

Ohio Short-Term Employment Forecast

1st Quarter 2019 to 1st Quarter 2021



Summary

The data in this report was compiled and analyzed prior to the COVID-19 pandemic. (See Data Limitations on page 3 for more information.) As of March 6, 2020, employment in Ohio was expected to increase by 1.6 percent from first quarter 2019 to first quarter 2021, a gain of 94,550 jobs. In addition, 708,922 job openings were projected annually — 252,833 because of workers leaving the labor force, and another 408,814 job openings because of workers moving from one occupation to another occupation.

Methodology

Current methodology reflects the changing workforce of the 21st century and recognizes that workers may have several career changes during their working life. This dynamic workforce is reflected in the estimation of job openings, which are created when a worker moves into another occupation and is no longer limited to the notion that only retiring workers will create job openings. This methodology considers job openings resulting from labor force exits (workers who leave the labor force entirely due to retirement or other reasons) and from occupational transfers (workers who move from one occupation into another occupation). The latter are much more common as a worker may switch occupations multiple times during their working life for various reasons. Occupational transfers do not account for workers who change jobs but stay in the same occupation as there is no impact on the overall employment in the occupation.

Total Openings in an Occupation

The other source of job openings is through industry growth. As the demand for products and services increases in an industry, the number of workers in occupations employed in that industry will also increase. Occupational job growth is the difference between the base employment and projected employment values for a period. Occupational growth may be negative, as a result of changes in technology resulting in fewer workers needed to achieve the same level of labor productivity. Overall, the number of openings created by growth, for most occupations, is lower than openings due to labor force exits and transfers.

Key Points for End Users

Employment projections provide an idea of what is expected for workers in the future. Educators, workforce professionals, employers, job seekers, students, and others can use projections to learn about:

- Areas of the economy that are projected to have positive or negative growth indicating those areas expected to have the best employment opportunities.
- Occupations projected to have more job openings than others, informing stakeholders who prepare and train the workforce.
- Possible career pathways, as occupations with a high number of transfers may lose workers to a related occupation requiring a higher level of education or experience and increased pay.

Current methodology provides greater clarity in what is being measured, thus the results are more reliable and more accurate for smaller occupations. This methodology was designed to better understand and project labor force dynamics.

Technical Notes

The Ohio short-term industry and occupational forecasts were derived primarily from data produced by the Occupational Employment Statistics (OES) and the Quarterly Census of Employment and Wages (QCEW) programs. The forecasts were funded by a grant from the U.S. Department of Labor (DOL).

Short-term (two-year) and long-term (ten-year) employment forecasts are calculated differently and serve different purposes. The two-year forecasts reflect seasonal and business-cycle changes; the ten-year forecasts are strongly influenced by structural changes in the economy. Short-term forecasts provide more timely information; long-term forecasts are helpful for extended economic planning and evaluation.

Industry Employment Forecasts

The forecasting models utilized a historical monthly employment series from the QCEW program data through March 2019. Industry groups with three- or four-digit North American Industry Classification System (NAICS) codes were chosen. Trend, ordinary least squares regression, and autoregressive forecasting models were used. These methods measure the relationships between employment and one or more other economic variables, such as populations, labor force participation rate, income, housing, related industries, and more.

Occupational Employment Forecasts

Occupational estimates were derived from an industry-occupation matrix. From a three-year OES survey cycle, industry staffing patterns were generated based on the Standard Occupational Classification (SOC) coding structure. Occupational patterns for work arrangements outside the scope of the OES program (including agriculture, private household, self-employed and unpaid family workers) were developed using U.S. national staffing patterns and U.S. Census of Agriculture information.

Wages

The median wage estimates were produced using OES data, which are based on a semiannual mail survey. The survey gathers employment and wage data for specific occupations by geographic area and industry. Statewide Ohio wages were used when available.

Annual Openings

To project occupational openings, Ohio uses national separation rates calculated by the Bureau of Labor Statistics (BLS) caused by workers exiting the labor force due to retirement or other reasons (labor force exits) and separations caused by workers transferring to different occupations (occupational transfers). Projections of separations are combined with projections of employment change to determine occupational openings.

Educational and Training Classifications

DOL's educational and training classification system consists of three categories: a) typical education needed for entry, b) commonly required work experience in related occupations, and c) typical on-the-job training needed to obtain competency in the occupation. Complete definitions can be found at <https://www.bls.gov/emp/documentation/education-training-system.htm>.

Data Limitations

Every effort was made to ensure the accuracy of the projections, but data and forecasts are subject to error. The information in this report is best used as an indicator of employment trends, not as an exact count or prediction. It should be used in combination with other data sources and information. While every attempt is made to incorporate current and near-future events, such as business closings, corporate layoffs, openings, and expansions, it's not possible to know everything that might happen. Events that may take place after the projection period or announcements concerning closings, layoffs, openings, and expansions known after projections were completed are not reflected in the forecasts. Also, legislative policy could cause employment to change. Events such as these will likely cause the actual employment numbers to vary significantly from these projections.

This report provides estimates of the number of jobs, not the number of employees. It makes no distinctions for employment characteristics such as full-time, part-time or secondary jobs.

For additional information or questions, visit <http://OhioLMI.com>, email ContactLMI@jfs.ohio.gov, or call (888) 296-7541, option 6.

Employment Forecast Report by Major Industry

First Quarter 2019 to First Quarter 2021

Industry Title	2019 Employment	2021 Forecast	Change 2019 - 2021	
			Employment	Percent
Total - All Industries	5,809,894	5,904,444	94,550	1.6%
Goods-Producing	1,016,993	1,043,501	26,508	2.6%
Agriculture, Forestry, Fishing and Hunting	97,216	98,175	959	1.0%
Mining	11,575	12,075	500	4.3%
Construction	206,257	221,649	15,392	7.5%
Manufacturing	701,945	711,602	9,657	1.4%
Service-Providing	4,507,329	4,569,589	62,260	1.4%
Wholesale Trade	235,965	241,091	5,126	2.2%
Retail Trade	549,127	544,736	-4,391	-0.8%
Transportation and Warehousing	209,790	219,849	10,059	4.8%
Utilities	18,997	18,389	-608	-3.2%
Information	69,711	66,746	-2,965	-4.3%
Finance and Insurance	240,545	241,489	944	0.4%
Real Estate and Rental and Leasing	63,951	66,083	2,132	3.3%
Professional, Scientific, and Technical Services	267,606	275,888	8,282	3.1%
Management of Companies and Enterprises	141,268	144,078	2,810	2.0%
Administrative and Waste Services	309,660	309,631	-29	0.0%
Educational Services	445,609	447,393	1,784	0.4%
Health Care and Social Assistance	840,445	863,460	23,015	2.7%
Arts, Entertainment, and Recreation	67,522	74,236	6,714	9.9%
Accommodation and Food Services	472,621	479,747	7,126	1.5%
Other Services (Except Government)	228,689	230,582	1,893	0.8%
Government	345,823	346,191	368	0.1%
Self-Employed and Unpaid Family Workers	285,572	291,354	5,782	2.0%

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, June 2020.

Ohio Short-Term Industry Employment* Forecast

First Quarter 2019 to First Quarter 2021

NAICS Code	Industry Title	2019 Employment	2021 Forecast	Change 2019 - 2021	
				Employment	Percent
	Total - All Industries	5,809,894	5,904,444	94,550	1.6%
	Goods-Producing	1,016,993	1,043,501	26,508	2.6%
	Natural Resources, inc. Agriculture and Mining	108,791	110,250	1,459	1.3%
	Agriculture, Forestry, Fishing and Hunting	97,216	98,175	959	1.0%
	Mining	11,575	12,075	500	4.3%
	Construction	206,257	221,649	15,392	7.5%
236	Construction of Buildings	47,787	51,106	3,319	6.9%
237	Heavy and Civil Engineering Construction	25,435	26,867	1,432	5.6%
238	Specialty Trade Contractors	133,035	143,676	10,641	8.0%
	Manufacturing	701,945	711,602	9,657	1.4%
311	Food Manufacturing	59,639	60,145	506	0.8%
312	Beverage and Tobacco Product Manufacturing	9,785	10,473	688	7.0%
321	Wood Product Manufacturing	12,808	13,165	357	2.8%
322	Paper Manufacturing	20,504	20,959	455	2.2%
323	Printing and Related Support Activities	21,229	21,348	119	0.6%
325	Chemical Manufacturing	46,162	47,289	1,127	2.4%
326	Plastics and Rubber Products Manufacturing	58,455	60,230	1,775	3.0%
327	Nonmetallic Mineral Product Manufacturing	26,958	27,500	542	2.0%
331	Primary Metal Manufacturing	36,057	35,802	-255	-0.7%
332	Fabricated Metal Product Manufacturing	103,518	103,787	269	0.3%
333	Machinery Manufacturing	80,286	81,391	1,105	1.4%
334	Computer and Electronic Product Manufacturing	21,229	21,475	246	1.2%
335	Electrical Equipment and Appliance Mfg.	26,924	27,297	373	1.4%
336	Transportation Equipment Manufacturing	129,096	131,172	2,076	1.6%
337	Furniture and Related Product Manufacturing	15,682	15,891	209	1.3%
339	Miscellaneous Manufacturing	22,014	22,266	252	1.1%
	Service-Providing	4,507,329	4,569,589	62,260	1.4%
	Trade, Transportation and Utilities	1,013,879	1,024,065	10,186	1.0%
	Wholesale Trade	235,965	241,091	5,126	2.2%
423	Merchant Wholesalers, Durable Goods	140,557	143,551	2,994	2.1%
424	Merchant Wholesalers, Nondurable Goods	76,978	79,695	2,717	3.5%
425	Wholesale Electronic Markets & Agents & Brokers	18,430	17,845	-585	-3.2%
	Retail Trade	549,127	544,736	-4,391	-0.8%
441	Motor Vehicle and Parts Dealers	78,771	80,219	1,448	1.8%
442	Furniture and Home Furnishings Stores	13,613	13,778	165	1.2%
443	Electronics and Appliance Stores	15,388	14,754	-634	-4.1%
444	Building Mat./Garden Equip. & Supplies Dealers	49,234	52,806	3,572	7.3%
445	Food and Beverage Stores	101,406	100,535	-871	-0.9%
446	Health and Personal Care Stores	35,877	35,456	-421	-1.2%
447	Gasoline Stations	36,190	36,794	604	1.7%
448	Clothing and Clothing Accessories Stores	36,675	34,789	-1,886	-5.1%
451	Sporting Goods, Hobby, Book, and Music Stores	18,056	17,403	-653	-3.6%
452	General Merchandise Stores	107,929	100,960	-6,969	-6.5%
453	Miscellaneous Store Retailers	29,470	29,596	126	0.4%
454	Nonstore Retailers	26,518	27,646	1,128	4.3%
	Transportation and Warehousing	209,790	219,849	10,059	4.8%
481	Air Transportation	9,927	10,235	308	3.1%
484	Truck Transportation	70,691	72,446	1,755	2.5%
485	Transit and Ground Passenger Transport	10,931	11,351	420	3.8%
488	Support Activities for Transportation	21,959	22,621	662	3.0%
492	Couriers and Messengers	27,124	28,756	1,632	6.0%
493	Warehousing and Storage	59,080	64,208	5,128	8.7%
	Utilities	18,997	18,389	-608	-3.2%
	Information	69,711	66,746	-2,965	-4.3%
511	Publishing Industries	20,570	18,495	-2,075	-10.1%

Ohio Short-Term Industry Employment* Forecast

First Quarter 2019 to First Quarter 2021

NAICS Code	Industry Title	2019 Employment	2021 Forecast	Change 2019 - 2021	
				Employment	Percent
512	Motion Picture and Sound Recording Industries	6,150	6,303	153	2.5%
515	Broadcasting (except Internet)	5,908	5,685	-223	-3.8%
517	Telecommunications	23,009	21,652	-1,357	-5.9%
518	Data processing, hosting and related services	8,177	8,663	486	5.9%
519	Other Information Services	5,897	5,948	51	0.9%
	Financial Activities	304,496	307,572	3,076	1.0%
	Finance and Insurance	240,545	241,489	944	0.4%
522	Credit Intermediation and Related Activities	96,379	97,387	1,008	1.0%
523	Securities, commodity contracts & investments	19,398	19,908	510	2.6%
524	Insurance Carriers and Related Activities	123,559	122,984	-575	-0.5%
	Real Estate and Rental and Leasing	63,951	66,083	2,132	3.3%
531	Real Estate	45,364	46,893	1,529	3.4%
532	Rental and Leasing Services	17,939	18,528	589	3.3%
	Professional and Business Services	718,534	729,597	11,063	1.5%
	Professional, Scientific, and Technical Services	267,606	275,888	8,282	3.1%
5411	Legal Services	31,264	30,353	-911	-2.9%
5412	Accounting and Bookkeeping Services	33,757	33,602	-155	-0.5%
5413	Architectural, Engineering, and Related Services	42,270	43,170	900	2.1%
5414	Specialized Design Services	7,030	7,291	261	3.7%
5415	Computer Systems Design and Related Services	63,911	68,268	4,357	6.8%
5416	Management and Technical Consulting Services	34,697	36,825	2,128	6.1%
5417	Scientific Research and Development Services	17,874	18,186	312	1.7%
5418	Advertising and Related Services	12,841	12,622	-219	-1.7%
5419	Other Professional and Technical Services	23,962	25,571	1,609	6.7%
	Management of Companies and Enterprises	141,268	144,078	2,810	2.0%
	Administrative and Waste Services	309,660	309,631	-29	0.0%
561	Administrative and Support Services	292,038	290,928	-1,110	-0.4%
562	Waste Management and Remediation Service	17,622	18,703	1,081	6.1%
	Education and Health Services	1,286,054	1,310,853	24,799	1.9%
	Educational Services	445,609	447,393	1,784	0.4%
6111	Elementary and Secondary Schools	287,830	285,459	-2,371	-0.8%
6112	Junior Colleges	18,602	18,841	239	1.3%
6113	Colleges, Universities, and Professional Schools	97,644	99,471	1,827	1.9%
6116	Other Schools and Instruction	11,758	12,668	910	7.7%
6117	Educational Support Services	25,134	26,328	1,194	4.8%
	Health Care and Social Assistance	840,445	863,460	23,015	2.7%
621	Ambulatory Health Care Services	273,384	282,490	9,106	3.3%
622	Hospitals	283,563	290,521	6,958	2.5%
623	Nursing and Residential Care Facilities	167,533	168,455	922	0.6%
624	Social Assistance	115,965	121,994	6,029	5.2%
	Leisure and Hospitality	540,143	553,983	13,840	2.6%
	Arts, Entertainment, and Recreation	67,522	74,236	6,714	9.9%
711	Performing Arts and Spectator Sports	12,896	13,149	253	2.0%
712	Museums, Historical Sites, and Similar Institution	6,573	6,835	262	4.0%
713	Amusement, Gambling, and Recreation Industries	48,053	54,252	6,199	12.9%
	Accommodation and Food Services	472,621	479,747	7,126	1.5%
721	Accommodation	36,098	37,320	1,222	3.4%
722	Food Services and Drinking Places	436,523	442,427	5,904	1.4%
	Other Services (Except Government)	228,689	230,582	1,893	0.8%
811	Repair and Maintenance	48,604	49,934	1,330	2.7%
812	Personal and Laundry Services	55,533	57,105	1,572	2.8%
	Religious, Grantmaking, Civic, Professional, and Similar Organizations	106,522	105,889	-633	-0.6%
814	Private Household	18,030	17,654	-376	-2.1%

Ohio Short-Term Industry Employment* Forecast

First Quarter 2019 to First Quarter 2021

NAICS Code	Industry Title	2019 Employment	2021 Forecast	Change 2019 - 2021	
				Employment	Percent
	Government	345,823	346,191	368	0.1%
4911	Postal Service	23,163	22,750	-413	-1.8%
9991	Federal Government, Excluding Post Office	55,574	56,377	803	1.4%
9992	State Govt, excluding Education & Hospitals	52,615	51,364	-1,251	-2.4%
9993	Local Govt, excluding Education & Hospitals	214,471	215,700	1,229	0.6%
	Self-Employed and Unpaid Family Workers	285,572	291,354	5,782	2.0%

*Industries with at least 5,000 employment.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, June 2020.

Ohio Occupational Employment Forecast by Major Occupational Group

First Quarter 2019 to First Quarter 2021

Breakdown of Annual Openings

SOC Code	Occupational Title	Employment		Change in Employment 2019- 2021	Annual Openings			
		2019 Employment	2021 Forecast		Change [1]	Exits [2]	Transfers [3]	Total
	Total, All Occupations	5,809,894	5,904,444	94,550	47,275	252,833	408,814	708,922
11-0000	Management Occupations	362,056	369,956	7,900	3,950	11,810	19,606	35,366
13-0000	Business and Financial Operations Occupations	302,774	308,514	5,740	2,870	8,317	20,626	31,813
15-0000	Computer and Mathematical Occupations	157,811	162,745	4,934	2,467	2,670	9,040	14,177
17-0000	Architecture and Engineering Occupations	100,389	102,889	2,500	1,250	2,364	5,407	9,021
19-0000	Life, Physical, and Social Science Occupations	38,545	39,348	803	402	763	3,004	4,169
21-0000	Community and Social Service Occupations	103,476	105,783	2,307	1,154	3,744	7,336	12,234
23-0000	Legal Occupations	38,351	38,240	-111	-56	977	1,555	2,476
25-0000	Education, Training, and Library Occupations	333,542	335,616	2,074	1,037	13,106	15,882	30,025
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	88,704	89,327	623	312	3,687	6,258	10,257
29-0000	Healthcare Practitioners and Technical Occupations	374,072	382,818	8,746	4,373	9,934	11,446	25,753
31-0000	Healthcare Support Occupations	192,831	197,821	4,990	2,495	9,853	12,254	24,602
33-0000	Protective Service Occupations	117,259	118,381	1,122	561	5,288	7,326	13,175
35-0000	Food Preparation and Serving Related Occupations	494,222	502,063	7,841	3,920	34,910	51,428	90,258
37-0000	Building and Grounds Cleaning and Maintenance Occupations	180,466	180,924	458	229	10,182	13,378	23,789
39-0000	Personal Care and Service Occupations	188,203	194,837	6,634	3,317	13,308	15,044	31,669
41-0000	Sales and Related Occupations	538,559	538,040	-519	-260	28,604	45,780	74,124
43-0000	Office and Administrative Support Occupations	832,582	835,040	2,458	1,229	40,342	57,137	98,708
45-0000	Farming, Fishing, and Forestry Occupations	14,863	14,932	69	34	590	1,812	2,436
47-0000	Construction and Extraction Occupations	205,958	218,688	12,730	6,365	6,835	16,671	29,871
49-0000	Installation, Maintenance, and Repair Occupations	217,937	223,580	5,643	2,822	6,946	14,578	24,346
51-0000	Production Occupations	510,376	514,913	4,537	2,268	19,532	39,235	61,035
53-0000	Transportation and Material Moving Occupations	416,918	429,989	13,071	6,536	19,074	34,010	59,620

[1] Numeric change measures the projected annual number of job gains or losses in an occupation for the projection period.

[2] Exits are the projected number of workers leaving an occupation and exiting the labor force entirely.

[3] Transfers are the projected number of workers leaving an occupation and transferring to a different occupation.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, June 2020.

Ohio's Fastest Growing Occupations*

First Quarter 2019 to First Quarter 2021

SOC Code ¹	Occupational Title	Percent Change	Total Annual Openings	Median Wage** May 2019
47-2181	Roofers	12.9%	886	\$19.39
47-2021	Brickmasons and Blockmasons	11.5%	646	\$26.53
39-3091	Amusement and Recreation Attendants	10.5%	2,551	\$9.47
47-2121	Glaziers	10.4%	252	\$21.89
47-2051	Cement Masons and Concrete Finishers	10.0%	757	\$23.32
47-2221	Structural Iron and Steel Workers	9.3%	608	\$28.98
39-3093	Locker Room, Coatroom, and Dressing Room Attendants	9.0%	165	\$10.03
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	8.8%	150	\$20.83
39-9031	Fitness Trainers and Aerobics Instructors	7.6%	2,032	\$14.73
39-2021	Nonfarm Animal Caretakers	7.6%	1,982	\$10.79
29-2056	Veterinary Technologists and Technicians	7.6%	450	\$16.40
29-1131	Veterinarians	7.3%	256	\$46.65
47-2152	Plumbers, Pipefitters, and Steamfitters	7.2%	2,300	\$26.58
15-1122	Information Security Analysts	7.1%	390	\$44.59
47-4021	Elevator Installers and Repairers	7.1%	85	\$43.99
53-3041	Taxi Drivers and Chauffeurs	7.1%	2,003	▲
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	7.0%	1,683	\$22.73
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	7.0%	590	\$12.49
47-3015	Helpers--Pipefitters, Plumbers, Pipefitters, and Steamfitters	6.9%	152	\$14.61
47-3019	Helpers, Construction Trades, All Other	6.9%	92	\$14.90
47-2061	Construction Laborers	6.8%	6,597	\$20.04
29-1071	Physician Assistants	6.6%	415	\$52.09
47-5021	Earth Drillers, Except Oil and Gas	6.5%	86	▲
49-9011	Mechanical Door Repairers	6.5%	148	\$20.55
47-2111	Electricians	6.4%	4,068	\$25.43
11-9021	Construction Managers	6.3%	1,530	\$43.10
47-2211	Sheet Metal Workers	6.1%	634	\$26.93
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	6.1%	2,098	\$31.91
47-3013	Helpers--Electricians	6.1%	136	\$14.74
29-1171	Nurse Practitioners	6.0%	662	\$49.75

¹ Occupational codes based on SOC 2010 coding structure. Detailed information - <http://www.bls.gov/soc/>

*Based on occupations with at least 500 workers.

