015 Jobs	2025 Jobs	Change	% Change
Architects, Except Landscape and Naval (17-1011)	316	369	53	17%
Landscape Architects (17-1012)	94	108	14	15%
Cartographers and Photogrammetrists (17-1021)	52	61	9	17%
Surveyors (17-1022)	402	432	30	7%
Aerospace Engineers (17-2011)	124	172	48	39%
Agricultural Engineers (17-2021)	21	24	3	14%
Biomedical Engineers (17-2031)	96	118	22	23%
Chemical Engineers (17-2041)	209	226	17	8%
Civil Engineers (17-2051)	2,406	2,877	471	20%
Computer Hardware Engineers (17-2061)	186	229	43	23%
Electrical Engineers (17-2071)	1,075	1,213	138	13%
Electronics Engineers,	396	446	50	13%



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Occupation	2015 Jobs	2025 Jobs	Change	% Change
Except Computer (17-2072)				
Environmental Engineers (17-2081)	573	620	47	8%
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors (17-2111)	141	150	9	6%
Industrial Engineers (17-2112)	1,177	1,264	87	7%
Marine Engineers and Naval Architects (17-2121)	28	34	6	21%
Materials Engineers (17-2131)	172	178	6	3%
Mechanical Engineers (17-2141)	1,451	1,617	166	11%
Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)	78	92	14	18%
Nuclear Engineers (17-2161)	433	465	32	7%
Petroleum Engineers (17-2171)	305	392	87	29%
Engineers, All Other (17-2199)	438	488	50	11%
Architectural and Civil Drafters (17-3011)	881	859	-22	-2%
Electrical and Electronics Drafters (17-3012)	195	223	28	14%
Mechanical Drafters (17-3013)	492	495	3	1%
Drafters, All Other (17-3019)	62	70	8	13%
Aerospace Engineering and Operations Technicians (17-3021)	14	19	5	36%
Civil Engineering Technicians (17-3022)	515	537	22	4%
Electrical and Electronics Engineering Technicians (17-3023)	687	723	36	5%



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Occupation	2015 Jobs	2025 Jobs	Change	% Change
Electro-Mechanical Technicians (17-3024)	60	64	4	7%
Environmental Engineering Technicians (17-3025)	179	193	14	8%
Industrial Engineering Technicians (17-3026)	171	178	7	4%
Mechanical Engineering Technicians (17-3027)	218	244	26	12%
Engineering Technicians, Except Drafters, All Other (17-3029)	222	244	22	10%
Surveying and Mapping Technicians (17-3031)	359	408	49	14%