** Wage estimates are based on Ohio's OES surveys.

▲ Wage data unavailable.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, June 2020

Occupations in Ohio with the Most Annual Openings

First Quarter 2019 to First Quarter 2021

SOC Code ¹	Occupational Title	Total Annual Openings	Median Wage* May 2019
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	30,189	▲
41-2011	Cashiers	21,310	\$10.29
41-2031	Retail Salespersons	20,923	\$11.36
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	18,897	\$14.43
35-3031	Waiters and Waitresses	18,132	\$9.59
43-9061	Office Clerks, General	13,517	\$16.49
43-4051	Customer Service Representatives	13,489	\$16.70
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	10,922	\$12.52
53-3032	Heavy and Tractor-Trailer Truck Drivers	10,333	\$21.66
43-5081	Stock Clerks and Order Fillers	10,226	▲
11-9013	Farmers, Ranchers, and Other Agricultural Managers	8,618	\$31.81
29-1141	Registered Nurses	8,612	\$31.63
51-2098	Assemblers and Fabricators, All Other, Including Team Assemblers	8,504	\$16.40
39-9021	Personal Care Aides	8,097	\$11.08
31-1014	Nursing Assistants	7,725	\$13.61
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	7,576	\$17.42
31-1011	Home Health Aides	7,452	\$11.08
43-3031	Bookkeeping, Accounting, and Auditing Clerks	6,989	\$18.75
47-2061	Construction Laborers	6,597	\$20.04
41-4012	Sales Representatives, Wholesale and Manufacturing, Ex. Tech. and Scientific Products	6,513	\$27.95
49-9071	Maintenance and Repair Workers, General	6,386	\$19.32
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	6,258	\$14.72
35-2014	Cooks, Restaurant	5,867	\$12.04
11-1021	General and Operations Managers	5,855	\$46.81
53-3033	Light Truck or Delivery Services Drivers	5,635	\$15.27
37-3011	Landscaping and Groundskeeping Workers	5,609	\$14.07
39-9011	Childcare Workers	5,583	\$10.65
41-1011	First-Line Supervisors of Retail Sales Workers	5,354	\$18.52
37-2012	Maids and Housekeeping Cleaners	5,309	\$10.85
13-2011	Accountants and Auditors	5,229	\$31.58

¹ Occupational codes based on SOC 2010 coding structure. Detailed information - <http://www.bls.gov/soc/>

* Wage estimates are based on Ohio's OES surveys.

▲ Wage data unavailable.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, June 2020.

Ohio Short-Term Occupational* Employment Forecast
First Quarter 2019 to First Quarter 2021

SOC Code *	Occupational Title**	Employment		Change in Employment		Annual Openings				Median Wage*** May 2019
		2019 Employment	2021 Forecast	2019-2021	Percent	Change [1]	Exits [2]	Transfers [3]	Total	
00-0000	Total, All Occupations	5,809,894	5,904,444	94,550	1.6%	47,275	252,833	408,814	708,922	\$18.54
11-0000	Management Occupations	362,056	369,956	7,900	2.2%	3,950	11,810	19,606	35,366	\$47.08
11-1011	Chief Executives	5,690	5,647	-43	-0.8%	-22	151	252	381	\$88.94
11-1021	General and Operations Managers	59,194	60,511	1,317	2.2%	658	1,255	3,942	5,855	\$46.81
11-1031	Legislators	2,559	2,585	26	1.0%	13	65	130	208	\$19,700 **
11-2011	Advertising and Promotions Managers	386	383	-3	-0.8%	-2	8	28	34	\$48.34
11-2021	Marketing Managers	6,921	7,057	136	2.0%	68	142	478	688	\$60.39
11-2022	Sales Managers	11,292	11,508	216	1.9%	108	232	780	1,120	\$59.70
11-2031	Public Relations and Fundraising Managers	1,963	1,997	34	1.7%	17	44	126	187	\$48.26
11-3011	Administrative Services Managers	11,565	11,830	265	2.3%	132	322	652	1,106	\$41.31
11-3021	Computer and Information Systems Managers	13,876	14,251	375	2.7%	188	241	856	1,285	\$61.65
11-3031	Financial Managers	21,046	21,794	748	3.6%	374	464	1,188	2,026	\$58.23
11-3051	Industrial Production Managers	11,792	12,061	269	2.3%	134	256	614	1,004	\$49.01
11-3061	Purchasing Managers	2,315	2,371	56	2.4%	28	56	139	223	\$55.10
11-3071	Transportation, Storage, and Distribution Managers	5,430	5,673	243	4.5%	122	120	316	558	\$41.35
11-3111	Compensation and Benefits Managers	535	543	8	1.5%	4	14	32	50	\$59.14
11-3121	Human Resources Managers	4,610	4,706	96	2.1%	48	106	288	442	\$54.62
11-3131	Training and Development Managers	878	900	22	2.5%	11	22	57	90	\$51.58
11-9013	Farmers, Ranchers, and Other Agricultural Managers	81,903	82,781	878	1.1%	439	5,119	3,060	8,618	\$31.81
11-9021	Construction Managers	14,481	15,392	911	6.3%	456	314	760	1,530	\$43.10
11-9031	Education Administrators, Preschool and Childcare Center/Program	2,395	2,443	48	2.0%	24	62	126	212	\$20.77
11-9032	Education Administrators, Elementary and Secondary School	9,909	9,887	-22	-0.2%	-11	255	512	756	\$89,960 **
11-9033	Education Administrators, Postsecondary	4,892	4,977	85	1.7%	42	127	256	425	\$44.53
11-9039	Education Administrators, All Other	980	997	17	1.7%	8	26	51	85	\$42.28
11-9041	Architectural and Engineering Managers	6,340	6,481	141	2.2%	70	112	350	532	\$62.52
11-9051	Food Service Managers	12,597	12,816	219	1.7%	110	386	1,068	1,564	\$25.23
11-9061	Funeral Service Managers	1,224	1,227	3	0.2%	2	31	62	95	\$41.04
11-9081	Lodging Managers	1,733	1,797	64	3.7%	32	56	126	214	\$18.95
11-9111	Medical and Health Services Managers	15,591	16,063	472	3.0%	236	388	866	1,490	\$44.08
11-9121	Natural Sciences Managers	1,020	1,047	27	2.6%	14	22	70	106	\$58.57
11-9131	Postmasters and Mail Superintendents	472	455	-17	-3.6%	-8	12	24	28	\$37.36
11-9141	Property, Real Estate, and Community Association Managers	10,989	11,340	351	3.2%	176	416	444	1,036	\$24.30
11-9151	Social and Community Service Managers	5,372	5,547	175	3.3%	88	162	312	562	\$31.56
11-9161	Emergency Management Directors	330	338	8	2.4%	4	10	16	30	\$35.93
11-9199	Managers, All Other	31,736	32,509	773	2.4%	386	814	1,621	2,821	\$47.45
13-0000	Business and Financial Operations Occupations	302,774	308,514	5,740	1.9%	2,870	8,317	20,626	31,813	\$31.36
13-1020	Buyers and Purchasing Agents	18,738	18,737	-1	0.0%	0	590	1,363	1,953	\$30.12
13-1031	Claims Adjusters, Examiners, and Investigators	12,966	12,730	-236	-1.8%	-118	308	778	968	\$30.81
13-1032	Insurance Appraisers, Auto Damage	538	539	1	0.2%	0	13	32	45	\$27.35
13-1041	Compliance Officers	8,096	8,234	138	1.7%	69	228	488	785	\$30.67
13-1051	Cost Estimators	9,828	10,388	560	5.7%	280	256	742	1,278	\$30.15
13-1071	Human Resources Specialists	23,936	24,385	449	1.9%	224	645	1,778	2,647	\$27.95
13-1075	Labor Relations Specialists	5,440	5,279	-161	-3.0%	-80	143	394	457	\$27.29
13-1081	Logisticians	6,599	6,777	178	2.7%	89	156	480	725	\$34.84
13-1111	Management Analysts	24,270	25,099	829	3.4%	414	766	1,559	2,739	\$39.45
13-1121	Meeting, Convention, and Event Planners	3,435	3,543	108	3.1%	54	112	286	452	\$22.18
13-1131	Fundraisers	4,604	4,696	92	2.0%	46	153	330	529	\$26.01
13-1141	Compensation, Benefits, and Job Analysis Specialists	3,156	3,215	59	1.9%	30	105	198	333	\$28.76
13-1151	Training and Development Specialists	11,220	11,503	283	2.5%	142	338	880	1,360	\$27.17
13-1161	Market Research Analysts and Marketing Specialists	25,677	26,825	1,148	4.5%	574	618	2,065	3,257	\$29.18
13-1199	Business Operations Specialists, All Other	38,055	38,744	689	1.8%	344	1,042	2,644	4,030	\$33.81
13-2011	Accountants and Auditors	51,678	52,433	755	1.5%	378	1,468	3,383	5,229	\$31.58
13-2021	Appraisers and Assessors of Real Estate	2,306	2,369	63	2.7%	32	80	94	206	\$29.36
13-2031	Budget Analysts	998	1,015	17	1.7%	8	25	54	87	\$35.77
13-2041	Credit Analysts	2,904	2,963	59	2.0%	30	65	199	294	\$34.65
13-2051	Financial Analysts	9,661	9,860	199	2.1%	100	188	640	928	▲
13-2052	Personal Financial Advisors	8,156	8,404	248	3.0%	124	188	438	750	\$35.41
13-2053	Insurance Underwriters	5,503	5,328	-175	-3.2%	-88	126	324	362	\$32.91
13-2061	Financial Examiners	2,672	2,736	64	2.4%	32	57	147	236	\$32.28
13-2071	Credit Counselors	1,006	1,024	18	1.8%	9	24	60	93	\$22.97
13-2072	Loan Officers	11,635	11,902	267	2.3%	134	282	703	1,119	\$32.57
13-2081	Tax Examiners and Collectors, and Revenue Agents	1,358	1,352	-6	-0.4%	-3	53	60	110	\$30.72
13-2082	Tax Preparers	2,506	2,508	2	0.1%	1	124	162	287	\$18.00
13-2099	Financial Specialists, All Other	5,753	5,853	100	1.7%	50	162	340	552	▲
15-0000	Computer and Mathematical Occupations	157,811	162,745	4,934	3.1%	2,467	2,670	9,040	14,177	\$37.92
15-1111	Computer and Information Research Scientists	491	505	14	2.9%	7	7	31	45	\$53.56
15-1121	Computer Systems Analysts	30,815	31,655	840	2.7%	420	594	1,662	2,676	\$40.72
15-1122	Information Security Analysts	3,561	3,815	254	7.1%	127	53	210	390	\$44.59
15-1131	Computer Programmers	5,500	5,535	35	0.6%	18	88	298	404	\$37.02
15-1132	Software Developers, Applications	36,557	38,453	1,896	5.2%	948	520	2,120	3,588	▲
15-1133	Software Developers, Systems Software	5,624	5,754	130	2.3%	65	79	322	466	▲
15-1134	Web Developers	4,863	4,975	112	2.3%	56	84	290	430	\$33.07
15-1141	Database Administrators	3,752	3,819	67	1.8%	34	73	196	303	\$42.91
15-1142	Network and Computer Systems Administrators	12,280	12,439	159	1.3%	80	208	655	943	\$37.71
15-1143	Computer Network Architects	5,025	5,039	14	0.3%	7	67	284	358	\$48.33
15-1151	Computer User Support Specialists	21,406	21,980	574	2.7%	287	398	1,380	2,065	\$23.15
15-1152	Computer Network Support Specialists	8,608	8,726	118	1.4%	59	159	551	769	\$18.26
15-1199	Computer Occupations, All Other	12,772	13,158	386	3.0%	193	208	733	1,134	\$38.52
15-2011	Actuaries	1,678	1,744	66	3.9%	33	19	84	136	\$46.49
15-2031	Operations Research Analysts	3,868	4,082	214	5.5%	107	92	166	365	\$39.29
15-2041	Statisticians	913	964	51	5.6%	26	17	55	98	\$38.46
17-0000	Architecture and Engineering Occupations	100,389	102,889	2,500	2.5%	1,250	2,364	5,407	9,021	\$36.72
17-1011	Architects, Except Landscape and Naval	3,886	4,001	115	3.0%	58	94	208	360	\$39.51
17-1012	Landscape Architects	901	911	10	1.1%	5	22	48	75	\$30.28
17-1022	Surveyors	1,344	1,378	34	2.5%	17	34	65	116	\$27.98
17-2011	Aerospace Engineers	4,207	4,295	88	2.1%	44	90	184	318	\$55.27
17-2021	Agricultural Engineers	101	102	1	1.0%	0	2	5	7	\$40.53
17-2031	Biomedical Engineers	648	662	14	2.2%	7	14	33	54	\$38.47
17-2041	Chemical Engineers	1,728	1,791	63	3.6%	32	36	74	142	\$46.76

Ohio Short-Term Occupational* Employment Forecast
First Quarter 2019 to First Quarter 2021

SOC Code*	Occupational Title**	Employment		Change in Employment		Annual Openings				Median Wage*** May 2019
		2019 Employment	2021 Forecast	2019-2021	Percent	Change [1]	Exits [2]	Transfers [3]	Total	
17-2051	Civil Engineers	8,576	8,785	209	2.4%	104	177	498	779	\$38.20
17-2061	Computer Hardware Engineers	1,020	1,040	20	2.0%	10	20	54	84	\$49.34
17-2071	Electrical Engineers	6,854	7,029	175	2.6%	88	140	318	546	\$40.78
17-2072	Electronics Engineers, Except Computer	3,658	3,709	51	1.4%	26	74	169	269	\$46.26
17-2081	Environmental Engineers	927	951	24	2.6%	12	26	46	84	\$40.50
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	544	556	12	2.2%	6	11	26	43	\$44.43
17-2112	Industrial Engineers	15,987	16,579	592	3.7%	296	328	783	1,407	\$38.77
17-2131	Materials Engineers	2,038	2,084	46	2.3%	23	43	86	152	\$39.25
17-2141	Mechanical Engineers	15,842	16,302	460	2.9%	230	300	788	1,318	\$38.23
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers	163	169	6	3.7%	3	4	10	17	\$40.18
17-2171	Petroleum Engineers	334	338	4	1.2%	2	6	19	27	\$54.81
17-2199	Engineers, All Other	7,678	7,832	154	2.0%	77	160	376	613	\$43.64
17-3011	Architectural and Civil Drafters	2,733	2,792	59	2.2%	30	92	192	314	\$26.40
17-3012	Electrical and Electronics Drafters	854	879	25	2.9%	12	29	60	101	\$28.57
17-3013	Mechanical Drafters	2,287	2,283	-4	-0.2%	-2	76	160	234	\$26.92
17-3019	Drafters, All Other	1,004	1,035	31	3.1%	16	34	71	121	\$26.78
17-3021	Aerospace Engineering and Operations Technicians	998	1,015	17	1.7%	8	34	65	107	\$32.70
17-3022	Civil Engineering Technicians	1,899	1,935	36	1.9%	18	64	124	206	\$28.33
17-3023	Electrical and Electronics Engineering Technicians	2,950	2,974	24	0.8%	12	98	190	300	\$29.87
17-3024	Electro-Mechanical Technicians	376	390	14	3.7%	7	12	24	43	\$24.24
17-3025	Environmental Engineering Technicians	378	393	15	4.0%	8	12	25	45	\$24.06
17-3026	Industrial Engineering Technicians	3,133	3,203	70	2.2%	35	105	204	344	\$25.45
17-3027	Mechanical Engineering Technicians	2,499	2,556	57	2.3%	28	84	162	274	\$26.51
17-3029	Engineering Technicians, Except Drafters, All Other	2,665	2,725	60	2.3%	30	89	174	293	\$27.87
17-3031	Surveying and Mapping Technicians	1,466	1,505	39	2.7%	20	42	133	195	\$21.08
19-0000	Life, Physical, and Social Science Occupations	38,545	39,348	803	2.1%	402	763	3,004	4,169	\$30.36
19-1012	Food Scientists and Technologists	698	710	12	1.7%	6	14	64	84	\$35.68
19-1013	Soil and Plant Scientists	282	285	3	1.1%	2	6	26	34	\$26.74
19-1021	Biochemists and Biophysicists	325	328	3	0.9%	2	5	25	32	\$23.02
19-1022	Microbiologists	499	509	10	2.0%	5	8	38	51	\$29.82
19-1023	Zoologists and Wildlife Biologists	150	148	-2	-1.3%	-1	2	12	13	\$28.43
19-1029	Biological Scientists, All Other	812	827	15	1.8%	8	12	62	82	\$36.77
19-1031	Conservation Scientists	733	741	8	1.1%	4	14	62	80	\$26.63
19-1032	Foresters	193	196	3	1.6%	2	4	16	22	\$29.18
19-1041	Epidemiologists	275	276	1	0.4%	0	4	20	24	\$33.01
19-1042	Medical Scientists, Except Epidemiologists	3,489	3,579	90	2.6%	45	50	266	361	\$34.11
19-1099	Life Scientists, All Other	248	251	3	1.2%	2	4	18	24	\$31.75
19-2012	Physicists	444	466	22	5.0%	11	8	28	47	\$56.69
19-2031	Chemists	4,061	4,164	103	2.5%	52	67	303	422	\$33.75
19-2032	Materials Scientists	648	664	16	2.5%	8	10	48	66	\$49.50
19-2041	Environmental Scientists and Specialists, Including Health	2,042	2,069	27	1.3%	14	38	184	236	\$37.24
19-2042	Geoscientists, Except Hydrologists and Geographers	317	323	6	1.9%	3	6	28	37	\$36.63
19-2043	Hydrologists	249	248	-1	-0.4%	0	4	22	26	\$38.61
19-2099	Physical Scientists, All Other	610	619	9	1.5%	4	8	44	56	\$52.85
19-3011	Economists	149	153	4	2.7%	2	2	9	13	\$46.49
19-3022	Survey Researchers	140	146	6	4.3%	3	4	12	19	\$29.54
19-3031	Clinical, Counseling, and School Psychologists	5,425	5,571	146	2.7%	73	123	262	458	\$35.86
19-3039	Psychologists, All Other	493	502	9	1.8%	4	11	24	39	\$48.19
19-3051	Urban and Regional Planners	904	925	21	2.3%	10	14	70	94	\$33.97
19-3091	Anthropologists and Archeologists	118	122	4	3.4%	2	4	10	16	\$27.82
19-3099	Social Scientists and Related Workers, All Other	1,717	1,737	20	1.2%	10	54	144	208	\$37.19
19-4011	Agricultural and Food Science Technicians	486	493	7	1.4%	4	10	49	63	\$20.14
19-4021	Biological Technicians	4,145	4,230	85	2.1%	42	62	377	481	\$21.30
19-4031	Chemical Technicians	3,425	3,513	88	2.6%	44	66	280	390	\$23.08
19-4041	Geological and Petroleum Technicians	132	135	3	2.3%	2	2	12	16	\$24.98
19-4051	Nuclear Technicians	490	481	-9	-1.8%	-4	13	44	53	\$36.65
19-4061	Social Science Research Assistants	388	395	7	1.8%	4	10	36	50	\$21.34
19-4091	Environmental Science and Protection Technicians, Including Health	1,535	1,577	42	2.7%	21	42	142	205	\$21.52
19-4092	Forensic Science Technicians	431	438	7	1.6%	4	12	40	56	\$32.03
19-4093	Forest and Conservation Technicians	274	276	2	0.7%	1	8	25	34	\$19.66
19-4099	Life, Physical, and Social Science Technicians, All Other	1,780	1,809	29	1.6%	14	49	164	227	\$25.54
21-0000	Community and Social Service Occupations	103,476	105,783	2,307	2.2%	1,154	3,744	7,336	12,234	\$21.31
21-1012	Educational, Guidance, School, and Vocational Counselors	10,950	11,107	157	1.4%	78	357	771	1,206	\$25.81
21-1013	Marriage and Family Therapists	519	536	17	3.3%	8	17	37	62	\$22.90
21-1015	Rehabilitation Counselors	5,744	5,926	182	3.2%	91	189	408	688	\$16.33
21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	8,879	9,254	375	4.2%	188	294	634	1,116	\$21.94
21-1019	Counselors, All Other	1,112	1,141	29	2.6%	14	36	79	129	\$23.92
21-1021	Child, Family, and School Social Workers	10,607	10,864	257	2.4%	128	317	731	1,176	\$21.68
21-1022	Healthcare Social Workers	7,377	7,591	214	2.9%	107	221	510	838	\$26.77
21-1023	Mental Health and Substance Abuse Social Workers	6,312	6,543	231	3.7%	116	190	438	744	\$20.93
21-1029	Social Workers, All Other	3,075	3,141	66	2.1%	33	92	212	337	\$25.17
21-1091	Health Educators	2,175	2,222	47	2.2%	24	82	166	272	\$26.21
21-1092	Probation Officers and Correctional Treatment Specialists	3,132	3,148	16	0.5%	8	68	196	272	\$24.12
21-1093	Social and Human Service Assistants	15,734	16,190	456	2.9%	228	638	1,259	2,125	\$16.36
21-1094	Community Health Workers	1,955	1,999	44	2.3%	22	74	150	246	\$17.80
21-1099	Community and Social Service Specialists, All Other	2,694	2,746	52	1.9%	26	102	206	334	\$20.29
21-2011	Clergy	18,542	18,671	129	0.7%	64	814	1,201	2,079	\$22.08
21-2021	Directors, Religious Activities and Education	2,111	2,128	17	0.8%	8	104	158	270	\$22.68
21-2099	Religious Workers, All Other	2,558	2,576	18	0.7%	9	149	182	340	\$14.84
23-0000	Legal Occupations	38,351	38,240	-111	-0.3%	-56	977	1,555	2,476	\$33.09
23-1011	Lawyers	21,692	21,612	-80	-0.4%	-40	464	573	997	\$49.02
23-1012	Judicial Law Clerks	215	216	1	0.5%	0	3	6	9	\$26.07
23-1021	Administrative Law Judges, Adjudicators, and Hearing Officers	531	532	1	0.2%	0	12	14	26	\$31.64
23-1022	Arbitrators, Mediators, and Conciliators	221	223	2	0.9%	1	5	6	12	\$24.81
23-1023	Judges, Magistrate Judges, and Magistrates	2,486	2,485	-1	0.0%	0	54	66	120	\$40.01
23-2011	Paralegals and Legal Assistants	9,346	9,367	21	0.2%	10	312	678	1,000	\$21.25
23-2091	Court Reporters	450	452	2	0.4%	1	15	25	41	\$38.99 *
23-2093	Title Examiners, Abstractors, and Searchers	2,561	2,501	-60	-2.3%	-30	84	140	194	\$23.30
23-2099	Legal Support Workers, All Other	849	852	3	0.4%	2	28	47	77	\$25.21

Ohio Short-Term Occupational* Employment Forecast
First Quarter 2019 to First Quarter 2021

SOC Code *	Occupational Title**	Employment		Change in Employment		Annual Openings				Median Wage*** May 2019
		2019 Employment	2021 Forecast	2019-2021	Percent	Change [1]	Exits [2]	Transfers [3]	Total	
25-0000	Education, Training, and Library Occupations	333,542	335,616	2,074	0.6%	1,037	13,106	15,882	30,025	\$25.97
25-1011	Business Teachers, Postsecondary	3,831	3,964	133	3.5%	66	144	179	389	\$92,010 **
25-1021	Computer Science Teachers, Postsecondary	1,287	1,310	23	1.8%	12	48	60	120	\$88,070 **
25-1022	Mathematical Science Teachers, Postsecondary	1,880	1,912	32	1.7%	16	70	87	173	\$75,660 **
25-1031	Architecture Teachers, Postsecondary	279	285	6	2.2%	3	10	13	26	\$82,630 **
25-1032	Engineering Teachers, Postsecondary	1,505	1,542	37	2.5%	18	56	70	144	\$102,800 **
25-1042	Biological Science Teachers, Postsecondary	1,818	1,869	51	2.8%	26	68	84	178	\$80,260 **
25-1051	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	230	233	3	1.3%	2	8	10	20	\$87,410 **
25-1052	Chemistry Teachers, Postsecondary	835	851	16	1.9%	8	31	38	77	\$80,410 **
25-1054	Physics Teachers, Postsecondary	555	564	9	1.6%	4	20	26	50	\$84,820 **
25-1061	Anthropology and Archeology Teachers, Postsecondary	169	172	3	1.8%	2	6	8	16	\$86,450 **
25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary	242	246	4	1.7%	2	9	11	22	\$72,430 **
25-1063	Economics Teachers, Postsecondary	463	471	8	1.7%	4	17	22	43	\$103,800 **
25-1064	Geography Teachers, Postsecondary	220	222	2	0.9%	1	8	10	19	\$86,050 **
25-1065	Political Science Teachers, Postsecondary	520	528	8	1.5%	4	20	24	48	\$80,190 **
25-1066	Psychology Teachers, Postsecondary	1,400	1,438	38	2.7%	19	52	65	136	\$76,630 **
25-1067	Sociology Teachers, Postsecondary	611	623	12	2.0%	6	22	28	56	\$78,090 **
25-1069	Social Sciences Teachers, Postsecondary, All Other	221	224	3	1.4%	2	8	10	20	\$72,650 **
25-1071	Health Specialties Teachers, Postsecondary	10,237	10,728	491	4.8%	246	386	481	1,113	\$107,960 **
25-1072	Nursing Instructors and Teachers, Postsecondary	2,721	2,856	135	5.0%	68	102	128	298	\$73,730 **
25-1081	Education Teachers, Postsecondary	3,050	3,107	57	1.9%	28	114	141	283	\$63,740 **
25-1082	Library Science Teachers, Postsecondary	240	243	3	1.3%	2	9	11	22	\$65,220 **
25-1111	Criminal Justice and Law Enforcement Teachers, Postsecondary	520	535	15	2.9%	8	20	24	52	\$56,830 **
25-1112	Law Teachers, Postsecondary	718	732	14	1.9%	7	26	34	67	\$112,040 **
25-1113	Social Work Teachers, Postsecondary	574	584	10	1.7%	5	22	26	53	\$69,070 **
25-1121	Art, Drama, and Music Teachers, Postsecondary	4,068	4,163	95	2.3%	48	152	189	389	\$70,370 **
25-1122	Communications Teachers, Postsecondary	1,382	1,412	30	2.2%	15	52	64	131	\$67,520 **
25-1123	English Language and Literature Teachers, Postsecondary	2,680	2,729	49	1.8%	24	100	124	248	\$66,560 **
25-1124	Foreign Language and Literature Teachers, Postsecondary	1,033	1,053	20	1.9%	10	38	48	96	\$69,300 **
25-1125	History Teachers, Postsecondary	863	878	15	1.7%	8	32	40	80	\$74,010 **
25-1126	Philosophy and Religion Teachers, Postsecondary	1,013	1,036	23	2.3%	12	38	47	97	\$72,450 **
25-1192	Home Economics Teachers, Postsecondary	165	166	1	0.6%	0	6	8	14	\$76,480 ***
25-1193	Recreation and Fitness Studies Teachers, Postsecondary	533	542	9	1.7%	4	20	24	48	\$61,640 **
25-1194	Vocational Education Teachers, Postsecondary	3,299	3,351	52	1.6%	26	122	152	300	\$29.34
25-2011	Preschool Teachers, Except Special Education	16,093	16,437	344	2.1%	172	644	988	1,804	\$13.06
25-2012	Kindergarten Teachers, Except Special Education	2,859	2,845	-14	-0.5%	-7	113	174	280	\$57,460 **
25-2021	Elementary School Teachers, Except Special Education	51,413	51,090	-323	-0.6%	-162	1,594	2,186	3,618	\$64,470 **
25-2022	Middle School Teachers, Ex. Special and Career/Tech. Education	31,877	31,690	-187	-0.6%	-94	989	1,356	2,251	\$63,480 **
25-2023	Career/Technical Education Teachers, Middle School	137	136	-1	-0.7%	0	4	6	10	\$63,450 **
25-2031	Secondary School Teachers, Ex. Special and Career/Tech. Education	51,826	51,573	-253	-0.5%	-126	1,436	2,186	3,496	\$64,370 **
25-2032	Career/Technical Education Teachers, Secondary School	5,312	5,267	-45	-0.8%	-22	147	224	349	\$71,730 **
25-2051	Special Education Teachers, Preschool	1,107	1,119	12	1.1%	6	37	47	90	\$58,950 **
25-2052	Special Education Teachers, Kindergarten and Elementary School	7,110	7,067	-43	-0.6%	-22	234	298	510	\$56,670 **
25-2053	Special Education Teachers, Middle School	4,331	4,299	-32	-0.7%	-16	142	182	308	\$59,210
25-2054	Special Education Teachers, Secondary School	6,317	6,325	8	0.1%	4	209	266	479	\$56,720
25-2059	Special Education Teachers, All Other	1,438	1,487	49	3.4%	24	48	62	134	\$38,410 **
25-3011	Adult Basic and Secondary Education and Literacy Teachers and Instructors	1,421	1,408	-13	-0.9%	-6	82	80	156	\$23.42
25-3021	Self-Enrichment Education Teachers	12,368	12,766	398	3.2%	199	726	707	1,632	\$15.64
25-3097	Teachers and Instructors, All Other, Except Substitute Teachers	8,253	8,428	175	2.1%	88	482	469	1,039	\$39,860 **
25-3098	Substitute Teachers	16,758	16,962	204	1.2%	102	974	948	2,024	\$13.41
25-4011	Archivists	209	215	6	2.9%	3	10	14	27	\$23.74
25-4012	Curators	335	348	13	3.9%	6	16	22	44	\$23.78
25-4013	Museum Technicians and Conservators	325	337	12	3.7%	6	15	21	42	\$19.72
25-4021	Librarians	3,803	3,819	16	0.4%	8	204	174	386	\$24.25
25-4031	Library Technicians	3,763	3,724	-39	-1.0%	-20	334	241	555	\$14.48
25-9031	Instructional Coordinators	4,462	4,482	20	0.4%	10	186	230	426	\$32.00
25-9041	Teacher Assistants	41,442	41,645	203	0.5%	102	2,204	2,172	4,478	\$27,070
25-9099	Education, Training, and Library Workers, All Other	2,779	2,832	53	1.9%	26	117	144	287	\$17.25
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	88,704	89,327	623	0.7%	312	3,687	6,258	10,257	\$20.88
27-1011	Art Directors	2,620	2,597	-23	-0.9%	-12	134	150	272	\$38.46
27-1012	Craft Artists	291	304	13	4.5%	6	15	17	38	\$17.09
27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	1,495	1,552	57	3.8%	28	78	88	194	\$21.96
27-1014	Multimedia Artists and Animators	1,277	1,247	-30	-2.3%	-15	64	72	121	\$25.16
27-1021	Commercial and Industrial Designers	1,234	1,249	15	1.2%	8	40	84	132	\$30.75
27-1023	Floral Designers	2,082	2,108	26	1.2%	13	68	141	222	\$11.50
27-1024	Graphic Designers	9,050	9,113	63	0.7%	32	295	611	938	\$23.25
27-1025	Interior Designers	2,802	2,886	84	3.0%	42	92	192	326	\$26.06
27-1026	Merchandise Displayers and Window Trimmers	6,478	6,492	14	0.2%	7	210	436	653	\$15.48
27-1027	Set and Exhibit Designers	471	485	14	3.0%	7	16	32	55	\$23.11
27-1029	Designers, All Other	154	152	-2	-1.3%	-1	5	10	14	\$24.44
27-2011	Actors	885	897	12	1.4%	6	34	72	112	\$13.90
27-2012	Producers and Directors	2,216	2,201	-15	-0.7%	-8	48	168	208	\$25.10
27-2021	Athletes and Sports Competitors	152	154	2	1.3%	1	8	14	23	\$94,300 **
27-2022	Coaches and Scouts	13,263	13,651	388	2.9%	194	760	1,204	2,158	\$24,630 **
27-2023	Umpires, Referees, and Other Sports Officials	449	487	38	8.5%	19	26	42	87	\$24,500 **
27-2031	Dancers	241	243	2	0.8%	1	15	27	43	\$24.33 +
27-2032	Choreographers	115	115	0	0.0%	0	7	13	20	\$19.89
27-2041	Music Directors and Composers	2,369	2,366	-3	-0.1%	-2	136	146	280	\$20.72
27-2042	Musicians and Singers	6,697	6,674	-23	-0.3%	-12	383	414	785	\$26.72
27-2099	Entertainers and Performers, Sports and Related Workers, All Other	608	635	27	4.4%	14	27	44	85	\$19.33
27-3011	Radio and Television Announcers	1,475	1,414	-61	-4.1%	-30	60	108	138	\$16.05
27-3012	Public Address System and Other Announcers	242	246	4	1.7%	2	10	18	30	\$18.91
27-3021	Broadcast News Analysts	131	129	-2	-1.5%	-1	4	12	15	▲
27-3022	Reporters and Correspondents	1,196	1,008	-188	-15.7%	-94	38	97	41	▲
27-3031	Public Relations Specialists	7,360	7,427	67	0.9%	34	218	550	802	\$28.45
27-3041	Editors	2,289	2,092	-197	-8.6%	-98	66	172	140	\$25.99
27-3042	Technical Writers	1,913	1,900	-13	-0.7%	-6	60	126	180	\$30.21
27-3043	Writers and Authors	3,482	3,390	-92	-2.6%	-46	146	212	312	\$24.42
27-3091	Interpreters and Translators	2,354	2,487	133	5.6%	66	108	136	310	\$24.41

Ohio Short-Term Occupational* Employment Forecast
First Quarter 2019 to First Quarter 2021

SOC Code *	Occupational Title**	Employment		Change in Employment		Annual Openings				Median Wage*** May 2019
		2019 Employment	2021 Forecast	2019-2021	Percent	Change [1]	Exits [2]	Transfers [3]	Total	
27-3099	Media and Communication Workers, All Other	2,663	2,765	102	3.8%	51	120	152	323	\$18.91
27-4011	Audio and Video Equipment Technicians	1,729	1,749	20	1.2%	10	58	128	196	\$19.40
27-4012	Broadcast Technicians	718	702	-16	-2.2%	-8	24	52	68	\$20.84
27-4014	Sound Engineering Technicians	184	193	9	4.9%	4	6	14	24	\$24.54
27-4021	Photographers	5,295	5,439	144	2.7%	72	206	326	604	\$15.60
27-4031	Camera Operators, Television, Video, and Motion Picture	569	583	14	2.5%	7	15	41	63	\$24.95
27-4032	Film and Video Editors	499	517	18	3.6%	9	14	36	59	\$26.91
27-4099	Media and Communication Equipment Workers, All Other	303	307	4	1.3%	2	10	22	34	\$32.22
29-0000	Healthcare Practitioners and Technical Occupations	374,072	382,818	8,746	2.3%	4,373	9,934	11,446	25,753	\$29.83
29-1011	Chiropractors	2,002	2,039	37	1.8%	18	36	18	72	\$39.19
29-1021	Dentists, General	3,959	3,979	20	0.5%	10	86	34	130	\$88.94
29-1023	Orthodontists	261	263	2	0.8%	1	6	2	9	▲
29-1029	Dentists, All Other Specialists	122	125	3	2.5%	2	2	1	5	\$60.51
29-1031	Dietitians and Nutritionists	2,513	2,573	60	2.4%	30	82	77	189	\$27.99
29-1041	Optometrists	1,364	1,386	22	1.6%	11	26	15	52	\$55.41
29-1051	Pharmacists	12,439	12,381	-58	-0.5%	-29	293	265	529	\$58.81
29-1061	Anesthesiologists	1,468	1,493	25	1.7%	12	24	19	55	▲
29-1062	Family and General Practitioners	4,064	4,195	131	3.2%	66	68	53	187	\$86.64
29-1063	Internists, General	2,280	2,312	32	1.4%	16	38	30	84	\$91.19
29-1064	Obstetricians and Gynecologists	1,095	1,112	17	1.6%	8	18	14	40	▲
29-1065	Pediatricians, General	2,251	2,285	34	1.5%	17	37	29	83	\$75.47
29-1066	Psychiatrists	1,353	1,405	52	3.8%	26	22	18	66	▲
29-1067	Surgeons	2,231	2,264	33	1.5%	16	37	29	82	▲
29-1069	Physicians and Surgeons, All Other	18,554	19,000	446	2.4%	223	308	240	771	▲
29-1071	Physician Assistants	4,538	4,836	298	6.6%	149	72	194	415	\$52.09
29-1081	Podiatrists	463	470	7	1.5%	4	10	16	30	\$66.69
29-1122	Occupational Therapists	4,905	5,066	161	3.3%	80	112	169	361	\$40.54
29-1123	Physical Therapists	8,078	8,371	293	3.6%	146	150	192	488	\$42.19
29-1124	Radiation Therapists	555	567	12	2.2%	6	8	18	32	\$39.17
29-1125	Recreational Therapists	686	695	9	1.3%	4	14	19	37	\$21.76
29-1126	Respiratory Therapists	6,314	6,601	287	4.5%	144	178	164	486	\$27.69
29-1127	Speech-Language Pathologists	5,657	5,918	261	4.6%	130	114	196	440	\$35.71
29-1128	Exercise Physiologists	500	497	-3	-0.6%	-2	12	16	26	\$23.33
29-1129	Therapists, All Other	1,025	1,031	6	0.6%	3	24	32	59	\$34.95
29-1131	Veterinarians	3,349	3,593	244	7.3%	122	66	68	256	\$46.65
29-1141	Registered Nurses	127,968	131,345	3,377	2.6%	1,688	3,598	3,326	8,612	\$31.63
29-1151	Nurse Anesthetists	2,573	2,687	114	4.4%	57	42	89	188	\$80.80
29-1161	Nurse Midwives	205	211	6	2.9%	3	4	7	14	\$46.98
29-1171	Nurse Practitioners	7,783	8,250	467	6.0%	234	158	270	662	\$49.75
29-1181	Audiologists	537	555	18	3.4%	9	10	12	31	\$33.75
29-1199	Health Diagnosing and Treating Practitioners, All Other	1,155	1,178	23	2.0%	12	33	21	66	\$39.17
29-2010	Clinical Laboratory Technologists and Technicians	10,723	10,923	200	1.9%	100	298	384	782	\$25.50
29-2021	Dental Hygienists	8,978	9,078	100	1.1%	50	377	228	655	\$33.03
29-2031	Cardiovascular Technologists and Technicians	2,052	2,101	49	2.4%	24	51	62	137	\$25.98
29-2032	Diagnostic Medical Sonographers	2,750	2,866	116	4.2%	58	69	85	212	\$31.75
29-2033	Nuclear Medicine Technologists	800	817	17	2.1%	8	20	24	52	\$34.97
29-2034	Radiologic Technologists	8,178	8,380	202	2.5%	101	204	250	555	\$27.95
29-2035	Magnetic Resonance Imaging Technologists	1,308	1,338	30	2.3%	15	32	40	87	\$32.13
29-2041	Emergency Medical Technicians and Paramedics	9,810	9,600	-210	-2.1%	-105	173	472	540	\$15.57
29-2051	Dietetic Technicians	1,329	1,342	13	1.0%	6	38	69	113	\$12.72
29-2052	Pharmacy Technicians	15,977	16,060	83	0.5%	42	463	828	1,333	\$14.52
29-2053	Psychiatric Technicians	1,729	1,797	68	3.9%	34	51	91	176	\$15.26
29-2054	Respiratory Therapy Technicians	209	192	-17	-8.1%	-8	6	10	8	▲
29-2055	Surgical Technologists	3,744	3,838	94	2.5%	47	110	196	353	\$22.55
29-2056	Veterinary Technologists and Technicians	3,704	3,984	280	7.6%	140	111	199	450	\$16.40
29-2057	Ophthalmic Medical Technicians	2,252	2,337	85	3.8%	42	66	118	226	\$17.98
29-2061	Licensed Practical and Licensed Vocational Nurses	41,007	41,472	465	1.1%	232	1,400	1,742	3,374	\$21.62
29-2071	Medical Records and Health Information Technicians	9,907	10,195	288	2.9%	144	296	344	784	▲
29-2081	Opticians, Dispensing	3,208	3,223	15	0.5%	8	126	127	261	\$20.29
29-2091	Orthotists and Prosthetists	461	482	21	4.6%	10	13	19	42	\$29.94
29-2092	Hearing Aid Specialists	188	192	4	2.1%	2	5	8	15	\$22.17
29-2099	Health Technologists and Technicians, All Other	5,586	5,764	178	3.2%	89	154	230	473	▲
29-9011	Occupational Health and Safety Specialists	4,562	4,684	122	2.7%	61	106	154	321	\$35.40
29-9012	Occupational Health and Safety Technicians	941	977	36	3.8%	18	22	32	72	\$24.87
29-9091	Athletic Trainers	1,290	1,332	42	3.3%	21	30	44	95	\$47.660 **
29-9092	Genetic Counselors	140	146	6	4.3%	3	4	5	12	\$37.77
29-9099	Healthcare Practitioners and Technical Workers, All Other	858	880	22	2.6%	11	20	29	60	\$31.29
31-0000	Healthcare Support Occupations	192,831	197,821	4,990	2.6%	2,495	9,853	12,254	24,602	\$12.85
31-1011	Home Health Aides	56,334	58,383	2,049	3.6%	1,024	3,084	3,344	7,452	\$11.08
31-1013	Psychiatric Aides	1,162	1,212	50	4.3%	25	64	69	158	\$17.24
31-1014	Nursing Assistants	66,981	67,374	393	0.6%	196	3,612	3,917	7,725	\$13.61
31-1015	Orderlies	2,261	2,317	56	2.5%	28	123	134	285	\$13.69
31-2011	Occupational Therapy Assistants	3,728	3,950	222	6.0%	111	166	250	527	\$28.71
31-2012	Occupational Therapy Aides	192	196	4	2.1%	2	8	12	22	\$15.36
31-2021	Physical Therapist Assistants	6,178	6,464	286	4.6%	143	272	512	927	\$28.32
31-2022	Physical Therapist Aides	723	750	27	3.7%	14	32	60	106	\$13.19
31-9011	Massage Therapists	3,154	3,331	177	5.6%	88	203	175	466	\$19.43
31-9091	Dental Assistants	10,537	10,661	124	1.2%	62	490	696	1,248	\$18.66
31-9092	Medical Assistants	24,327	25,542	1,215	5.0%	608	974	1,773	3,355	\$15.87
31-9093	Medical Equipment Preparers	1,903	1,949	46	2.4%	23	95	124	242	\$17.16
31-9094	Medical Transcriptionists	1,852	1,828	-24	-1.3%	-12	112	145	245	\$18.18
31-9095	Pharmacy Aides	704	688	-16	-2.3%	-8	34	55	81	\$12.00
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	2,925	3,129	204	7.0%	102	164	324	590	\$12.49
31-9097	Phlebotomists	5,711	5,838	127	2.2%	64	216	396	676	\$16.52
31-9099	Healthcare Support Workers, All Other	4,159	4,209	50	1.2%	25	206	270	501	\$20.29
33-0000	Protective Service Occupations	117,259	118,381	1,122	1.0%	561	5,288	7,326	13,175	\$20.54
33-1011	FL Supervisors of Correctional Officers	590	583	-7	-1.2%	-4	18	22	36	\$33.30
33-1012	FL Supervisors of Police and Detectives	2,746	2,769	23	0.8%	12	67	104	183	\$40.26
33-1021	FL Supervisors of Fire Fighting and Prevention Workers	2,519	2,546	27	1.1%	14	62	98	174	\$36.76

Ohio Short-Term Occupational* Employment Forecast
First Quarter 2019 to First Quarter 2021