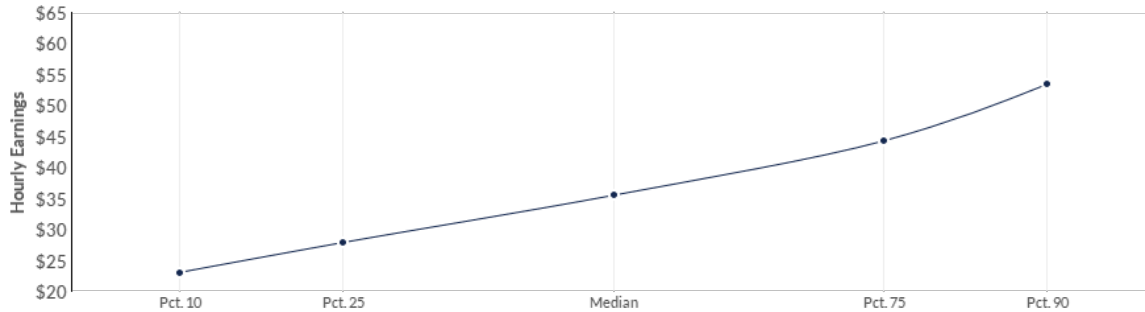


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## Percentile Earnings

<b>\$27.85/hr</b> 25th Percentile Earnings	<b>\$35.49/hr</b> Median Earnings	<b>\$44.29/hr</b> 75th Percentile Earnings
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Occupation	25th Percentile Earnings	Median Earnings	75th Percentile Earnings
Architects, Except Landscape and Naval (17-1011)	\$28.27	\$38.11	\$50.01
Landscape Architects (17-1012)	\$22.79	\$26.44	\$30.64
Cartographers and Photogrammetrists (17-1021)	\$18.87	\$22.94	\$30.37
Surveyors (17-1022)	\$21.67	\$26.03	\$32.17
Aerospace Engineers (17-2011)	\$30.56	\$43.63	\$51.61
Agricultural Engineers (17-2021)	\$29.03	\$34.93	\$45.80
Biomedical Engineers (17-2031)	\$24.10	\$33.62	\$43.07
Chemical Engineers (17-2041)	\$36.70	\$45.98	\$57.13
Civil Engineers (17-2051)	\$29.61	\$37.50	\$47.19
Computer Hardware Engineers (17-2061)	\$18.54	\$43.88	\$55.64
Electrical Engineers (17-2071)	\$34.57	\$42.10	\$49.80
Electronics Engineers, Except Computer (17-2072)	\$28.31	\$36.70	\$48.22
Environmental Engineers (17-2081)	\$32.41	\$41.11	\$50.38
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors (17-2111)	\$27.86	\$33.60	\$45.49
Industrial Engineers (17-2112)	\$32.88	\$40.66	\$51.55



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Occupation	25th Percentile Earnings	Median Earnings	75th Percentile Earnings
Marine Engineers and Naval Architects (17-2121)	\$34.20	\$42.32	\$53.56
Materials Engineers (17-2131)	\$30.95	\$38.57	\$47.80
Mechanical Engineers (17-2141)	\$33.07	\$41.40	\$52.17
Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)	\$35.17	\$43.49	\$54.39
Nuclear Engineers (17-2161)	\$32.74	\$43.06	\$52.45
Petroleum Engineers (17-2171)	\$43.38	\$58.08	\$72.82
Engineers, All Other (17-2199)	\$34.92	\$46.72	\$61.40
Architectural and Civil Drafters (17-3011)	\$19.61	\$24.62	\$29.14
Electrical and Electronics Drafters (17-3012)	\$23.86	\$28.78	\$34.87
Mechanical Drafters (17-3013)	\$18.50	\$24.14	\$29.87
Drafters, All Other (17-3019)	\$22.84	\$27.20	\$30.33
Aerospace Engineering and Operations Technicians (17-3021)	\$19.10	\$22.79	\$28.62
Civil Engineering Technicians (17-3022)	\$19.66	\$23.83	\$28.54
Electrical and Electronics Engineering Technicians (17-3023)	\$19.34	\$25.78	\$31.22
Electro-Mechanical Technicians (17-3024)	\$17.76	\$22.45	\$27.57
Environmental Engineering Technicians (17-3025)	\$17.69	\$21.29	\$25.73
Industrial Engineering Technicians (17-3026)	\$20.89	\$24.33	\$29.16
Mechanical Engineering Technicians (17-3027)	\$19.78	\$24.11	\$29.53
Engineering Technicians, Except Drafters, All Other (17-3029)	\$17.43	\$23.80	\$33.42
Surveying and Mapping Technicians (17-3031)	\$14.90	\$19.33	\$27.26

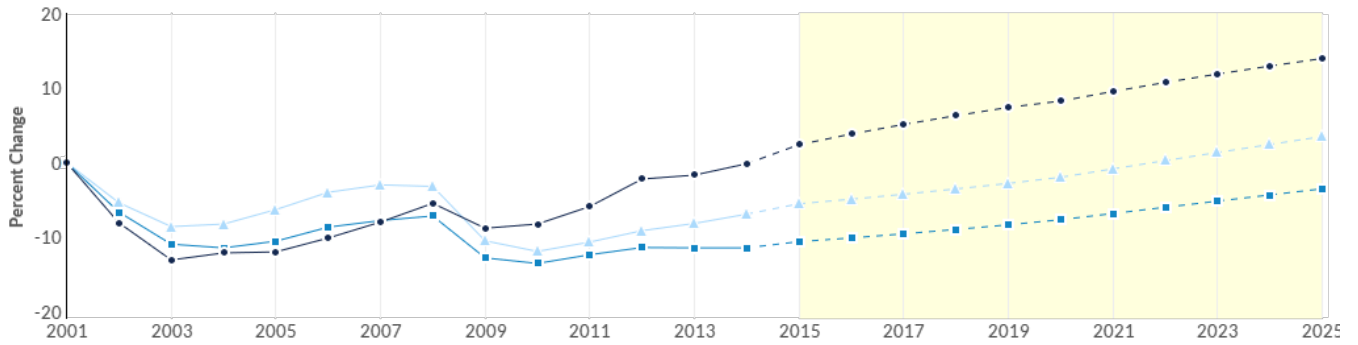




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## Regional Trends



	Region	2015 Jobs	2025 Jobs	Change	% Change
●	Region	14,227	15,833	1,606	11.3%
●	State	93,640	101,067	7,427	7.9%
●	Nation	2,480,735	2,717,522	236,787	9.5%