SOC Code *	Occupational Title**	Employment		Change in Employment		Annual Openings				Median Wage*** May 2019
		2019 Employment	2021 Forecast	2019-2021	Percent	Change [1]	Exits [2]	Transfers [3]	Total	
33-1099	FL Supervisors of Protective Service Workers, All Other	2,599	2,643	44	1.7%	22	94	155	271	\$18.78
33-2011	Firefighters	18,658	18,863	205	1.1%	102	338	939	1,379	\$23.05
33-2021	Fire Inspectors and Investigators	331	335	4	1.2%	2	14	17	33	\$28.42
33-3011	Bailiffs	1,363	1,363	0	0.0%	0	52	68	120	\$22.70
33-3012	Correctional Officers and Jailers	13,437	13,156	-281	-2.1%	-140	506	666	1,032	\$22.96
33-3021	Detectives and Criminal Investigators	1,957	1,964	7	0.4%	4	42	84	130	\$34.74
33-3041	Parking Enforcement Workers	148	137	-11	-7.4%	-6	4	7	5	\$19.32
33-3051	Police and Sheriff's Patrol Officers	24,286	24,493	207	0.9%	104	586	1,125	1,815	\$30.19
33-9011	Animal Control Workers	324	328	4	1.2%	2	14	17	33	\$17.71
33-9021	Private Detectives and Investigators	1,330	1,353	23	1.7%	12	45	72	129	\$22.93
33-9031	Gaming Surveillance Officers and Gaming Investigators	283	284	1	0.4%	0	14	22	36	\$28.93
33-9032	Security Guards	32,411	32,983	572	1.8%	286	1,668	2,540	4,494	\$13.75
33-9091	Crossing Guards	2,031	2,072	41	2.0%	20	242	94	356	\$12.62
33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	6,574	6,830	256	3.9%	128	882	736	1,746	\$9.49
33-9093	Transportation Security Screeners	799	814	15	1.9%	8	34	42	84	\$19.64
33-9099	Protective Service Workers, All Other	4,560	4,551	-9	-0.2%	-4	600	500	1,096	\$13.99
35-0000	Food Preparation and Serving Related Occupations	494,222	502,063	7,841	1.6%	3,920	34,910	51,428	90,258	\$9.93
35-1011	Chefs and Head Cooks	4,499	4,647	148	3.3%	74	138	460	672	\$21.19
35-1012	FL Supervisors of Food Preparation and Serving Workers	38,748	39,342	594	1.5%	297	1,701	4,260	6,258	\$14.72
35-2011	Cooks, Fast Food	16,262	15,894	-368	-2.3%	-184	854	1,421	2,091	\$10.14
35-2012	Cooks, Institution and Cafeteria	19,001	19,175	174	0.9%	87	1,013	1,687	2,787	\$13.08
35-2013	Cooks, Private Household	442	443	1	0.2%	0	24	39	63	\$18.21 *
35-2014	Cooks, Restaurant	36,076	37,414	1,338	3.7%	669	1,950	3,248	5,867	\$12.04
35-2015	Cooks, Short Order	9,248	9,095	-153	-1.7%	-76	487	810	1,221	\$9.99
35-2019	Cooks, All Other	144	145	1	0.7%	0	8	13	21	\$9.68
35-2021	Food Preparation Workers	26,931	27,270	339	1.3%	170	1,986	2,701	4,857	\$10.81
35-3011	Bartenders	23,101	22,980	-121	-0.5%	-60	1,077	2,976	3,993	\$9.45
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	155,652	159,848	4,196	2.7%	2,098	12,578	15,513	30,189	▲
35-3022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	16,038	16,138	100	0.6%	50	1,812	1,680	3,542	▲
35-3031	Waiters and Waitresses	91,871	92,707	836	0.9%	418	6,405	11,309	18,132	\$9.59
35-3041	Food Servers, Nonrestaurant	13,854	14,090	236	1.7%	118	1,028	1,154	2,300	\$10.37
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	11,131	11,367	236	2.1%	118	927	995	2,040	\$9.57
35-9021	Dishwashers	14,609	14,651	42	0.3%	21	1,089	1,233	2,343	\$10.00
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	15,427	15,654	227	1.5%	114	1,736	1,824	3,674	\$9.51
35-9099	Food Preparation and Serving Related Workers, All Other	1,188	1,203	15	1.3%	8	98	106	212	\$9.51
37-0000	Building and Grounds Cleaning and Maintenance Occupations	180,466	180,924	458	0.3%	229	10,182	13,378	23,789	\$12.78
37-1011	FL Supervisors of Housekeeping and Janitorial Workers	6,575	6,613	38	0.6%	19	277	471	767	\$20.00
37-1012	FL Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	6,116	6,143	27	0.4%	14	211	456	681	\$22.86
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	83,555	83,412	-143	-0.2%	-72	5,105	5,889	10,922	\$12.52
37-2012	Maids and Housekeeping Cleaners	38,029	38,360	331	0.9%	166	2,703	2,440	5,309	\$10.85
37-3011	Landscaping and Groundskeeping Workers	42,154	42,420	266	0.6%	133	1,732	3,744	5,609	\$14.07
37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	896	894	-2	-0.2%	-1	36	79	114	\$16.37
37-3013	Tree Trimmers and Pruners	1,048	1,036	-12	-1.1%	-6	42	92	128	\$19.50
37-3019	Grounds Maintenance Workers, All Other	147	147	0	0.0%	0	6	13	19	\$13.28
39-0000	Personal Care and Service Occupations	188,203	194,837	6,634	3.5%	3,317	13,308	15,044	31,669	\$11.20
39-1010	FL Supervisors of Gaming Workers	600	620	20	3.3%	10	28	70	108	\$25.22
39-1021	FL Supervisors of Personal Service Workers	8,847	9,152	305	3.4%	152	361	510	1,023	\$16.84
39-2011	Animal Trainers	661	679	18	2.7%	9	38	60	107	\$12.58
39-2021	Nonfarm Animal Caretakers	9,631	10,360	729	7.6%	364	694	924	1,982	\$10.79
39-3011	Gaming Dealers	1,137	1,157	20	1.8%	10	70	108	188	\$9.59
39-3019	Gaming Service Workers, All Other	126	127	1	0.8%	0	8	12	20	\$11.35
39-3021	Motion Picture Projectionists	225	224	-1	-0.4%	0	21	22	43	\$11.90
39-3031	Ushers, Lobby Attendants, and Ticket Takers	2,936	3,032	96	3.3%	48	390	336	774	\$9.43
39-3091	Amusement and Recreation Attendants	8,653	9,561	908	10.5%	454	968	1,129	2,551	\$9.47
39-3093	Locker Room, Coatroom, and Dressing Room Attendants	581	633	52	9.0%	26	64	75	165	\$10.03
39-4011	Embalmers	201	199	-2	-1.0%	-1	19	14	32	\$25.26
39-4021	Funeral Attendants	2,443	2,442	-1	0.0%	0	229	162	391	\$13.30
39-4031	Morticians, Undertakers, and Funeral Directors	1,458	1,455	-3	-0.2%	-2	74	100	172	\$26.57
39-5012	Hairdressers, Hairstylists, and Cosmetologists	30,002	30,081	79	0.3%	40	1,823	1,919	3,782	\$10.70
39-5092	Manicurists and Pedicurists	3,051	3,076	25	0.8%	12	170	180	362	\$10.75
39-5093	Shampooers	300	302	2	0.7%	1	16	18	35	\$9.65
39-5094	Skincare Specialists	1,419	1,446	27	1.9%	14	80	84	178	\$16.43
39-6011	Baggage Porters and Bellhops	624	649	25	4.0%	12	33	58	103	\$10.12
39-6012	Concierges	450	462	12	2.7%	6	24	42	72	\$13.62
39-7010	Tour and Travel Guides	1,094	1,135	41	3.7%	20	86	109	215	\$10.77
39-9011	Childcare Workers	36,037	36,395	358	1.0%	179	2,678	2,726	5,583	\$10.65
39-9021	Personal Care Aides	46,864	49,611	2,747	5.9%	1,374	3,564	3,159	8,097	\$11.08
39-9031	Fitness Trainers and Aerobics Instructors	9,651	10,386	735	7.6%	368	598	1,066	2,032	\$14.73
39-9032	Recreation Workers	14,559	14,863	304	2.1%	152	877	1,566	2,595	\$11.38
39-9041	Residential Advisors	3,292	3,389	97	2.9%	48	184	324	556	\$13.47
39-9099	Personal Care and Service Workers, All Other	2,192	2,223	31	1.4%	16	138	185	339	\$10.93
41-0000	Sales and Related Occupations	538,559	538,040	-519	-0.1%	-260	28,604	45,780	74,124	\$13.61
41-1011	FL Supervisors of Retail Sales Workers	51,813	51,198	-615	-1.2%	-308	1,780	3,882	5,354	\$18.52
41-1012	FL Supervisors of Non-Retail Sales Workers	13,643	13,706	63	0.5%	32	442	864	1,338	\$34.72
41-2011	Cashiers	118,060	116,443	-1,617	-1.4%	-808	10,464	11,654	21,310	\$10.29
41-2012	Gaming Change Persons and Booth Cashiers	300	304	4	1.3%	2	27	30	59	\$11.80
41-2021	Counter and Rental Clerks	12,444	12,885	441	3.5%	220	641	984	1,845	\$12.59
41-2022	Parts Salespersons	10,472	10,667	195	1.9%	98	432	840	1,370	\$14.27
41-2031	Retail Salespersons	149,232	147,706	-1,526	-1.0%	-763	8,532	13,154	20,923	\$11.36
41-3011	Advertising Sales Agents	4,170	3,905	-265	-6.4%	-132	128	420	416	\$21.50
41-3021	Insurance Sales Agents	18,813	19,126	313	1.7%	156	698	1,145	1,999	\$24.86
41-3031	Securities, Commodities, and Financial Services Sales Agents	14,253	14,564	311	2.2%	156	372	992	1,520	\$26.22
41-3041	Travel Agents	1,463	1,461	-2	-0.1%	-1	85	109	193	\$17.63
41-3099	Sales Representatives, Services, All Other	35,363	36,105	742	2.1%	371	1,055	3,470	4,896	\$25.02
41-4011	Sales Rep., Wholesale & Mfg. Tech./Sci. Prod.	14,958	15,287	329	2.2%	164	460	1,126	1,750	\$38.21
41-4012	Sales Rep., Wholesale/Mfg. ex. Tech./Sci. Prod.	55,349	56,630	1,281	2.3%	640	1,703	4,170	6,513	\$27.95
41-9011	Demonstrators and Product Promoters	1,060	1,097	37	3.5%	18	109	76	203	\$14.46
41-9021	Real Estate Brokers	1,717	1,775	58	3.4%	29	79	87	195	\$25.75
41-9022	Real Estate Sales Agents	14,244	14,726	482	3.4%	241	654	722	1,617	\$18.22

Ohio Short-Term Occupational* Employment Forecast
First Quarter 2019 to First Quarter 2021

SOC Code*	Occupational Title**	Employment		Change in Employment		Annual Openings				Median Wage*** May 2019
		2019 Employment	2021 Forecast	2019-2021	Percent	Change [1]	Exits [2]	Transfers [3]	Total	
41-9031	Sales Engineers	3,028	3,081	53	1.8%	26	72	266	364	\$41.73
41-9041	Telemarketers	13,521	12,807	-714	-5.3%	-357	634	1,434	1,711	\$11.69
41-9091	Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	1,531	1,460	-71	-4.6%	-36	99	84	147	\$12.54
41-9099	Sales and Related Workers, All Other	3,079	3,061	-18	-0.6%	-9	132	268	391	\$14.03
43-0000	Office and Administrative Support Occupations	832,582	835,040	2,458	0.3%	1,229	40,342	57,137	98,708	\$17.62
43-1011	FL Supervisors of Office and Administrative Support Workers	48,469	48,691	222	0.5%	111	1,822	3,268	5,201	\$26.43
43-2011	Switchboard Operators, Including Answering Service	3,260	3,130	-130	-4.0%	-65	184	212	331	\$13.89
43-3011	Bill and Account Collectors	11,796	11,567	-229	-1.9%	-114	454	940	1,280	\$16.95
43-3021	Billing and Posting Clerks	21,910	22,412	502	2.3%	251	912	1,494	2,657	\$17.89
43-3031	Bookkeeping, Accounting, and Auditing Clerks	59,536	59,630	94	0.2%	47	3,625	3,317	6,989	\$18.75
43-3041	Gaming Cage Workers	365	371	6	1.6%	3	18	32	53	\$13.07
43-3051	Payroll and Timekeeping Clerks	5,857	5,847	-10	-0.2%	-5	276	368	639	\$21.38
43-3061	Procurement Clerks	3,478	3,504	26	0.7%	13	120	243	376	\$20.36
43-3071	Tellers	18,571	18,373	-198	-1.1%	-99	906	1,321	2,128	\$14.40
43-3099	Financial Clerks, All Other	1,843	1,878	35	1.9%	18	62	140	220	\$20.06
43-4011	Brokerage Clerks	2,471	2,535	64	2.6%	32	118	140	290	\$23.79
43-4021	Correspondence Clerks	232	230	-2	-0.9%	-1	10	17	26	\$17.40
43-4031	Court, Municipal, and License Clerks	9,240	9,347	107	1.2%	54	420	441	915	\$17.93
43-4041	Credit Authorizers, Checkers, and Clerks	1,202	1,212	10	0.8%	5	38	82	125	\$17.29
43-4051	Customer Service Representatives	100,825	100,916	91	0.1%	46	4,844	8,599	13,489	\$16.70
43-4061	Eligibility Interviewers, Government Programs	4,658	4,706	48	1.0%	24	180	264	468	\$20.92
43-4071	File Clerks	3,816	3,723	-93	-2.4%	-46	218	248	420	\$16.72
43-4081	Hotel, Motel, and Resort Desk Clerks	6,054	6,187	133	2.2%	66	336	701	1,103	\$10.64
43-4111	Interviewers, Except Eligibility and Loan	8,093	8,263	170	2.1%	85	416	592	1,093	\$15.11
43-4121	Library Assistants, Clerical	4,960	4,908	-52	-1.0%	-26	392	352	718	\$12.07
43-4131	Loan Interviewers and Clerks	11,063	11,319	256	2.3%	128	418	717	1,263	\$19.10
43-4141	New Accounts Clerks	1,539	1,542	3	0.2%	2	64	114	180	\$16.46
43-4151	Order Clerks	8,487	8,560	73	0.9%	36	358	625	1,019	\$15.51
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	4,863	4,829	-34	-0.7%	-17	177	372	532	\$18.80
43-4171	Receptionists and Information Clerks	34,038	34,784	746	2.2%	373	2,003	2,620	4,996	\$13.36
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	1,818	1,855	37	2.0%	18	76	132	226	\$20.07
43-4199	Information and Record Clerks, All Other	3,588	3,656	68	1.9%	34	176	243	453	\$20.69
43-5011	Cargo and Freight Agents	3,515	3,689	174	5.0%	87	128	213	428	\$19.93
43-5021	Couriers and Messengers	2,459	2,503	44	1.8%	22	98	138	258	\$13.80
43-5031	Police, Fire, and Ambulance Dispatchers	4,081	4,107	26	0.6%	13	144	244	401	\$22.30
43-5032	Dispatchers, Except Police, Fire, and Ambulance	7,300	7,445	145	2.0%	72	259	438	769	\$19.70
43-5041	Meter Readers, Utilities	1,693	1,609	-84	-5.0%	-42	70	92	120	\$19.52
43-5051	Postal Service Clerks	2,550	2,510	-40	-1.6%	-20	105	88	173	\$23.16
43-5052	Postal Service Mail Carriers	13,098	12,896	-202	-1.5%	-101	474	491	864	\$23.31
43-5053	Postal Service Mail Sorters, Processors, and Processing Machine Operators	3,711	3,616	-95	-2.6%	-48	168	135	255	\$24.12
43-5061	Production, Planning, and Expediting Clerks	18,525	18,977	452	2.4%	226	621	1,332	2,179	\$22.92
43-5071	Shipping, Receiving, and Traffic Clerks	39,118	39,873	755	1.9%	378	1,320	2,601	4,299	\$16.27
43-5081	Stock Clerks and Order Fillers	77,105	77,041	-64	-0.1%	-32	3,900	6,358	10,226	\$12.57
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	2,078	2,151	73	3.5%	36	96	144	276	\$17.15
43-6011	Executive Secretaries and Executive Administrative Assistants	16,763	16,180	-583	-3.5%	-292	844	1,000	1,552	\$27.59
43-6012	Legal Secretaries	4,797	4,485	-312	-6.5%	-156	238	282	364	\$20.83
43-6013	Medical Secretaries	32,616	33,711	1,095	3.4%	548	1,700	2,012	4,260	\$16.72
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	71,908	71,055	-853	-1.2%	-426	3,664	4,338	7,576	\$17.42
43-9011	Computer Operators	1,102	1,052	-50	-4.5%	-25	52	79	106	\$38.52
43-9021	Data Entry Keyers	6,369	6,080	-289	-4.5%	-144	280	438	574	\$15.60
43-9022	Word Processors and Typists	1,442	1,336	-106	-7.4%	-53	84	86	117	\$18.71
43-9041	Insurance Claims and Policy Processing Clerks	15,268	15,170	-98	-0.6%	-49	562	951	1,464	\$18.27
43-9051	Mail Clerks and Mail Machine Operators, Except Postal Service	3,864	3,704	-160	-4.1%	-80	182	237	339	\$15.42
43-9061	Office Clerks, General	110,328	110,885	557	0.5%	278	6,183	7,056	13,517	\$16.49
43-9071	Office Machine Operators, Except Computer	2,943	2,891	-52	-1.8%	-26	175	196	345	\$15.64
43-9111	Statistical Assistants	668	679	11	1.6%	6	28	56	90	\$21.94
43-9199	Office and Administrative Support Workers, All Other	4,808	4,903	95	2.0%	48	204	360	612	\$18.66
45-0000	Farming, Fishing, and Forestry Occupations	14,863	14,932	69	0.5%	34	590	1,812	2,436	\$14.57
45-1011	FL Supervisors of Farming, Fishing, and Forestry Workers	793	797	4	0.5%	2	29	88	119	\$27.91
45-2011	Agricultural Inspectors	311	310	-1	-0.3%	0	13	32	45	\$24.45
45-2041	Graders and Sorters, Agricultural Products	709	713	4	0.6%	2	28	76	106	\$11.98
45-2091	Agricultural Equipment Operators	1,434	1,462	28	2.0%	14	58	179	251	\$18.63
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	9,343	9,389	46	0.5%	23	372	1,158	1,553	\$11.59
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	1,379	1,373	-6	-0.4%	-3	54	170	221	\$13.57
45-4022	Logging Equipment Operators	315	311	-4	-1.3%	-2	12	38	48	\$17.75
47-0000	Construction and Extraction Occupations	205,958	218,688	12,730	6.2%	6,365	6,835	16,671	29,871	\$23.67
47-1011	FL Supervisors of Construction Trades and Extraction Workers	15,234	16,166	932	6.1%	466	468	1,164	2,098	\$31.91
47-2011	Boilermakers	678	704	26	3.8%	13	18	51	82	\$35.94
47-2021	Brickmasons and Blockmasons	3,952	4,408	456	11.5%	228	120	298	646	\$26.53
47-2022	Stonemasons	216	228	12	5.6%	6	6	16	28	\$18.14
47-2031	Carpenters	25,302	26,743	1,441	5.7%	720	814	1,880	3,414	\$23.34
47-2041	Carpet Installers	600	607	7	1.2%	4	17	42	63	\$17.25
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	1,030	1,121	91	8.8%	46	30	74	150	\$20.83
47-2044	Tile and Marble Setters	888	939	51	5.7%	26	26	63	115	\$19.26
47-2051	Cement Masons and Concrete Finishers	4,723	5,194	471	10.0%	236	145	376	757	\$23.32
47-2061	Construction Laborers	44,284	47,293	3,009	6.8%	1,504	1,531	3,562	6,597	\$20.04
47-2071	Paving, Surfacing, and Tamping Equipment Operators	1,262	1,323	61	4.8%	30	58	102	190	\$21.86
47-2073	Operating Engineers and Other Construction Equipment Operators	13,609	14,207	598	4.4%	299	472	1,132	1,903	\$24.79
47-2081	Drywall and Ceiling Tile Installers	1,440	1,481	41	2.8%	20	42	102	164	\$21.86
47-2082	Tapers	135	143	8	5.9%	4	4	10	18	\$28.31
47-2111	Electricians	26,803	28,528	1,725	6.4%	862	850	2,356	4,068	\$25.43
47-2121	Glaziers	1,457	1,609	152	10.4%	76	50	126	252	\$21.89
47-2131	Insulation Workers, Floor, Ceiling, and Wall	925	957	32	3.5%	16	22	86	124	\$19.81
47-2141	Painters, Construction and Maintenance	8,455	8,752	297	3.5%	148	298	574	1,020	\$19.98
47-2142	Paperhangers	167	166	-1	-0.6%	0	6	11	17	\$19.68
47-2151	Pipelayers	901	935	34	3.8%	17	27	75	119	\$22.99
47-2152	Plumbers, Pipefitters, and Steamfitters	15,226	16,327	1,101	7.2%	550	462	1,288	2,300	\$26.58
47-2161	Plasterers and Stucco Masons	165	172	7	4.2%	4	4	12	20	\$24.56
47-2171	Reinforcing Iron and Rebar Workers	429	449	20	4.7%	10	10	42	62	\$30.05

Ohio Short-Term Occupational* Employment Forecast
First Quarter 2019 to First Quarter 2021

SOC Code *	Occupational Title**	Employment		Change in Employment		Annual Openings				Median Wage*** May 2019
		2019 Employment	2021 Forecast	2019-2021	Percent	Change [1]	Exits [2]	Transfers [3]	Total	
47-2181	Roofers	5,091	5,748	657	12.9%	328	138	420	886	\$19.39
47-2211	Sheet Metal Workers	4,451	4,724	273	6.1%	136	136	362	634	\$26.93
47-2221	Structural Iron and Steel Workers	3,577	3,910	333	9.3%	166	104	338	608	\$28.98
47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	438	495	57	13.0%	28	16	48	92	\$18.55
47-3012	Helpers--Carpenters	436	454	18	4.1%	9	14	46	69	\$14.36
47-3013	Helpers--Electricians	807	856	49	6.1%	24	28	84	136	\$14.74
47-3015	Helpers--Pipefitters, Plumbers, Pipefitters, and Steamfitters	867	927	60	6.9%	30	30	92	152	\$14.61
47-3019	Helpers, Construction Trades, All Other	538	575	37	6.9%	18	18	56	92	\$14.90
47-4011	Construction and Building Inspectors	3,145	3,226	81	2.6%	40	175	220	435	\$28.97
47-4021	Elevator Installers and Repairers	547	586	39	7.1%	20	20	45	85	\$43.99
47-4031	Fence Erectors	514	539	25	4.9%	12	20	42	74	\$18.05
47-4041	Hazardous Materials Removal Workers	2,507	2,655	148	5.9%	74	110	214	398	\$22.72
47-4051	Highway Maintenance Workers	7,505	7,562	57	0.8%	28	304	532	864	\$20.15
47-4061	Rail-Track Laying and Maintenance Equipment Operators	226	235	9	4.0%	4	8	16	28	\$22.88
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	1,412	1,495	83	5.9%	42	42	122	206	\$21.30
47-4090	Miscellaneous Construction and Related Workers	1,079	1,121	42	3.9%	21	37	100	158	\$17.74
47-5012	Rotary Drill Operators, Oil and Gas	153	159	6	3.9%	3	4	18	25	\$21.98
47-5013	Service Unit Operators, Oil, Gas, and Mining	889	927	38	4.3%	19	26	102	147	\$24.58
47-5021	Earth Drillers, Except Oil and Gas	509	542	33	6.5%	16	19	51	86	▲
47-5041	Continuous Mining Machine Operators	711	695	-16	-2.3%	-8	24	64	80	\$26.68
47-5071	Roustabouts, Oil and Gas	471	487	16	3.4%	8	14	50	72	\$18.67
47-5081	Helpers--Extraction Workers	672	707	35	5.2%	18	23	68	109	\$18.05
49-0000	Installation, Maintenance, and Repair Occupations	217,937	223,580	5,643	2.6%	2,822	6,946	14,578	24,346	\$21.77
49-1011	FL Supervisors of Mechanics, Installers, and Repairers	16,595	16,998	403	2.4%	202	526	1,015	1,743	\$30.99
49-2011	Computer, Automated Teller, and Office Machine Repairers	3,659	3,640	-19	-0.5%	-10	102	286	378	\$17.33
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairers	270	271	1	0.4%	0	8	22	30	\$27.02
49-2022	Telecommunications Equipment Installers and Repairers, Ex. Line Installers	8,377	8,298	-79	-0.9%	-40	232	686	878	\$25.20
49-2091	Avionics Technicians	233	242	9	3.9%	4	6	12	22	\$27.69
49-2092	Electric Motor, Power Tool, and Related Repairers	878	898	20	2.3%	10	32	59	101	\$21.45
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	219	220	1	0.5%	0	4	16	20	\$28.54
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	1,997	2,034	37	1.9%	18	35	140	193	\$27.57
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	352	343	-9	-2.6%	-4	6	24	26	\$33.48
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	174	162	-12	-6.9%	-6	4	15	13	\$17.76
49-2097	Electronic Home Entertainment Equipment Installers and Repairers	1,265	1,258	-7	-0.6%	-4	31	107	134	\$14.57
49-2098	Security and Fire Alarm Systems Installers	2,304	2,414	110	4.8%	55	66	216	337	\$21.59
49-3011	Aircraft Mechanics and Service Technicians	4,550	4,683	133	2.9%	66	124	254	444	\$29.49
49-3021	Automotive Body and Related Repairers	5,673	5,817	144	2.5%	72	184	367	623	\$18.56
49-3022	Automotive Glass Installers and Repairers	1,109	1,140	31	2.8%	16	26	81	123	\$18.07
49-3023	Automotive Service Technicians and Mechanics	27,427	27,810	383	1.4%	192	750	1,940	2,882	\$18.52
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	10,110	10,455	345	3.4%	172	286	665	1,123	\$22.48
49-3041	Farm Equipment Mechanics and Service Technicians	1,268	1,293	25	2.0%	12	40	88	140	\$20.70
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	4,131	4,256	125	3.0%	62	131	286	479	\$25.92
49-3043	Rail Car Repairers	198	204	6	3.0%	3	6	14	23	\$22.79
49-3051	Motorboat Mechanics and Service Technicians	442	468	26	5.9%	13	18	28	59	\$17.68
49-3052	Motorcycle Mechanics	608	627	19	3.1%	10	24	37	71	\$16.42
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	1,335	1,399	64	4.8%	32	54	82	168	\$14.90
49-3091	Bicycle Repairers	150	151	1	0.7%	0	4	12	16	\$12.71
49-3092	Recreational Vehicle Service Technicians	427	440	13	3.0%	6	13	34	53	\$16.95
49-3093	Tire Repairers and Changers	3,791	3,826	35	0.9%	18	116	304	438	\$13.82
49-9011	Mechanical Door Repairers	1,220	1,299	79	6.5%	40	32	76	148	\$20.55
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	1,730	1,719	-11	-0.6%	-6	44	104	142	\$33.05
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	12,352	13,222	870	7.0%	435	348	900	1,683	\$22.73
49-9031	Home Appliance Repairers	1,463	1,525	62	4.2%	31	69	92	192	\$20.30
49-9041	Industrial Machinery Mechanics	19,421	20,059	638	3.3%	319	620	1,189	2,128	\$25.66
49-9043	Maintenance Workers, Machinery	3,087	3,171	84	2.7%	42	118	166	326	\$23.11
49-9044	Millwrights	2,736	2,881	145	5.3%	72	78	164	314	\$28.89
49-9051	Electrical Power-Line Installers and Repairers	3,066	3,040	-26	-0.8%	-13	74	182	243	\$34.89
49-9052	Telecommunications Line Installers and Repairers	3,713	3,809	96	2.6%	48	88	332	468	\$20.45
49-9062	Medical Equipment Repairers	2,264	2,300	36	1.6%	18	98	141	257	\$22.41
49-9063	Musical Instrument Repairers and Tuners	315	313	-2	-0.6%	-1	14	20	33	\$16.09
49-9064	Watch Repairers	151	142	-9	-6.0%	-4	6	9	11	\$20.44 +
49-9069	Precision Instrument and Equipment Repairers, All Other	592	604	12	2.0%	6	26	37	69	\$26.79
49-9071	Maintenance and Repair Workers, General	56,877	58,469	1,592	2.8%	796	2,022	3,568	6,386	\$19.32
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	1,988	1,970	-18	-0.9%	-9	80	151	222	\$17.44
49-9094	Locksmiths and Safe Repairers	547	546	-1	-0.2%	0	26	32	58	\$20.89
49-9096	Riggers	331	341	10	3.0%	5	7	25	37	\$21.97
49-9098	Helpers--Installation, Maintenance, and Repair Workers	2,018	2,087	69	3.4%	34	110	152	296	\$14.24
49-9099	Installation, Maintenance, and Repair Workers, All Other	6,154	6,371	217	3.5%	108	245	428	781	\$18.63
51-0000	Production Occupations	510,376	514,913	4,537	0.9%	2,268	19,532	39,235	61,035	\$17.60
51-1011	FL Supervisors of Production and Operating Workers	31,808	32,481	673	2.1%	336	1,021	2,264	3,621	\$29.27
51-2021	Coil Winders, Tapers, and Finishers	614	599	-15	-2.4%	-8	26	43	61	\$18.85
51-2028	Electrical/Electronic/Electromechanical Assemblers, Ex. Coil Winders, Tapers, and Finishers	12,770	12,998	228	1.8%	114	554	911	1,579	\$16.64
51-2031	Engine and Other Machine Assemblers	9,110	8,955	-155	-1.7%	-78	217	850	989	\$23.63
51-2041	Structural Metal Fabricators and Fitters	3,702	3,660	-42	-1.1%	-21	89	296	364	\$17.60
51-2091	Fiberglass Laminators and Fabricators	446	460	14	3.1%	7	18	34	59	\$16.65
51-2098	Assemblers and Fabricators, All Other, Including Team Assemblers	74,653	74,311	-342	-0.5%	-171	3,050	5,625	8,504	\$16.40
51-3011	Bakers	6,684	6,700	16	0.2%	8	388	527	923	\$12.42
51-3021	Butchers and Meat Cutters	4,288	4,284	-4	-0.1%	-2	176	354	528	\$16.09
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	1,778	1,809	31	1.7%	16	74	148	238	\$14.37
51-3023	Slaughterers and Meat Packers	3,845	3,936	91	2.4%	46	160	322	528	\$13.19
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators/Tenders	449	454	5	1.1%	2	24	38	64	\$14.16
51-3092	Food Batchmakers	5,324	5,362	38	0.7%	19	322	470	811	\$14.65
51-3093	Food Cooking Machine Operators and Tenders	2,309	2,335	26	1.1%	13	149	214	376	\$14.72
51-3099	Food Processing Workers, All Other	2,844	2,866	22	0.8%	11	108	196	315	\$11.95
51-4011	Computer-Controlled Machine Tool Operators, M/P	14,478	14,497	19	0.1%	10	416	1,072	1,498	\$34.31 +
51-4012	Computer Numerically Controlled Mach. Tool Programmers, M/P	1,754	1,848	94	5.4%	47	52	134	233	\$44.25 +
51-4021	Extruding and Drawing Machine S/O/T, M/P	7,743	7,861	118	1.5%	59	222	752	1,033	\$16.88
51-4022	Forging Machine S/O/T, M/P	1,108	1,070	-38	-3.4%	-19	29	74	84	\$19.82
51-4023	Rolling Machine S/O/T, M/P	3,544	3,536	-8	-0.2%	-4	94	242	332	\$21.26

Ohio Short-Term Occupational* Employment Forecast
First Quarter 2019 to First Quarter 2021

SOC Code *	Occupational Title**	Employment		Change in Employment		Annual Openings				Median Wage*** May 2019
		2019 Employment	2021 Forecast	2019-2021	Percent	Change [1]	Exits [2]	Transfers [3]	Total	
51-4031	Cutting, Punching, and Press Machine S/O/T, M/P	17,001	16,928	-73	-0.4%	-36	642	1,254	1,860	\$16.89
51-4032	Drilling and Boring Machine Tool S/O/T, M/P	828	803	-25	-3.0%	-12	28	57	73	\$19.60
51-4033	Grind/Lapping/Polish/Buff Mach. Tool S/O/T, M/P	7,067	7,027	-40	-0.6%	-20	298	504	782	\$17.28
51-4034	Lathe and Turning Machine Tool S/O/T, M/P	2,199	2,188	-11	-0.5%	-6	104	142	240	\$19.79
51-4041	Machinists	27,376	27,983	607	2.2%	304	919	1,892	3,115	\$20.46
51-4051	Metal-Refining Furnace Operators and Tenders	1,529	1,543	14	0.9%	7	54	127	188	\$17.02
51-4052	Pourers and Casters, Metal	627	604	-23	-3.7%	-12	22	51	61	\$17.69
51-4061	Model Makers, M/P	320	323	3	0.9%	2	11	22	35	\$18.09
51-4062	Patternmakers, M/P	211	207	-4	-1.9%	-2	8	14	20	\$21.11
51-4071	Foundry Mold and Coremakers	2,320	2,251	-69	-3.0%	-34	70	180	216	\$14.85
51-4072	Molding, Coremaking, and Casting Machine S/O/T, M/P	16,153	16,303	150	0.9%	75	494	1,276	1,845	\$14.51
51-4081	Multiple Machine Tool S/O/T, M/P	16,951	17,288	337	2.0%	168	594	1,197	1,959	\$17.15
51-4111	Tool and Die Makers	7,134	7,145	11	0.2%	6	262	446	714	\$24.26
51-4121	Welders, Cutters, Solderers, and Brazers	19,568	20,081	513	2.6%	256	508	1,664	2,428	\$19.20
51-4122	Welding, Soldering, and Brazing Machine S/O/T	2,303	2,300	-3	-0.1%	-2	59	194	251	\$18.56
51-4191	Heat Treating Equipment S/O/T, M/P	1,639	1,636	-3	-0.2%	-2	57	114	169	\$18.40
51-4193	Plating and Coating Machine S/O/T, M/P	3,648	3,639	-9	-0.2%	-4	110	277	383	\$16.08
51-4194	Tool Grinders, Filers, and Sharpeners	574	574	0	0.0%	0	40	42	82	\$17.91
51-4199	Metal Workers and Plastic Workers, All Other	1,141	1,145	4	0.4%	2	40	80	122	\$16.45
51-5111	Prepress Technicians and Workers	1,752	1,710	-42	-2.4%	-21	64	148	191	\$19.81
51-5112	Printing Press Operators	9,347	9,411	64	0.7%	32	356	655	1,043	\$17.99
51-5113	Print Binding and Finishing Workers	2,554	2,583	29	1.1%	14	171	187	372	\$15.11
51-6011	Laundry and Dry-Cleaning Workers	7,640	7,810	170	2.2%	85	480	550	1,115	\$10.94
51-6021	Pressers, Textile, Garment, and Related Materials	1,486	1,468	-18	-1.2%	-9	80	92	163	\$11.72
51-6031	Sewing Machine Operators	4,066	4,044	-22	-0.5%	-11	236	218	443	\$12.60
51-6041	Shoe and Leather Workers and Repairers	358	374	16	4.5%	8	26	18	52	\$12.39
51-6052	Tailors, Dressmakers, and Custom Sewers	1,103	1,099	-4	-0.4%	-2	90	56	144	\$15.71
51-6062	Textile Cutting Machine S/O/T	392	386	-6	-1.5%	-3	17	19	33	\$14.43
51-6063	Textile Knitting and Weaving Machine S/O/T	217	210	-7	-3.2%	-4	12	11	19	\$13.32
51-6091	Extruding and Forming Machine S/O/T, Synthetic and Glass Fibers	612	612	0	0.0%	0	35	48	83	\$17.00
51-6093	Upholsterers	502	526	24	4.8%	12	22	32	66	\$16.46
51-6099	Textile, Apparel, and Furnishings Workers, All Other	303	305	2	0.7%	1	18	24	43	\$15.58
51-7011	Cabinetmakers and Bench Carpenters	4,988	5,105	117	2.3%	58	211	312	581	\$17.66
51-7021	Furniture Finishers	1,000	1,031	31	3.1%	16	50	64	130	\$14.94
51-7041	Sawing Machine S/O/T, Wood	1,179	1,202	23	2.0%	12	34	104	150	\$15.02
51-7042	Woodworking Machine S/O/T, Except Sawing	3,786	3,916	130	3.4%	65	206	330	601	\$14.67
51-7099	Woodworkers, All Other	584	609	25	4.3%	12	38	36	86	\$17.16
51-8012	Power Distributors and Dispatchers	883	861	-22	-2.5%	-11	18	63	70	\$42.41
51-8013	Power Plant Operators	1,257	1,211	-46	-3.7%	-23	26	89	92	\$39.50
51-8021	Stationary Engineers and Boiler Operators	995	1,002	7	0.7%	4	32	73	109	\$27.92
51-8031	Water and Wastewater Treatment Plant and System Operators	4,510	4,481	-29	-0.6%	-14	137	270	393	\$23.87
51-8091	Chemical Plant and System Operators	1,523	1,530	7	0.5%	4	36	134	174	\$31.51
51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	1,091	1,113	22	2.0%	11	26	96	133	\$35.07
51-8099	Plant and System Operators, All Other	391	405	14	3.6%	7	10	34	51	\$26.98
51-9011	Chemical Equipment Operators and Tenders	6,380	6,513	133	2.1%	66	164	576	806	\$23.13
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine S/O/T	1,755	1,838	83	4.7%	42	46	160	248	\$29.93
51-9021	Crushing, Grinding, and Polishing Machine S/O/T	1,609	1,630	21	1.3%	10	49	140	199	\$19.11
51-9022	Grinding and Polishing Workers, Hand	1,689	1,630	-59	-3.5%	-30	50	143	163	\$14.51
51-9023	Mixing and Blending Machine S/O/T	7,472	7,648	176	2.4%	88	228	651	967	\$18.56
51-9031	Cutters and Trimmers, Hand	309	298	-11	-3.6%	-6	12	24	30	\$13.67
51-9032	Cutting and Slicing Machine S/O/T	3,463	3,548	85	2.5%	42	145	286	473	\$17.80
51-9041	Extruding, Forming, Pressing, and Compacting Machine S/O/T	7,205	7,440	235	3.3%	118	286	509	913	\$15.67
51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	1,114	1,141	27	2.4%	14	50	70	134	\$18.06
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	33,265	32,762	-503	-1.5%	-252	1,310	2,758	3,816	\$18.97
51-9071	Jewelers and Precious Stone and Metal Workers	900	876	-24	-2.7%	-12	54	59	101	\$16.35
51-9081	Dental Laboratory Technicians	1,237	1,253	16	1.3%	8	56	98	162	\$20.20
51-9082	Medical Appliance Technicians	1,163	1,192	29	2.5%	14	52	92	158	\$19.05
51-9083	Ophthalmic Laboratory Technicians	1,293	1,316	23	1.8%	12	58	102	172	\$14.99
51-9111	Packaging and Filling Machine Operators and Tenders	15,911	16,277	366	2.3%	183	711	1,158	2,052	\$15.19
51-9121	Coating, Painting, and Spraying Machine S/O/T	5,770	5,900	130	2.3%	65	176	459	700	\$39.07 *
51-9122	Painters, Transportation Equipment	1,410	1,459	49	3.5%	24	43	113	180	\$52.84 *
51-9123	Painting, Coating, and Decorating Workers	269	277	8	3.0%	4	8	22	34	\$14.78
51-9141	Semiconductor Processors	776	795	19	2.4%	10	30	62	102	\$18.58
51-9151	Photographic Process Workers and Processing Machine Operators	613	595	-18	-2.9%	-9	27	66	84	\$14.96
51-9191	Adhesive Bonding Machine Operators and Tenders	870	895	25	2.9%	12	30	86	128	\$16.57
51-9192	Cleaning/Washing/Metal Pickling Equipment Operators and Tenders	1,432	1,457	25	1.7%	12	92	132	236	\$16.56
51-9193	Cooling and Freezing Equipment Operators and Tenders	905	923	18	2.0%	9	34	72	115	\$18.38
51-9194	Etchers and Engravers	770	784	14	1.8%	7	40	54	101	\$16.14
51-9195	Molders, Shapers, and Casters, Except M/P	2,860	2,964	104	3.6%	52	116	207	375	\$15.85
51-9196	Paper Goods Machine S/O/T	5,074	5,171	97	1.9%	48	159	396	603	\$19.08
51-9197	Tire Builders	697	723	26	3.7%	13	14	59	86	\$17.40
51-9198	Helpers--Production Workers	16,667	17,189	522	3.1%	261	900	1,595	2,756	\$15.17
51-9199	Production Workers, All Other	13,770	14,095	325	2.4%	162	522	1,091	1,775	\$15.34
53-0000	Transportation and Material Moving Occupations	416,918	429,989	13,071	3.1%	6,536	19,074	34,010	59,620	\$15.09
53-1011	Aircraft Cargo Handling Supervisors	186	195	9	4.8%	4	6	14	24	\$25.03
53-1048	FL Sup of Trans/Mat.-Mov. Workers, Ex. Aircraft Cargo Handling	14,799	15,410	611	4.1%	306	480	1,132	1,918	\$25.80
53-2011	Airline Pilots, Copilots, and Flight Engineers	921	929	8	0.9%	4	26	68	98	\$98,990 **
53-2012	Commercial Pilots	1,795	1,876	81	4.5%	40	51	136	227	\$98,940 **
53-2021	Air Traffic Controllers	717	729	12	1.7%	6	17	50	73	\$66.23
53-2022	Airfield Operations Specialists	138	141	3	2.2%	2	4	10	16	\$23.77
53-3011	Ambulance Drivers and Attendants, Ex. EMT	771	747	-24	-3.1%	-12	42	73	103	\$12.09
53-3021	Bus Drivers, Transit and Intercity	5,104	5,164	60	1.2%	30	398	250	678	\$22.23 *
53-3022	Bus Drivers, School or Special Client	10,563	10,861	298	2.8%	149	832	520	1,501	\$20.64 *
53-3031	Driver/Sales Workers	22,871	22,717	-154	-0.7%	-77	938	1,653	2,514	\$9.80
53-3032	Heavy and Tractor-Trailer Truck Drivers	78,010	80,636	2,626	3.4%	1,313	3,266	5,754	10,333	\$21.66
53-3033	Light Truck or Delivery Services Drivers	42,386	43,849	1,463	3.5%	732	1,775	3,128	5,635	\$15.27
53-3041	Taxi Drivers and Chauffeurs	13,552	14,516	964	7.1%	482	754	767	2,003	\$48.94 *
53-3099	Motor Vehicle Operators, All Other	4,204	4,279	75	1.8%	38	430	283	751	\$12.44
53-4011	Locomotive Engineers	2,477	2,480	3	0.1%	2	66	163	231	\$31.81

Ohio Short-Term Occupational* Employment Forecast

First Quarter 2019 to First Quarter 2021

SOC Code¹	Occupational Title**	Employment		Change in Employment		Annual Openings				Median Wage*** May 2019
		2019 Employment	2021 Forecast	2019-2021	Percent	Change [1]	Exits [2]	Transfers [3]	Total	
53-4021	Railroad Brake, Signal, and Switch Operators	153	154	1	0.7%	0	3	12	15	\$23.15
53-4031	Railroad Conductors and Yardmasters	1,629	1,629	0	0.0%	0	32	122	154	\$30.05
53-5011	Sailors and Marine Oilers	335	345	10	3.0%	5	10	32	47	\$18.48
53-5021	Captains, Mates, and Pilots of Water Vessels	266	276	10	3.8%	5	7	18	30	\$23.26
53-6011	Bridge and Lock Tenders	137	141	4	2.9%	2	5	10	17	\$24.20
53-6021	Parking Lot Attendants	4,499	4,726	227	5.0%	114	237	468	819	\$10.43
53-6031	Automotive and Watercraft Service Attendants	3,755	3,818	63	1.7%	32	168	391	591	\$11.45
53-6041	Traffic Technicians	107	108	1	0.9%	0	4	8	12	\$25.13
53-6051	Transportation Inspectors	797	813	16	2.0%	8	24	56	88	\$23.68
53-6061	Transportation Attendants, Except Flight Attendants	275	284	9	3.3%	4	22	15	41	\$12.79
53-6099	Transportation Workers, All Other	690	710	20	2.9%	10	24	50	84	\$39.07 *
53-7011	Conveyor Operators and Tenders	808	830	22	2.7%	11	28	70	109	\$19.60
53-7021	Crane and Tower Operators	1,734	1,798	64	3.7%	32	56	150	238	\$22.15
53-7032	Excavating and Loading Machine and Dragline Operators	989	1,045	56	5.7%	28	37	84	149	\$28.45 *
53-7033	Loading Machine Operators, Underground Mining	185	198	13	7.0%	6	7	16	29	\$37.59 *
53-7041	Hoist and Winch Operators	145	148	3	2.1%	2	5	12	19	\$18.56
53-7051	Industrial Truck and Tractor Operators	31,056	32,461	1,405	4.5%	702	951	2,622	4,275	\$17.32
53-7061	Cleaners of Vehicles and Equipment	13,018	13,405	387	3.0%	194	658	1,266	2,118	\$12.02
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	118,871	123,063	4,192	3.5%	2,096	5,463	11,338	18,897	\$14.43
53-7063	Machine Feeders and Offbearers	2,285	2,346	61	2.7%	30	116	190	336	\$16.75
53-7064	Packers and Packagers, Hand	29,461	29,691	230	0.8%	115	1,770	2,492	4,377	\$12.60
53-7071	Gas Compressor and Gas Pumping Station Operators	186	188	2	1.1%	1	6	16	23	\$36.46
53-7072	Pump Operators, Except Wellhead Pumpers	128	132	4	3.1%	2	4	11	17	\$20.20
53-7073	Wellhead Pumpers	494	513	19	3.8%	10	17	43	70	\$18.09
53-7081	Refuse and Recyclable Material Collectors	4,539	4,727	188	4.1%	94	252	387	733	\$18.54
53-7121	Tank Car, Truck, and Ship Loaders	359	366	7	1.9%	4	18	28	50	\$18.05
53-7199	Material Moving Workers, All Other	301	307	6	2.0%	3	14	24	41	\$14.81

¹ Occupational codes based on SOC 2010 coding structure. Detailed information - <http://www.bls.gov/soc/>

* Occupations with 100 or more workers.