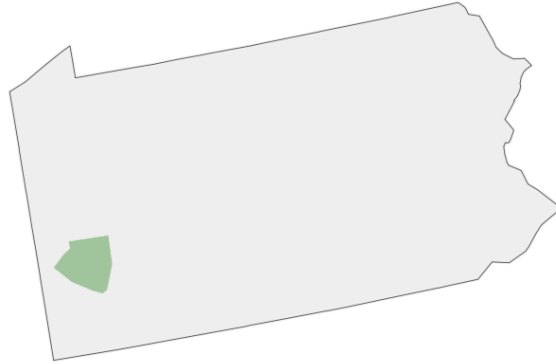


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## Regional Breakdown

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\* Highlighted areas show counties that contain the selected zip codes

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<b>ZIP</b>	<b>2025 Jobs</b>
Pittsburgh, PA 15219 (in Allegheny county)	1,757
Coraopolis, PA 15108 (in Allegheny county)	1,345
Pittsburgh, PA 15222 (in Allegheny county)	1,265
Pittsburgh, PA 15238 (in Allegheny county)	1,005
Pittsburgh, PA 15220 (in Allegheny county)	824

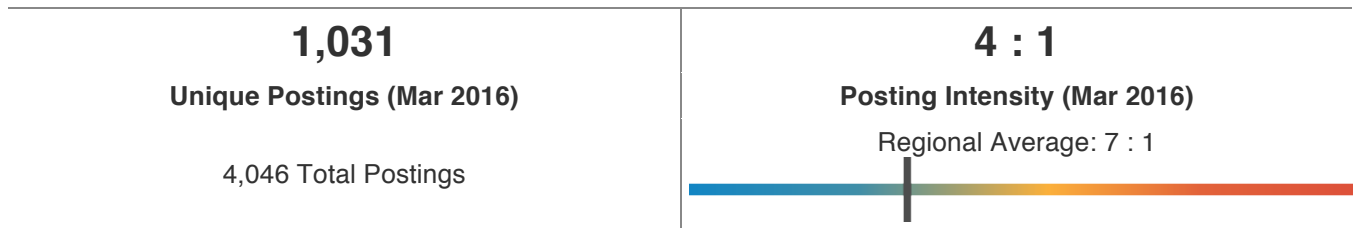
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## Job Postings Summary



There were **4,046** total job postings for 35 Occupations in March 2016, of which **1,031** were unique. These numbers give us a Posting Intensity of **4-to-1**, meaning that for every 4 postings there is 1 unique job posting. This is lower than the Posting Intensity for all other occupations and companies in the region (7-to-1), indicating that companies may not be trying as hard to hire this position.

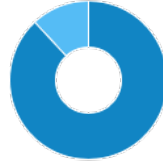


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## Occupation Gender Breakdown

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Gender	2015 Jobs	2015 Percent
• Males	12,527	88.1% 
• Females	1,700	11.9% 

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## Occupation Age Breakdown

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	Age	2015 Jobs	2015 Percent
●	14-18	10	0.1%
●	19-24	743	5.2% ■
●	25-34	3,119	21.9% ■■
●	35-44	2,926	20.6% ■■
●	45-54	3,520	24.7% ■■■
●	55-64	3,164	22.2% ■■■
●	65+	745	5.2% ■

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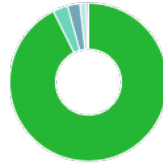


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## Occupation Race/Ethnicity Breakdown

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	Race/Ethnicity	2015 Jobs	2015 Percent	
●	White	13,177	92.6%	
●	Asian	434	3.1%	
●	Black or African American	363	2.5%	
●	Hispanic or Latino	179	1.3%	
●	Two or More Races	64	0.4%	
●	American Indian or Alaska Native	7	0.1%	
●	Native Hawaiian or Other Pacific Islander	3	0.0%	