** Title Abbreviations

FL = First-Line

FL Sup = First-Line Supervisors

M/P = Metal and Plastic

S/O/T = Setters, Operators, and Tenders

*** Wage estimates are based on Ohio's OES surveys.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, June 2020.

[1] Numeric change measures the projected annual number of job gains or losses in an occupation for the projection period.

[2] Exits are the projected number of workers leaving an occupation and exiting the labor force entirely.

[3] Transfers are the projected number of workers leaving an occupation and transferring to a different occupation.

▲ Wage data unavailable.

++ National Wage

++ Certain occupations report wages at the annual level - for elementary and secondary teachers

this typically reflects the 9 1/2 month school year.

+++ Annual National Wages

Ohio Typical Occupational* Educational and Training Requirements

SOC Code¹	Occupational Title**	Typical Education Required for Entry	Commonly Required Work Experience in Related Occupation	Typical On-the-Job Training to Obtain Competency	Median Wage*** May 2019
00-0000	Total, All Occupations				\$18.54
11-0000	Management Occupations				\$47.08
11-1011	Chief Executives	Bachelor's degree	5 years or more	None	\$88.94
11-1021	General and Operations Managers	Bachelor's degree	5 years or more	None	\$46.81
11-1031	Legislators	Bachelor's degree	Less than 5 years	None	\$19,700 **
11-2011	Advertising and Promotions Managers	Bachelor's degree	Less than 5 years	None	\$48.34
11-2021	Marketing Managers	Bachelor's degree	5 years or more	None	\$60.39
11-2022	Sales Managers	Bachelor's degree	Less than 5 years	None	\$59.70
11-2031	Public Relations and Fundraising Managers	Bachelor's degree	5 years or more	None	\$48.26
11-3011	Administrative Services Managers	Bachelor's degree	Less than 5 years	None	\$41.31
11-3021	Computer and Information Systems Managers	Bachelor's degree	5 years or more	None	\$61.65
11-3031	Financial Managers	Bachelor's degree	5 years or more	None	\$58.23
11-3051	Industrial Production Managers	Bachelor's degree	5 years or more	None	\$49.01
11-3061	Purchasing Managers	Bachelor's degree	5 years or more	None	\$55.10
11-3071	Transportation, Storage, and Distribution Managers	High school diploma or equivalent	5 years or more	None	\$41.35
11-3111	Compensation and Benefits Managers	Bachelor's degree	5 years or more	None	\$59.14
11-3121	Human Resources Managers	Bachelor's degree	5 years or more	None	\$54.62
11-3131	Training and Development Managers	Bachelor's degree	5 years or more	None	\$51.58
11-9013	Farmers, Ranchers, and Other Agricultural Managers	High school diploma or equivalent	5 years or more	None	\$31.81
11-9021	Construction Managers	Bachelor's degree	None	Moderate-term on-the-job training	\$43.10
11-9031	Education Administrators, Preschool and Childcare Center/Program	Bachelor's degree	Less than 5 years	None	\$20.77
11-9032	Education Administrators, Elementary and Secondary School	Master's degree	5 years or more	None	\$89,960 **
11-9033	Education Administrators, Postsecondary	Master's degree	Less than 5 years	None	\$44.53
11-9039	Education Administrators, All Other	Bachelor's degree	Less than 5 years	None	\$42.28
11-9041	Architectural and Engineering Managers	Bachelor's degree	5 years or more	None	\$62.52
11-9051	Food Service Managers	High school diploma or equivalent	Less than 5 years	None	\$25.23
11-9061	Funeral Service Managers	Associate's degree	Less than 5 years	None	\$41.04
11-9081	Lodging Managers	High school diploma or equivalent	Less than 5 years	None	\$18.95
11-9111	Medical and Health Services Managers	Bachelor's degree	Less than 5 years	None	\$44.08
11-9121	Natural Sciences Managers	Bachelor's degree	5 years or more	None	\$58.57
11-9131	Postmasters and Mail Superintendents	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$37.36
11-9141	Property, Real Estate, and Community Association Managers	High school diploma or equivalent	Less than 5 years	None	\$24.30
11-9151	Social and Community Service Managers	Bachelor's degree	Less than 5 years	None	\$31.56
11-9161	Emergency Management Directors	Bachelor's degree	5 years or more	None	\$35.93
11-9199	Managers, All Other	Bachelor's degree	Less than 5 years	None	\$47.45
13-0000	Business and Financial Operations Occupations				\$31.36
13-1020	Buyers and Purchasing Agents	Bachelor's degree	None	Moderate-term on-the-job training	\$30.12
13-1031	Claims Adjusters, Examiners, and Investigators	High school diploma or equivalent	None	Long-term on-the-job training	\$30.81
13-1032	Insurance Appraisers, Auto Damage	Postsecondary non-degree award	None	Moderate-term on-the-job training	\$27.35
13-1041	Compliance Officers	Bachelor's degree	None	Moderate-term on-the-job training	\$30.67
13-1051	Cost Estimators	Bachelor's degree	None	Moderate-term on-the-job training	\$30.15
13-1071	Human Resources Specialists	Bachelor's degree	None	None	\$27.95
13-1075	Labor Relations Specialists	Bachelor's degree	Less than 5 years	None	\$27.29
13-1081	Logisticians	Bachelor's degree	None	None	\$34.84
13-1111	Management Analysts	Bachelor's degree	Less than 5 years	None	\$39.45
13-1121	Meeting, Convention, and Event Planners	Bachelor's degree	None	None	\$22.18
13-1131	Fundraisers	Bachelor's degree	None	None	\$26.01
13-1141	Compensation, Benefits, and Job Analysis Specialists	Bachelor's degree	Less than 5 years	None	\$28.76
13-1151	Training and Development Specialists	Bachelor's degree	Less than 5 years	None	\$27.17
13-1161	Market Research Analysts and Marketing Specialists	Bachelor's degree	None	None	\$29.18
13-1199	Business Operations Specialists, All Other	Bachelor's degree	None	None	\$33.81
13-2011	Accountants and Auditors	Bachelor's degree	None	None	\$31.58
13-2021	Appraisers and Assessors of Real Estate	Bachelor's degree	None	Long-term on-the-job training	\$29.36
13-2031	Budget Analysts	Bachelor's degree	None	None	\$35.77
13-2041	Credit Analysts	Bachelor's degree	None	None	\$34.65
13-2051	Financial Analysts	Bachelor's degree	None	None	▲
13-2052	Personal Financial Advisors	Bachelor's degree	None	Long-term on-the-job training	\$35.41
13-2053	Insurance Underwriters	Bachelor's degree	None	Moderate-term on-the-job training	\$32.91
13-2061	Financial Examiners	Bachelor's degree	None	Long-term on-the-job training	\$32.28
13-2071	Credit Counselors	Bachelor's degree	None	Moderate-term on-the-job training	\$22.97
13-2072	Loan Officers	Bachelor's degree	None	Moderate-term on-the-job training	\$32.57
13-2081	Tax Examiners and Collectors, and Revenue Agents	Bachelor's degree	None	Moderate-term on-the-job training	\$30.72
13-2082	Tax Preparers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.00
13-2099	Financial Specialists, All Other	Bachelor's degree	None	Moderate-term on-the-job training	▲
15-0000	Computer and Mathematical Occupations				\$37.92
15-1111	Computer and Information Research Scientists	Master's degree	None	None	\$53.56
15-1121	Computer Systems Analysts	Bachelor's degree	None	None	\$40.72
15-1122	Information Security Analysts	Bachelor's degree	Less than 5 years	None	\$44.59
15-1131	Computer Programmers	Bachelor's degree	None	None	\$37.02
15-1132	Software Developers, Applications	Bachelor's degree	None	None	▲
15-1133	Software Developers, Systems Software	Bachelor's degree	None	None	▲
15-1134	Web Developers	Associate's degree	None	None	\$33.07
15-1141	Database Administrators	Bachelor's degree	None	None	\$42.91
15-1142	Network and Computer Systems Administrators	Bachelor's degree	None	None	\$37.71
15-1143	Computer Network Architects	Bachelor's degree	5 years or more	None	\$48.33
15-1151	Computer User Support Specialists	Some college, no degree	None	None	\$23.15
15-1152	Computer Network Support Specialists	Associate's degree	None	None	\$18.26
15-1199	Computer Occupations, All Other	Bachelor's degree	None	None	\$38.52
15-2011	Actuaries	Bachelor's degree	None	Long-term on-the-job training	\$46.49
15-2031	Operations Research Analysts	Bachelor's degree	None	None	\$39.29
15-2041	Statisticians	Master's degree	None	None	\$38.46
17-0000	Architecture and Engineering Occupations				\$36.72
17-1011	Architects, Except Landscape and Naval	Bachelor's degree	None	Internship/residency	\$39.51
17-1012	Landscape Architects	Bachelor's degree	None	Internship/residency	\$30.28
17-1022	Surveyors	Bachelor's degree	None	Internship/residency	\$27.98
17-2011	Aerospace Engineers	Bachelor's degree	None	None	\$55.27
17-2021	Agricultural Engineers	Bachelor's degree	None	None	\$40.53
17-2031	Biomedical Engineers	Bachelor's degree	None	None	\$38.47
17-2041	Chemical Engineers	Bachelor's degree	None	None	\$46.76
17-2051	Civil Engineers	Bachelor's degree	None	None	\$38.20

Ohio Typical Occupational* Educational and Training Requirements

SOC Code*	Occupational Title**	Typical Education Required for Entry	Commonly Required Work Experience in Related Occupation	Typical On-the-Job Training to Obtain Competency	Median Wage*** May 2019
17-2061	Computer Hardware Engineers	Bachelor's degree	None	None	\$49.34
17-2071	Electrical Engineers	Bachelor's degree	None	None	\$40.78
17-2072	Electronics Engineers, Except Computer	Bachelor's degree	None	None	\$46.26
17-2081	Environmental Engineers	Bachelor's degree	None	None	\$40.50
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	Bachelor's degree	None	None	\$44.43
17-2112	Industrial Engineers	Bachelor's degree	None	None	\$38.77
17-2131	Materials Engineers	Bachelor's degree	None	None	\$39.25
17-2141	Mechanical Engineers	Bachelor's degree	None	None	\$38.23
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers	Bachelor's degree	None	None	\$40.18
17-2171	Petroleum Engineers	Bachelor's degree	None	None	\$54.81
17-2199	Engineers, All Other	Bachelor's degree	None	None	\$43.64
17-3011	Architectural and Civil Drafters	Associate's degree	None	None	\$26.40
17-3012	Electrical and Electronics Drafters	Associate's degree	None	None	\$28.57
17-3013	Mechanical Drafters	Associate's degree	None	None	\$26.92
17-3019	Drafters, All Other	Associate's degree	None	None	\$26.78
17-3021	Aerospace Engineering and Operations Technicians	Associate's degree	None	None	\$32.70
17-3022	Civil Engineering Technicians	Associate's degree	None	None	\$28.33
17-3023	Electrical and Electronics Engineering Technicians	Associate's degree	None	None	\$29.87
17-3024	Electro-Mechanical Technicians	Associate's degree	None	None	\$24.24
17-3025	Environmental Engineering Technicians	Associate's degree	None	None	\$24.06
17-3026	Industrial Engineering Technicians	Associate's degree	None	None	\$25.45
17-3027	Mechanical Engineering Technicians	Associate's degree	None	None	\$26.51
17-3029	Engineering Technicians, Except Drafters, All Other	Associate's degree	None	None	\$27.87
17-3031	Surveying and Mapping Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.08
19-0000	Life, Physical, and Social Science Occupations				\$30.36
19-1012	Food Scientists and Technologists	Bachelor's degree	None	None	\$35.68
19-1013	Soil and Plant Scientists	Bachelor's degree	None	None	\$26.74
19-1021	Biochemists and Biophysicists	Doctoral or professional degree	None	None	\$23.02
19-1022	Microbiologists	Bachelor's degree	None	None	\$29.82
19-1023	Zoologists and Wildlife Biologists	Bachelor's degree	None	None	\$28.43
19-1029	Biological Scientists, All Other	Bachelor's degree	None	None	\$36.77
19-1031	Conservation Scientists	Bachelor's degree	None	None	\$26.63
19-1032	Foresters	Bachelor's degree	None	None	\$29.18
19-1041	Epidemiologists	Master's degree	None	None	\$33.01
19-1042	Medical Scientists, Except Epidemiologists	Doctoral or professional degree	None	None	\$34.11
19-1099	Life Scientists, All Other	Bachelor's degree	None	None	\$31.75
19-2012	Physicists	Doctoral or professional degree	None	None	\$56.69
19-2031	Chemists	Bachelor's degree	None	None	\$33.75
19-2032	Materials Scientists	Bachelor's degree	None	None	\$49.50
19-2041	Environmental Scientists and Specialists, Including Health	Bachelor's degree	None	None	\$37.24
19-2042	Geoscientists, Except Hydrologists and Geographers	Bachelor's degree	None	None	\$36.63
19-2043	Hydrologists	Bachelor's degree	None	None	\$38.61
19-2099	Physical Scientists, All Other	Bachelor's degree	None	None	\$52.85
19-3011	Economists	Master's degree	None	None	\$46.49
19-3022	Survey Researchers	Master's degree	None	None	\$29.54
19-3031	Clinical, Counseling, and School Psychologists	Doctoral or professional degree	None	Internship/residency	\$35.86
19-3039	Psychologists, All Other	Master's degree	None	Internship/residency	\$48.19
19-3051	Urban and Regional Planners	Master's degree	None	None	\$33.97
19-3091	Anthropologists and Archeologists	Master's degree	None	None	\$27.82
19-3099	Social Scientists and Related Workers, All Other	Bachelor's degree	None	None	\$37.19
19-4011	Agricultural and Food Science Technicians	Associate's degree	None	Moderate-term on-the-job training	\$20.14
19-4021	Biological Technicians	Bachelor's degree	None	None	\$21.30
19-4031	Chemical Technicians	Associate's degree	None	Moderate-term on-the-job training	\$23.08
19-4041	Geological and Petroleum Technicians	Associate's degree	None	Moderate-term on-the-job training	\$24.98
19-4051	Nuclear Technicians	Associate's degree	None	Moderate-term on-the-job training	\$36.65
19-4061	Social Science Research Assistants	Bachelor's degree	None	None	\$21.34
19-4091	Environmental Science and Protection Technicians, Including Health	Associate's degree	None	None	\$21.52
19-4092	Forensic Science Technicians	Bachelor's degree	None	Moderate-term on-the-job training	\$32.03
19-4093	Forest and Conservation Technicians	Associate's degree	None	None	\$19.66
19-4099	Life, Physical, and Social Science Technicians, All Other	Associate's degree	None	None	\$25.54
21-0000	Community and Social Service Occupations				\$21.31
21-1012	Educational, Guidance, School, and Vocational Counselors	Master's degree	None	None	\$25.81
21-1013	Marriage and Family Therapists	Master's degree	None	Internship/residency	\$22.90
21-1015	Rehabilitation Counselors	Master's degree	None	None	\$16.33
21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	Bachelor's degree	None	None	\$21.94
21-1019	Counselors, All Other	Master's degree	None	None	\$23.92
21-1021	Child, Family, and School Social Workers	Bachelor's degree	None	None	\$21.68
21-1022	Healthcare Social Workers	Master's degree	None	Internship/residency	\$26.77
21-1023	Mental Health and Substance Abuse Social Workers	Master's degree	None	Internship/residency	\$20.93
21-1029	Social Workers, All Other	Bachelor's degree	None	None	\$25.17
21-1091	Health Educators	Bachelor's degree	None	None	\$26.21
21-1092	Probation Officers and Correctional Treatment Specialists	Bachelor's degree	None	Short-term on-the-job training	\$24.12
21-1093	Social and Human Service Assistants	High school diploma or equivalent	None	Short-term on-the-job training	\$16.36
21-1094	Community Health Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$17.80
21-1099	Community and Social Service Specialists, All Other	Bachelor's degree	None	None	\$20.29
21-2011	Clergy	Bachelor's degree	None	Moderate-term on-the-job training	\$22.08
21-2021	Directors, Religious Activities and Education	Bachelor's degree	Less than 5 years	None	\$22.68
21-2099	Religious Workers, All Other	Bachelor's degree	None	None	\$14.84
23-0000	Legal Occupations				\$33.09
23-1011	Lawyers	Doctoral or professional degree	None	None	\$49.02
23-1012	Judicial Law Clerks	Doctoral or professional degree	None	None	\$26.07
23-1021	Administrative Law Judges, Adjudicators, and Hearing Officers	Doctoral or professional degree	5 years or more	Short-term on-the-job training	\$31.64
23-1022	Arbitrators, Mediators, and Conciliators	Bachelor's degree	Less than 5 years	Moderate-term on-the-job training	\$24.81
23-1023	Judges, Magistrate Judges, and Magistrates	Doctoral or professional degree	5 years or more	Short-term on-the-job training	\$40.01
23-2011	Paralegals and Legal Assistants	Associate's degree	None	None	\$21.25
23-2091	Court Reporters	Postsecondary non-degree award	None	Short-term on-the-job training	\$38.99 *
23-2093	Title Examiners, Abstractors, and Searchers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.30
23-2099	Legal Support Workers, All Other	Associate's degree	None	None	\$25.21
25-0000	Education, Training, and Library Occupations				\$25.97
25-1011	Business Teachers, Postsecondary	Doctoral or professional degree	None	None	\$92,010 **
25-1021	Computer Science Teachers, Postsecondary	Doctoral or professional degree	None	None	\$88,070 **
25-1022	Mathematical Science Teachers, Postsecondary	Doctoral or professional degree	None	None	\$75,660 **