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## Occupational Programs

<b>50</b> Programs (2014)	<b>3,104</b> Completions (2014)	<b>692</b> Openings (2014)
<b>CIP Code</b>	<b>Program</b>	<b>Completions (2014)</b>
14.1001	Electrical and Electronics Engineering	523
14.1901	Mechanical Engineering	457
14.0801	Civil Engineering, General	321
14.0701	Chemical Engineering	253
14.0501	Bioengineering and Biomedical Engineering	207



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## Industries Employing Architecture and Engineering Occupations

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Industry	Occupation Group Jobs in Industry (2015)	% of Occupation Group in Industry (2015)	% of Total Jobs in Industry (2015)
Engineering Services	5,610	39.4%	53.6%
Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	912	6.4%	14.6%
Corporate, Subsidiary, and Regional Managing Offices	757	5.3%	2.8%
Architectural Services	584	4.1%	54.6%
Federal Government, Civilian, Excluding Postal Service	491	3.4%	5.7%





## Appendix A - Occupations

<b>Code</b>	<b>Description</b>
17-1011	Architects, Except Landscape and Naval
17-1012	Landscape Architects
17-1021	Cartographers and Photogrammetrists
17-1022	Surveyors
17-2011	Aerospace Engineers
17-2021	Agricultural Engineers
17-2031	Biomedical Engineers
17-2041	Chemical Engineers
17-2051	Civil Engineers
17-2061	Computer Hardware Engineers
17-2071	Electrical Engineers
17-2072	Electronics Engineers, Except Computer
17-2081	Environmental Engineers
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors
17-2112	Industrial Engineers
17-2121	Marine Engineers and Naval Architects
17-2131	Materials Engineers
17-2141	Mechanical Engineers
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
17-2161	Nuclear Engineers
17-2171	Petroleum Engineers
17-2199	Engineers, All Other
17-3011	Architectural and Civil Drafters
17-3012	Electrical and Electronics Drafters
17-3013	Mechanical Drafters
17-3019	Drafters, All Other
17-3021	Aerospace Engineering and Operations Technicians



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<b>Code</b>	<b>Description</b>
17-3022	Civil Engineering Technicians
17-3023	Electrical and Electronics Engineering Technicians
17-3024	Electro-Mechanical Technicians
17-3025	Environmental Engineering Technicians
17-3026	Industrial Engineering Technicians
17-3027	Mechanical Engineering Technicians
17-3029	Engineering Technicians, Except Drafters, All Other
17-3031	Surveying and Mapping Technicians

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## Appendix B - Data Sources and Calculations

### Location Quotient

Location quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region unique in comparison to the national average.

### Occupation Data

EMSI occupation employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level EMSI earnings by industry.

### Completers Data

The completers data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

### Institution Data

The institution data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

### Industry Data

EMSI industry data have various sources depending on the class of worker. (1) For QCEW Employees, EMSI primarily uses the QCEW (Quarterly Census of Employment and Wages), with supplemental estimates from County Business Patterns and Current Employment Statistics. (2) Non-QCEW employees data are based on a number of sources including QCEW, Current Employment Statistics, County Business Patterns, BEA State and Local Personal Income reports, the National Industry-Occupation Employment Matrix (NIOEM), the American Community Survey, and Railroad Retirement Board statistics. (3) Self-Employed and Extended Proprietor classes of worker data are primarily based on the American Community Survey, Nonemployer Statistics, and BEA State and Local Personal Income Reports. Projections for QCEW and Non-QCEW Employees are informed by NIOEM and long-term industry projections published by individual states.



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## Staffing Patterns Data

The staffing pattern data in this report are compiled from several sources using a specialized process. For QCEW and Non-QCEW Employees classes of worker, sources include Occupational Employment Statistics, the National Industry-Occupation Employment Matrix, and the American Community Survey. For the Self-Employed and Extended Proprietors classes of worker, the primary source is the American Community Survey, with a small amount of information from Occupational Employment Statistics.

## State Data Sources

This report uses state data from the following agencies: Pennsylvania Department of Labor and Industry, Center for Workforce Information and Analysis