Ohio Typical Occupational* Educational and Training Requirements

SOC Code¹	Occupational Title**	Typical Education Required for Entry	Commonly Required Work Experience in Related Occupation	Typical On-the-Job Training to Obtain Competency	Median Wage*** May 2019
25-1031	Architecture Teachers, Postsecondary	Doctoral or professional degree	None	None	\$82,630 **
25-1032	Engineering Teachers, Postsecondary	Doctoral or professional degree	None	None	\$102,800 **
25-1042	Biological Science Teachers, Postsecondary	Doctoral or professional degree	None	None	\$80,260 **
25-1051	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	Doctoral or professional degree	None	None	\$87,410 **
25-1052	Chemistry Teachers, Postsecondary	Doctoral or professional degree	None	None	\$80,410 **
25-1054	Physics Teachers, Postsecondary	Doctoral or professional degree	None	None	\$84,820 **
25-1061	Anthropology and Archeology Teachers, Postsecondary	Doctoral or professional degree	None	None	\$86,450 **
25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary	Doctoral or professional degree	None	None	\$72,430 **
25-1063	Economics Teachers, Postsecondary	Doctoral or professional degree	None	None	\$103,800 **
25-1064	Geography Teachers, Postsecondary	Doctoral or professional degree	None	None	\$86,050 **
25-1065	Political Science Teachers, Postsecondary	Doctoral or professional degree	None	None	\$80,190 **
25-1066	Psychology Teachers, Postsecondary	Doctoral or professional degree	None	None	\$76,630 **
25-1067	Sociology Teachers, Postsecondary	Doctoral or professional degree	None	None	\$78,090 **
25-1069	Social Sciences Teachers, Postsecondary, All Other	Doctoral or professional degree	None	None	\$72,650 **
25-1071	Health Specialties Teachers, Postsecondary	Doctoral or professional degree	Less than 5 years	None	\$107,960 **
25-1072	Nursing Instructors and Teachers, Postsecondary	Doctoral or professional degree	Less than 5 years	None	\$73,730 **
25-1081	Education Teachers, Postsecondary	Doctoral or professional degree	Less than 5 years	None	\$63,740 **
25-1082	Library Science Teachers, Postsecondary	Doctoral or professional degree	None	None	\$65,220 **
25-1111	Criminal Justice and Law Enforcement Teachers, Postsecondary	Doctoral or professional degree	None	None	\$56,830 **
25-1112	Law Teachers, Postsecondary	Doctoral or professional degree	Less than 5 years	None	\$112,040 **
25-1113	Social Work Teachers, Postsecondary	Doctoral or professional degree	None	None	\$69,070 **
25-1121	Art, Drama, and Music Teachers, Postsecondary	Master's degree	None	None	\$70,370 **
25-1122	Communications Teachers, Postsecondary	Doctoral or professional degree	None	None	\$67,520 **
25-1123	English Language and Literature Teachers, Postsecondary	Doctoral or professional degree	None	None	\$66,560 **
25-1124	Foreign Language and Literature Teachers, Postsecondary	Doctoral or professional degree	None	None	\$69,300 **
25-1125	History Teachers, Postsecondary	Doctoral or professional degree	None	None	\$74,010 **
25-1126	Philosophy and Religion Teachers, Postsecondary	Doctoral or professional degree	None	None	\$72,450 **
25-1192	Home Economics Teachers, Postsecondary	Master's degree	None	None	\$76,480 ***
25-1193	Recreation and Fitness Studies Teachers, Postsecondary	Doctoral or professional degree	None	None	\$61,640 **
25-1194	Vocational Education Teachers, Postsecondary	Bachelor's degree	Less than 5 years	None	\$29.34
25-2011	Preschool Teachers, Except Special Education	Associate's degree	None	None	\$13.06
25-2012	Kindergarten Teachers, Except Special Education	Bachelor's degree	None	None	\$57,460 **
25-2021	Elementary School Teachers, Except Special Education	Bachelor's degree	None	None	\$64,470 **
25-2022	Middle School Teachers, Ex. Special and Career/Tech. Education	Bachelor's degree	None	None	\$63,480 **
25-2023	Career/Technical Education Teachers, Middle School	Bachelor's degree	Less than 5 years	None	\$63,450 **
25-2031	Secondary School Teachers, Ex. Special and Career/Tech. Education	Bachelor's degree	None	None	\$64,370 **
25-2032	Career/Technical Education Teachers, Secondary School	Bachelor's degree	Less than 5 years	None	\$71,730 **
25-2051	Special Education Teachers, Preschool	Bachelor's degree	None	None	\$58,950 **
25-2052	Special Education Teachers, Kindergarten and Elementary School	Bachelor's degree	None	None	\$56,670 **
25-2053	Special Education Teachers, Middle School	Bachelor's degree	None	None	\$59,210
25-2054	Special Education Teachers, Secondary School	Bachelor's degree	None	None	\$56,720
25-2059	Special Education Teachers, All Other	Bachelor's degree	None	None	\$38,410 **
25-3011	Adult Basic and Secondary Education and Literacy Teachers and Instructors	Bachelor's degree	None	None	\$23.42
25-3021	Self-Enrichment Education Teachers	High school diploma or equivalent	Less than 5 years	None	\$15.64
25-3097	Teachers and Instructors, All Other, Except Substitute Teachers	Bachelor's degree	None	None	\$39,860 **
25-3098	Substitute Teachers	Bachelor's degree	None	None	\$13.41
25-4011	Archivists	Master's degree	None	None	\$23.74
25-4012	Curators	Master's degree	None	None	\$23.78
25-4013	Museum Technicians and Conservators	Bachelor's degree	None	None	\$19.72
25-4021	Librarians	Master's degree	None	None	\$24.25
25-4031	Library Technicians	Postsecondary non-degree award	None	None	\$14.48
25-9031	Instructional Coordinators	Master's degree	5 years or more	None	\$32.00
25-9041	Teacher Assistants	Some college, no degree	None	None	\$27,070
25-9099	Education, Training, and Library Workers, All Other	Bachelor's degree	None	None	\$17.25
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations				\$20.88
27-1011	Art Directors	Bachelor's degree	5 years or more	None	\$38.46
27-1012	Craft Artists	No formal educational credential	None	Long-term on-the-job training	\$17.09
27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	Bachelor's degree	None	Long-term on-the-job training	\$21.96
27-1014	Multimedia Artists and Animators	Bachelor's degree	None	None	\$25.16
27-1021	Commercial and Industrial Designers	Bachelor's degree	None	None	\$30.75
27-1023	Floral Designers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$11.50
27-1024	Graphic Designers	Bachelor's degree	None	None	\$23.25
27-1025	Interior Designers	Bachelor's degree	None	None	\$26.06
27-1026	Merchandise Displayers and Window Trimmers	High school diploma or equivalent	None	Short-term on-the-job training	\$15.48
27-1027	Set and Exhibit Designers	Bachelor's degree	None	None	\$23.11
27-1029	Designers, All Other	Bachelor's degree	None	None	\$24.44
27-2011	Actors	Some college, no degree	None	Long-term on-the-job training	\$13.90
27-2012	Producers and Directors	Bachelor's degree	Less than 5 years	None	\$25.10
27-2021	Athletes and Sports Competitors	No formal educational credential	None	Long-term on-the-job training	\$94,300 **
27-2022	Coaches and Scouts	Bachelor's degree	None	None	\$24,630 **
27-2023	Umpires, Referees, and Other Sports Officials	High school diploma or equivalent	None	Moderate-term on-the-job training	\$24,500 **
27-2031	Dancers	No formal educational credential	None	Long-term on-the-job training	\$24.33 *
27-2032	Choreographers	High school diploma or equivalent	5 years or more	Long-term on-the-job training	\$19.89
27-2041	Music Directors and Composers	Bachelor's degree	Less than 5 years	None	\$20.72
27-2042	Musicians and Singers	No formal educational credential	None	Long-term on-the-job training	\$26.72
27-2099	Entertainers and Performers, Sports and Related Workers, All Other	No formal educational credential	None	Short-term on-the-job training	\$19.33
27-3011	Radio and Television Announcers	Bachelor's degree	None	None	\$16.05
27-3012	Public Address System and Other Announcers	High school diploma or equivalent	None	Short-term on-the-job training	\$18.91
27-3021	Broadcast News Analysts	Bachelor's degree	None	None	▲
27-3022	Reporters and Correspondents	Bachelor's degree	None	None	▲
27-3031	Public Relations Specialists	Bachelor's degree	None	None	\$28.45
27-3041	Editors	Bachelor's degree	Less than 5 years	None	\$25.99
27-3042	Technical Writers	Bachelor's degree	Less than 5 years	Short-term on-the-job training	\$30.21
27-3043	Writers and Authors	Bachelor's degree	None	Long-term on-the-job training	\$24.42
27-3091	Interpreters and Translators	Bachelor's degree	None	None	\$24.41
27-3099	Media and Communication Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$18.91
27-4011	Audio and Video Equipment Technicians	Postsecondary non-degree award	None	Short-term on-the-job training	\$19.40
27-4012	Broadcast Technicians	Associate's degree	None	Short-term on-the-job training	\$20.84
27-4014	Sound Engineering Technicians	Postsecondary non-degree award	None	Short-term on-the-job training	\$24.54
27-4021	Photographers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.60
27-4031	Camera Operators, Television, Video, and Motion Picture	Bachelor's degree	None	None	\$24.95
27-4032	Film and Video Editors	Bachelor's degree	None	None	\$26.91

Ohio Typical Occupational* Educational and Training Requirements

SOC Code*	Occupational Title**	Typical Education Required for Entry	Commonly Required Work Experience in Related Occupation	Typical On-the-Job Training to Obtain Competency	Median Wage*** May 2019
27-4099	Media and Communication Equipment Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$32.22
29-0000	Healthcare Practitioners and Technical Occupations				\$29.83
29-1011	Chiropractors	Doctoral or professional degree	None	None	\$39.19
29-1021	Dentists, General	Doctoral or professional degree	None	None	\$88.94
29-1023	Orthodontists	Doctoral or professional degree	None	Internship/residency	▲
29-1029	Dentists, All Other Specialists	Doctoral or professional degree	None	Internship/residency	\$60.51
29-1031	Dietitians and Nutritionists	Bachelor's degree	None	Internship/residency	\$27.99
29-1041	Optometrists	Doctoral or professional degree	None	None	\$55.41
29-1051	Pharmacists	Doctoral or professional degree	None	None	\$58.81
29-1061	Anesthesiologists	Doctoral or professional degree	None	Internship/residency	▲
29-1062	Family and General Practitioners	Doctoral or professional degree	None	Internship/residency	\$86.64
29-1063	Internists, General	Doctoral or professional degree	None	Internship/residency	\$91.19
29-1064	Obstetricians and Gynecologists	Doctoral or professional degree	None	Internship/residency	▲
29-1065	Pediatricians, General	Doctoral or professional degree	None	Internship/residency	\$75.47
29-1066	Psychiatrists	Doctoral or professional degree	None	Internship/residency	▲
29-1067	Surgeons	Doctoral or professional degree	None	Internship/residency	▲
29-1069	Physicians and Surgeons, All Other	Doctoral or professional degree	None	Internship/residency	▲
29-1071	Physician Assistants	Master's degree	None	None	\$52.09
29-1081	Podiatrists	Doctoral or professional degree	None	Internship/residency	\$66.69
29-1122	Occupational Therapists	Master's degree	None	None	\$40.54
29-1123	Physical Therapists	Doctoral or professional degree	None	None	\$42.19
29-1124	Radiation Therapists	Associate's degree	None	None	\$39.17
29-1125	Recreational Therapists	Bachelor's degree	None	None	\$21.76
29-1126	Respiratory Therapists	Associate's degree	None	None	\$27.69
29-1127	Speech-Language Pathologists	Master's degree	None	Internship/residency	\$35.71
29-1128	Exercise Physiologists	Bachelor's degree	None	None	\$23.33
29-1129	Therapists, All Other	Bachelor's degree	None	None	\$34.95
29-1131	Veterinarians	Doctoral or professional degree	None	None	\$46.65
29-1141	Registered Nurses	Bachelor's degree	None	None	\$31.63
29-1151	Nurse Anesthetists	Master's degree	None	None	\$80.80
29-1161	Nurse Midwives	Master's degree	None	None	\$46.98
29-1171	Nurse Practitioners	Master's degree	None	None	\$49.75
29-1181	Audiologists	Doctoral or professional degree	None	None	\$33.75
29-1199	Health Diagnosing and Treating Practitioners, All Other	Master's degree	None	None	\$39.17
29-2010	Clinical Laboratory Technologists and Technicians	Bachelor's degree	None	None	\$25.50
29-2021	Dental Hygienists	Associate's degree	None	None	\$33.03
29-2031	Cardiovascular Technologists and Technicians	Associate's degree	None	None	\$25.98
29-2032	Diagnostic Medical Sonographers	Associate's degree	None	None	\$31.75
29-2033	Nuclear Medicine Technologists	Associate's degree	None	None	\$34.97
29-2034	Radiologic Technologists	Associate's degree	None	None	\$27.95
29-2035	Magnetic Resonance Imaging Technologists	Associate's degree	Less than 5 years	None	\$32.13
29-2041	Emergency Medical Technicians and Paramedics	Postsecondary non-degree award	None	None	\$15.57
29-2051	Dietetic Technicians	Associate's degree	None	None	\$12.72
29-2052	Pharmacy Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.52
29-2053	Psychiatric Technicians	Postsecondary non-degree award	Less than 5 years	Short-term on-the-job training	\$15.26
29-2054	Respiratory Therapy Technicians	Associate's degree	None	None	▲
29-2055	Surgical Technologists	Postsecondary non-degree award	None	None	\$22.55
29-2056	Veterinary Technologists and Technicians	Associate's degree	None	None	\$16.40
29-2057	Ophthalmic Medical Technicians	Postsecondary non-degree award	None	None	\$17.98
29-2061	Licensed Practical and Licensed Vocational Nurses	Postsecondary non-degree award	None	None	\$21.62
29-2071	Medical Records and Health Information Technicians	Postsecondary non-degree award	None	None	▲
29-2081	Opticians, Dispensing	High school diploma or equivalent	None	Long-term on-the-job training	\$20.29
29-2091	Orthotists and Prosthetists	Master's degree	None	Internship/residency	\$29.94
29-2092	Hearing Aid Specialists	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.17
29-2099	Health Technologists and Technicians, All Other	Postsecondary non-degree award	None	None	▲
29-9011	Occupational Health and Safety Specialists	Bachelor's degree	None	None	\$35.40
29-9012	Occupational Health and Safety Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$24.87
29-9091	Athletic Trainers	Bachelor's degree	None	None	\$47,660 **
29-9092	Genetic Counselors	Master's degree	None	None	\$37.77
29-9099	Healthcare Practitioners and Technical Workers, All Other	Postsecondary non-degree award	None	None	\$31.29
31-0000	Healthcare Support Occupations				\$12.85
31-1011	Home Health Aides	High school diploma or equivalent	None	Short-term on-the-job training	\$11.08
31-1013	Psychiatric Aides	High school diploma or equivalent	None	Short-term on-the-job training	\$17.24
31-1014	Nursing Assistants	Postsecondary non-degree award	None	None	\$13.61
31-1015	Orderlies	High school diploma or equivalent	None	Short-term on-the-job training	\$13.69
31-2011	Occupational Therapy Assistants	Associate's degree	None	None	\$28.71
31-2012	Occupational Therapy Aides	High school diploma or equivalent	None	Short-term on-the-job training	\$15.36
31-2021	Physical Therapist Assistants	Associate's degree	None	None	\$28.32
31-2022	Physical Therapist Aides	High school diploma or equivalent	None	Short-term on-the-job training	\$13.19
31-9011	Massage Therapists	Postsecondary non-degree award	None	None	\$19.43
31-9091	Dental Assistants	Postsecondary non-degree award	None	None	\$18.66
31-9092	Medical Assistants	Postsecondary non-degree award	None	None	\$15.87
31-9093	Medical Equipment Preparers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.16
31-9094	Medical Transcriptionists	Postsecondary non-degree award	None	None	\$18.18
31-9095	Pharmacy Aides	High school diploma or equivalent	None	Short-term on-the-job training	\$12.00
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	High school diploma or equivalent	None	Short-term on-the-job training	\$12.49
31-9097	Phlebotomists	Postsecondary non-degree award	None	None	\$16.52
31-9099	Healthcare Support Workers, All Other	High school diploma or equivalent	None	None	\$20.29
33-0000	Protective Service Occupations				\$20.54
33-1011	FL Supervisors of Correctional Officers	High school diploma or equivalent	Less than 5 years	None	\$33.30
33-1012	FL Supervisors of Police and Detectives	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$40.26
33-1021	FL Supervisors of Fire Fighting and Prevention Workers	Postsecondary non-degree award	Less than 5 years	Moderate-term on-the-job training	\$36.76
33-1099	FL Supervisors of Protective Service Workers, All Other	High school diploma or equivalent	Less than 5 years	None	\$18.78
33-2011	Firefighters	Postsecondary non-degree award	None	Long-term on-the-job training	\$23.05
33-2021	Fire Inspectors and Investigators	Postsecondary non-degree award	5 years or more	Moderate-term on-the-job training	\$28.42
33-3011	Bailiffs	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.70
33-3012	Correctional Officers and Jailers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.96
33-3021	Detectives and Criminal Investigators	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$34.74
33-3041	Parking Enforcement Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$19.32
33-3051	Police and Sheriff's Patrol Officers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$30.19
33-9011	Animal Control Workers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.71
33-9021	Private Detectives and Investigators	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$22.93

Ohio Typical Occupational* Educational and Training Requirements

SOC Code¹	Occupational Title**	Typical Education Required for Entry	Commonly Required Work Experience in Related Occupation	Typical On-the-Job Training to Obtain Competency	Median Wage*** May 2019
33-9031	Gaming Surveillance Officers and Gaming Investigators	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$28.93
33-9032	Security Guards	High school diploma or equivalent	None	Short-term on-the-job training	\$13.75
33-9091	Crossing Guards	No formal educational credential	None	Short-term on-the-job training	\$12.62
33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	No formal educational credential	None	Short-term on-the-job training	\$9.49
33-9093	Transportation Security Screeners	High school diploma or equivalent	None	Short-term on-the-job training	\$19.64
33-9099	Protective Service Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$13.99
35-0000	Food Preparation and Serving Related Occupations				\$9.93
35-1011	Chefs and Head Cooks	High school diploma or equivalent	5 years or more	None	\$21.19
35-1012	FL Supervisors of Food Preparation and Serving Workers	High school diploma or equivalent	Less than 5 years	None	\$14.72
35-2011	Cooks, Fast Food	No formal educational credential	None	Short-term on-the-job training	\$10.14
35-2012	Cooks, Institution and Cafeteria	No formal educational credential	None	Short-term on-the-job training	\$13.08
35-2013	Cooks, Private Household	Postsecondary non-degree award	Less than 5 years	None	\$18.21 *
35-2014	Cooks, Restaurant	No formal educational credential	Less than 5 years	Moderate-term on-the-job training	\$12.04
35-2015	Cooks, Short Order	No formal educational credential	None	Short-term on-the-job training	\$9.99
35-2019	Cooks, All Other	No formal educational credential	None	Moderate-term on-the-job training	\$9.68
35-2021	Food Preparation Workers	No formal educational credential	None	Short-term on-the-job training	\$10.81
35-3011	Bartenders	No formal educational credential	None	Short-term on-the-job training	\$9.45
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	No formal educational credential	None	Short-term on-the-job training	▲
35-3022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	No formal educational credential	None	Short-term on-the-job training	▲
35-3031	Waiters and Waitresses	No formal educational credential	None	Short-term on-the-job training	\$9.59
35-3041	Food Servers, Nonrestaurant	No formal educational credential	None	Short-term on-the-job training	\$10.37
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	No formal educational credential	None	Short-term on-the-job training	\$9.57
35-9021	Dishwashers	No formal educational credential	None	Short-term on-the-job training	\$10.00
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	No formal educational credential	None	Short-term on-the-job training	\$9.51
35-9099	Food Preparation and Serving Related Workers, All Other	No formal educational credential	None	Short-term on-the-job training	\$9.51
37-0000	Building and Grounds Cleaning and Maintenance Occupations				\$12.78
37-1011	FL Supervisors of Housekeeping and Janitorial Workers	High school diploma or equivalent	Less than 5 years	None	\$20.00
37-1012	FL Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	High school diploma or equivalent	Less than 5 years	None	\$22.86
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	No formal educational credential	None	Short-term on-the-job training	\$12.52
37-2012	Maids and Housekeeping Cleaners	No formal educational credential	None	Short-term on-the-job training	\$10.85
37-3011	Landscaping and Groundskeeping Workers	No formal educational credential	None	Short-term on-the-job training	\$14.07
37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.37
37-3013	Tree Trimmers and Pruners	High school diploma or equivalent	None	Short-term on-the-job training	\$19.50
37-3019	Grounds Maintenance Workers, All Other	No formal educational credential	None	Short-term on-the-job training	\$13.28
39-0000	Personal Care and Service Occupations				\$11.20
39-1010	FL Supervisors of Gaming Workers	High school diploma or equivalent	Less than 5 years	None	\$25.22
39-1021	FL Supervisors of Personal Service Workers	High school diploma or equivalent	Less than 5 years	None	\$16.84
39-2011	Animal Trainers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$12.58
39-2021	Nonfarm Animal Caretakers	High school diploma or equivalent	None	Short-term on-the-job training	\$10.79
39-3011	Gaming Dealers	High school diploma or equivalent	None	Short-term on-the-job training	\$9.59
39-3019	Gaming Service Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$11.35
39-3021	Motion Picture Projectionists	No formal educational credential	None	Short-term on-the-job training	\$11.90
39-3031	Ushers, Lobby Attendants, and Ticket Takers	No formal educational credential	None	Short-term on-the-job training	\$9.43
39-3091	Amusement and Recreation Attendants	No formal educational credential	None	Short-term on-the-job training	\$9.47
39-3093	Locker Room, Coatroom, and Dressing Room Attendants	High school diploma or equivalent	None	Short-term on-the-job training	\$10.03
39-4011	Embalmers	Associate's degree	None	Long-term on-the-job training	\$25.26
39-4021	Funeral Attendants	High school diploma or equivalent	None	Short-term on-the-job training	\$13.30
39-4031	Morticians, Undertakers, and Funeral Directors	Associate's degree	None	Long-term on-the-job training	\$26.57
39-5012	Hairdressers, Hairstylists, and Cosmetologists	Postsecondary non-degree award	None	None	\$10.70
39-5092	Manicurists and Pedicurists	Postsecondary non-degree award	None	None	\$10.75
39-5093	Shampooers	No formal educational credential	None	Short-term on-the-job training	\$9.65
39-5094	Skincare Specialists	Postsecondary non-degree award	None	None	\$16.43
39-6011	Baggage Porters and Bellhops	High school diploma or equivalent	None	Short-term on-the-job training	\$10.12
39-6012	Concierges	High school diploma or equivalent	None	Moderate-term on-the-job training	\$13.62
39-7010	Tour and Travel Guides	High school diploma or equivalent	None	Moderate-term on-the-job training	\$10.77
39-9011	Childcare Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$10.65
39-9021	Personal Care Aides	High school diploma or equivalent	None	Short-term on-the-job training	\$11.08
39-9031	Fitness Trainers and Aerobics Instructors	High school diploma or equivalent	None	Short-term on-the-job training	\$14.73
39-9032	Recreation Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$11.38
39-9041	Residential Advisors	High school diploma or equivalent	None	Short-term on-the-job training	\$13.47
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 and Related Occupations				\$13.61
41-1011	FL Supervisors of Retail Sales Workers	High school diploma or equivalent	Less than 5 years	None	\$18.52
41-1012	FL Supervisors of Non-Retail Sales Workers	High school diploma or equivalent	Less than 5 years	None	\$34.72
41-2011	Cashiers	No formal educational credential	None	Short-term on-the-job training	\$10.29
41-2012	Gaming Change Persons and Booth Cashiers	No formal educational credential	None	Short-term on-the-job training	\$11.80
41-2021	Counter and Rental Clerks	No formal educational credential	None	Short-term on-the-job training	\$12.59
41-2022	Parts Salespersons	No formal educational credential	None	Moderate-term on-the-job training	\$14.27
41-2031	Retail Salespersons	No formal educational credential	None	Short-term on-the-job training	\$11.36
41-3011	Advertising Sales Agents	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.50
41-3021	Insurance Sales Agents	High school diploma or equivalent	None	Moderate-term on-the-job training	\$24.86
41-3031	Securities, Commodities, and Financial Services Sales Agents	Bachelor's degree	None	Moderate-term on-the-job training	\$26.22
41-3041	Travel Agents	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.63
41-3099	Sales Representatives, Services, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$25.02
41-4011	Sales Rep., Wholesale & Mfg. Tech./Sci. Prod.	Bachelor's degree	None	Moderate-term on-the-job training	\$38.21
41-4012	Sales Rep., Wholesale/Mfg. ex. Tech./Sci. Prod.	High school diploma or equivalent	None	Moderate-term on-the-job training	\$27.95
41-9011	Demonstrators and Product Promoters	No formal educational credential	None	Short-term on-the-job training	\$14.46
41-9021	Real Estate Brokers	High school diploma or equivalent	Less than 5 years	None	\$25.75
41-9022	Real Estate Sales Agents	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.22
41-9031	Sales Engineers	Bachelor's degree	None	Moderate-term on-the-job training	\$41.73
41-9041	Telemarketers	No formal educational credential	None	Short-term on-the-job training	\$11.69
41-9091	Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	No formal educational credential	None	Short-term on-the-job training	\$12.54
41-9099	Sales and Related Workers, All Other	High school diploma or equivalent	None	None	\$14.03
43-0000	Office and Administrative Support Occupations				\$17.62
43-1011	FL Supervisors of Office and Administrative Support Workers	High school diploma or equivalent	Less than 5 years	None	\$26.43
43-2011	Switchboard Operators, Including Answering Service	High school diploma or equivalent	None	Short-term on-the-job training	\$13.89
43-3011	Bill and Account Collectors	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.95
43-3021	Billing and Posting Clerks	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	\$18.75
43-3041	Gaming Cage Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$13.07
43-3051	Payroll and Timekeeping Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.38
43-3061	Procurement Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.36

Ohio Typical Occupational* Educational and Training Requirements

SOC Code*	Occupational Title**	Typical Education Required for Entry	Commonly Required Work Experience in Related Occupation	Typical On-the-Job Training to Obtain Competency	Median Wage*** May 2019
43-3071	Tellers	High school diploma or equivalent	None	Short-term on-the-job training	\$14.40
43-3099	Financial Clerks, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$20.06
43-4011	Brokerage Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.79
43-4021	Correspondence Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$17.40
43-4031	Court, Municipal, and License Clerks	High school diploma or equivalent	None	Long-term on-the-job training	\$17.93
43-4041	Credit Authorizers, Checkers, and Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.29
43-4051	Customer Service Representatives	High school diploma or equivalent	None	Short-term on-the-job training	\$16.70
43-4061	Eligibility Interviewers, Government Programs	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.92
43-4071	File Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$16.72
43-4081	Hotel, Motel, and Resort Desk Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$10.64
43-4111	Interviewers, Except Eligibility and Loan	High school diploma or equivalent	None	Short-term on-the-job training	\$15.11
43-4121	Library Assistants, Clerical	High school diploma or equivalent	None	Short-term on-the-job training	\$12.07
43-4131	Loan Interviewers and Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$19.10
43-4141	New Accounts Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.46
43-4151	Order Clerks	Some college, no degree	None	Short-term on-the-job training	\$15.51
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	Associate's degree	None	None	\$18.80
43-4171	Receptionists and Information Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$13.36
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$20.07
43-4199	Information and Record Clerks, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$20.69
43-5011	Cargo and Freight Agents	High school diploma or equivalent	None	Short-term on-the-job training	\$19.93
43-5021	Couriers and Messengers	High school diploma or equivalent	None	Short-term on-the-job training	\$13.80
43-5031	Police, Fire, and Ambulance Dispatchers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.30
43-5032	Dispatchers, Except Police, Fire, and Ambulance	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.70
43-5041	Meter Readers, Utilities	High school diploma or equivalent	None	Short-term on-the-job training	\$19.52
43-5051	Postal Service Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$23.16
43-5052	Postal Service Mail Carriers	High school diploma or equivalent	None	Short-term on-the-job training	\$23.31
43-5053	Postal Service Mail Sorters, Processors, and Processing Machine Operators	High school diploma or equivalent	None	Short-term on-the-job training	\$24.12
43-5061	Production, Planning, and Expediting Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.92
43-5071	Shipping, Receiving, and Traffic Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$16.27
43-5081	Stock Clerks and Order Fillers	High school diploma or equivalent	None	Short-term on-the-job training	\$12.57
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	High school diploma or equivalent	None	Short-term on-the-job training	\$17.15
43-6011	Executive Secretaries and Executive Administrative Assistants	High school diploma or equivalent	Less than 5 years	None	\$27.59
43-6012	Legal Secretaries	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.83
43-6013	Medical Secretaries	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.72
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	High school diploma or equivalent	None	Short-term on-the-job training	\$17.42
43-9011	Computer Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$38.52
43-9021	Data Entry Keyers	High school diploma or equivalent	None	Short-term on-the-job training	\$15.60
43-9022	Word Processors and Typists	High school diploma or equivalent	None	Short-term on-the-job training	\$18.71
43-9041	Insurance Claims and Policy Processing Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.27
43-9051	Mail Clerks and Mail Machine Operators, Except Postal Service	High school diploma or equivalent	None	Short-term on-the-job training	\$15.42
43-9061	Office Clerks, General	High school diploma or equivalent	None	Short-term on-the-job training	\$16.49
43-9071	Office Machine Operators, Except Computer	High school diploma or equivalent	None	Short-term on-the-job training	\$15.64
43-9111	Statistical Assistants	Bachelor's degree	None	None	\$21.94
43-9199	Office and Administrative Support Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$18.66
45-0000	Farming, Fishing, and Forestry Occupations				\$14.57
45-1011	FL Supervisors of Farming, Fishing, and Forestry Workers	High school diploma or equivalent	Less than 5 years	None	\$27.91
45-2011	Agricultural Inspectors	Bachelor's degree	None	Moderate-term on-the-job training	\$24.45
45-2041	Graders and Sorters, Agricultural Products	No formal educational credential	None	Short-term on-the-job training	\$11.98
45-2091	Agricultural Equipment Operators	No formal educational credential	None	Moderate-term on-the-job training	\$18.63
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	No formal educational credential	None	Short-term on-the-job training	\$11.59
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	No formal educational credential	None	Short-term on-the-job training	\$13.57
45-4022	Logging Equipment Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.75
47-0000	Construction and Extraction Occupations				\$23.67
47-1011	FL Supervisors of Construction Trades and Extraction Workers	High school diploma or equivalent	5 years or more	None	\$31.91
47-2011	Boilermakers	High school diploma or equivalent	None	Apprenticeship	\$35.94
47-2021	Brickmasons and Blockmasons	High school diploma or equivalent	None	Apprenticeship	\$26.53
47-2022	Stonemasons	High school diploma or equivalent	None	Apprenticeship	\$18.14
47-2031	Carpenters	High school diploma or equivalent	None	Apprenticeship	\$23.34
47-2041	Carpet Installers	No formal educational credential	None	Short-term on-the-job training	\$17.25
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	No formal educational credential	None	Moderate-term on-the-job training	\$20.83
47-2044	Tile and Marble Setters	No formal educational credential	None	Long-term on-the-job training	\$19.26
47-2051	Cement Masons and Concrete Finishers	No formal educational credential	None	Moderate-term on-the-job training	\$23.32
47-2061	Construction Laborers	No formal educational credential	None	Short-term on-the-job training	\$20.04
47-2071	Paving, Surfacing, and Tamping Equipment Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.86
47-2073	Operating Engineers and Other Construction Equipment Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$24.79
47-2081	Drywall and Ceiling Tile Installers	No formal educational credential	None	Moderate-term on-the-job training	\$21.86
47-2082	Tapers	No formal educational credential	None	Moderate-term on-the-job training	\$28.31
47-2111	Electricians	High school diploma or equivalent	None	Apprenticeship	\$25.43
47-2121	Glaziers	High school diploma or equivalent	None	Apprenticeship	\$21.89
47-2131	Insulation Workers, Floor, Ceiling, and Wall	No formal educational credential	None	Short-term on-the-job training	\$19.81
47-2141	Painters, Construction and Maintenance	No formal educational credential	None	Moderate-term on-the-job training	\$19.98
47-2142	Paperhangers	No formal educational credential	None	Long-term on-the-job training	\$19.68
47-2151	Pipelayers	No formal educational credential	None	Short-term on-the-job training	\$22.99
47-2152	Plumbers, Pipefitters, and Steamfitters	High school diploma or equivalent	None	Apprenticeship	\$26.58
47-2161	Plasterers and Stucco Masons	No formal educational credential	None	Long-term on-the-job training	\$24.56
47-2171	Reinforcing Iron and Rebar Workers	High school diploma or equivalent	None	Apprenticeship	\$30.05
47-2181	Roofers	No formal educational credential	None	Moderate-term on-the-job training	\$19.39
47-2211	Sheet Metal Workers	High school diploma or equivalent	None	Apprenticeship	\$26.93
47-2221	Structural Iron and Steel Workers	High school diploma or equivalent	None	Apprenticeship	\$28.98
47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	No formal educational credential	None	Short-term on-the-job training	\$18.55
47-3012	Helpers--Carpenters	No formal educational credential	None	Short-term on-the-job training	\$14.36
47-3013	Helpers--Electricians	High school diploma or equivalent	None	Short-term on-the-job training	\$14.74
47-3015	Helpers--Pipefitters, Plumbers, Pipefitters, and Steamfitters	High school diploma or equivalent	None	Short-term on-the-job training	\$14.61
47-3019	Helpers, Construction Trades, All Other	No formal educational credential	None	Short-term on-the-job training	\$14.90
47-4011	Construction and Building Inspectors	High school diploma or equivalent	5 years or more	Moderate-term on-the-job training	\$28.97
47-4021	Elevator Installers and Repairers	High school diploma or equivalent	None	Apprenticeship	\$43.99
47-4031	Fence Erectors	No formal educational credential	None	Moderate-term on-the-job training	\$18.05
47-4041	Hazardous Materials Removal Workers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.72
47-4051	Highway Maintenance Workers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.15
47-4061	Rail-Track Laying and Maintenance Equipment Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.88
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.30
47-4090	Miscellaneous Construction and Related Workers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.74

Ohio Typical Occupational* Educational and Training Requirements

SOC Code*	Occupational Title**	Typical Education Required for Entry	Commonly Required Work Experience in Related Occupation	Typical On-the-Job Training to Obtain Competency	Median Wage*** May 2019
47-5012	Rotary Drill Operators, Oil and Gas	No formal educational credential	None	Moderate-term on-the-job training	\$21.98
47-5013	Service Unit Operators, Oil, Gas, and Mining	No formal educational credential	None	Moderate-term on-the-job training	\$24.58
47-5021	Earth Drillers, Except Oil and Gas	High school diploma or equivalent	None	Moderate-term on-the-job training	▲
47-5041	Continuous Mining Machine Operators	No formal educational credential	None	Moderate-term on-the-job training	\$26.68
47-5071	Roustabouts, Oil and Gas	No formal educational credential	None	Moderate-term on-the-job training	\$18.67
47-5081	Helpers--Extraction Workers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.05
49-0000	Installation, Maintenance, and Repair Occupations				\$21.77
49-1011	FL Supervisors of Mechanics, Installers, and Repairers	High school diploma or equivalent	Less than 5 years	None	\$30.99
49-2011	Computer, Automated Teller, and Office Machine Repairers	Some college, no degree	None	Short-term on-the-job training	\$17.33
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairers	Associate's degree	None	Moderate-term on-the-job training	\$27.02
49-2022	Telecommunications Equipment Installers and Repairers, Ex. Line Installers	Postsecondary non-degree award	None	Moderate-term on-the-job training	\$25.20
49-2091	Avionics Technicians	Associate's degree	None	None	\$27.69
49-2092	Electric Motor, Power Tool, and Related Repairers	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$21.45
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	Postsecondary non-degree award	None	Long-term on-the-job training	\$28.54
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	Postsecondary non-degree award	None	Long-term on-the-job training	\$27.57
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	Postsecondary non-degree award	Less than 5 years	Moderate-term on-the-job training	\$33.48
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.76
49-2097	Electronic Home Entertainment Equipment Installers and Repairers	Postsecondary non-degree award	None	Short-term on-the-job training	\$14.57
49-2098	Security and Fire Alarm Systems Installers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.59
49-3011	Aircraft Mechanics and Service Technicians	Postsecondary non-degree award	None	None	\$29.49
49-3021	Automotive Body and Related Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$18.56
49-3022	Automotive Glass Installers and Repairers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.07
49-3023	Automotive Service Technicians and Mechanics	Postsecondary non-degree award	None	Short-term on-the-job training	\$18.52
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	High school diploma or equivalent	None	Long-term on-the-job training	\$22.48
49-3041	Farm Equipment Mechanics and Service Technicians	High school diploma or equivalent	None	Long-term on-the-job training	\$20.70
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	High school diploma or equivalent	None	Long-term on-the-job training	\$25.92
49-3043	Rail Car Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$22.79
49-3051	Motorboat Mechanics and Service Technicians	High school diploma or equivalent	None	Long-term on-the-job training	\$17.68
49-3052	Motorcycle Mechanics	Postsecondary non-degree award	None	Short-term on-the-job training	\$16.42
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.90
49-3091	Bicycle Repairers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$12.71
49-3092	Recreational Vehicle Service Technicians	High school diploma or equivalent	None	Long-term on-the-job training	\$16.95
49-3093	Tire Repairers and Changers	High school diploma or equivalent	None	Short-term on-the-job training	\$13.82
49-9011	Mechanical Door Repairers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.55
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	High school diploma or equivalent	None	Moderate-term on-the-job training	\$33.05
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	Postsecondary non-degree award	None	Long-term on-the-job training	\$22.73
49-9031	Home Appliance Repairers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.30
49-9041	Industrial Machinery Mechanics	High school diploma or equivalent	None	Long-term on-the-job training	\$25.66
49-9043	Maintenance Workers, Machinery	High school diploma or equivalent	None	Long-term on-the-job training	\$23.11
49-9044	Millwrights	High school diploma or equivalent	None	Apprenticeship	\$28.89
49-9051	Electrical Power-Line Installers and Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$34.89
49-9052	Telecommunications Line Installers and Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$20.45
49-9062	Medical Equipment Repairers	Associate's degree	None	Moderate-term on-the-job training	\$22.41
49-9063	Musical Instrument Repairers and Tuners	High school diploma or equivalent	None	Apprenticeship	\$16.09
49-9064	Watch Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$20.44 *
49-9069	Precision Instrument and Equipment Repairers, All Other	High school diploma or equivalent	None	Long-term on-the-job training	\$26.79
49-9071	Maintenance and Repair Workers, General	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.32
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	High school diploma or equivalent	None	Short-term on-the-job training	\$17.44
49-9094	Locksmiths and Safe Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$20.89
49-9096	Riggers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.97
49-9098	Helpers--Installation, Maintenance, and Repair Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$14.24
49-9099	Installation, Maintenance, and Repair Workers, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.63
51-0000	Production Occupations				\$17.60
51-1011	FL Supervisors of Production and Operating Workers	High school diploma or equivalent	Less than 5 years	None	\$29.27
51-2021	Coil Winders, Tapers, and Finishers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.85
51-2028	Electrical/Electronic/Electromechanical Assemblers, Ex. Coil Winders, Tapers, and Finishers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.64
51-2031	Engine and Other Machine Assemblers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.63
51-2041	Structural Metal Fabricators and Fitters	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.60
51-2091	Fiberglass Laminators and Fabricators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.65
51-2098	Assemblers and Fabricators, All Other, Including Team Assemblers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.40
51-3011	Bakers	No formal educational credential	None	Long-term on-the-job training	\$12.42
51-3021	Butchers and Meat Cutters	No formal educational credential	None	Long-term on-the-job training	\$16.09
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	No formal educational credential	None	Short-term on-the-job training	\$14.37
51-3023	Slaughtering and Meat Packers	No formal educational credential	None	Short-term on-the-job training	\$13.19
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators/Tenders	No formal educational credential	None	Moderate-term on-the-job training	\$14.16
51-3092	Food Batchmakers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.65
51-3093	Food Cooking Machine Operators and Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.72
51-3099	Food Processing Workers, All Other	No formal educational credential	None	Moderate-term on-the-job training	\$11.95
51-4011	Computer-Controlled Machine Tool Operators, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$34.31 *
51-4012	Computer Numerically Controlled Mach. Tool Programmers, M/P	Postsecondary non-degree award	None	Moderate-term on-the-job training	\$44.25 *
51-4021	Extruding and Drawing Machine S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.88
51-4022	Forging Machine S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.82
51-4023	Rolling Machine S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.26
51-4031	Cutting, Punching, and Press Machine S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.89
51-4032	Drilling and Boring Machine Tool S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.60
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	\$17.28
51-4034	Lathe and Turning Machine Tool S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.79
51-4041	Machinists	High school diploma or equivalent	None	Long-term on-the-job training	\$20.46
51-4051	Metal-Refining Furnace Operators and Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.02
51-4052	Pourers and Casters, Metal	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.69
51-4061	Model Makers, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.09
51-4062	Patternmakers, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.11
51-4071	Foundry Mold and Coremakers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.85
51-4072	Molding, Coremaking, and Casting Machine S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.51
51-4081	Multiple Machine Tool S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.15
51-4111	Tool and Die Makers	Postsecondary non-degree award	None	Long-term on-the-job training	\$24.26
51-4121	Welders, Cutters, Solderers, and Brazers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.20
51-4122	Welding, Soldering, and Brazing Machine S/O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.56
51-4191	Heat Treating Equipment S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.40
51-4193	Plating and Coating Machine S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.08
51-4194	Tool Grinders, Filers, and Sharpeners	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.91
51-4199	Metal Workers and Plastic Workers, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.45

Ohio Typical Occupational* Educational and Training Requirements

SOC Code *	Occupational Title**	Typical Education Required for Entry	Commonly Required Work Experience in Related Occupation	Typical On-the-Job Training to Obtain Competency	Median Wage*** May 2019
51-5111	Prepress Technicians and Workers	Postsecondary non-degree award	None	None	\$19.81
51-5112	Printing Press Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.99
51-5113	Print Binding and Finishing Workers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.11
51-6011	Laundry and Dry-Cleaning Workers	No formal educational credential	None	Short-term on-the-job training	\$10.94
51-6021	Pressers, Textile, Garment, and Related Materials	No formal educational credential	None	Short-term on-the-job training	\$11.72
51-6031	Sewing Machine Operators	No formal educational credential	None	Short-term on-the-job training	\$12.60
51-6041	Shoe and Leather Workers and Repairers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$12.39
51-6052	Tailors, Dressmakers, and Custom Sewers	No formal educational credential	None	Moderate-term on-the-job training	\$15.71
51-6062	Textile Cutting Machine S/O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.43
51-6063	Textile Knitting and Weaving Machine S/O/T	High school diploma or equivalent	None	Short-term on-the-job training	\$13.32
51-6091	Extruding and Forming Machine S/O/T, Synthetic and Glass Fibers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.00
51-6093	Upholsterers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.46
51-6099	Textile, Apparel, and Furnishings Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$15.58
51-7011	Cabinetmakers and Bench Carpenters	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.66
51-7021	Furniture Finishers	High school diploma or equivalent	None	Short-term on-the-job training	\$14.94
51-7041	Sawing Machine S/O/T, Wood	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.02
51-7042	Woodworking Machine S/O/T, Except Sawing	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.67
51-7099	Woodworkers, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.16
51-8012	Power Distributors and Dispatchers	High school diploma or equivalent	None	Long-term on-the-job training	\$42.41
51-8013	Power Plant Operators	High school diploma or equivalent	None	Long-term on-the-job training	\$39.50
51-8021	Stationary Engineers and Boiler Operators	High school diploma or equivalent	None	Long-term on-the-job training	\$27.92
51-8031	Water and Wastewater Treatment Plant and System Operators	High school diploma or equivalent	None	Long-term on-the-job training	\$23.87
51-8091	Chemical Plant and System Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$31.51
51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$35.07
51-8099	Plant and System Operators, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$26.98
51-9011	Chemical Equipment Operators and Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.13
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine S/O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$29.93
51-9021	Crushing, Grinding, and Polishing Machine S/O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.11
51-9022	Grinding and Polishing Workers, Hand	No formal educational credential	None	Moderate-term on-the-job training	\$14.51
51-9023	Mixing and Blending Machine S/O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.56
51-9031	Cutters and Trimmers, Hand	No formal educational credential	None	Short-term on-the-job training	\$13.67
51-9032	Cutting and Slicing Machine S/O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.80
51-9041	Extruding, Forming, Pressing, and Compacting Machine S/O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.67
51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.06
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.97
51-9071	Jewelers and Precious Stone and Metal Workers	High school diploma or equivalent	None	Long-term on-the-job training	\$16.35
51-9081	Dental Laboratory Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.20
51-9082	Medical Appliance Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.05
51-9083	Ophthalmic Laboratory Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.99
51-9111	Packaging and Filling Machine Operators and Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.19
51-9121	Coating, Painting, and Spraying Machine S/O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$39.07 *
51-9122	Painters, Transportation Equipment	High school diploma or equivalent	None	Moderate-term on-the-job training	\$52.84 *
51-9123	Painting, Coating, and Decorating Workers	No formal educational credential	None	Moderate-term on-the-job training	\$14.78
51-9141	Semiconductor Processors	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.58
51-9151	Photographic Process Workers and Processing Machine Operators	High school diploma or equivalent	None	Short-term on-the-job training	\$14.96
51-9191	Adhesive Bonding Machine Operators and Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.57
51-9192	Cleaning/Washing/Metal Pickling Equipment Operators and Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.56
51-9193	Cooling and Freezing Equipment Operators and Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.38
51-9194	Etchers and Engravers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.14
51-9195	Molders, Shapers, and Casters, Except M/P	High school diploma or equivalent	None	Long-term on-the-job training	\$15.85
51-9196	Paper Goods Machine S/O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.08
51-9197	Tire Builders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.40
51-9198	Helpers--Production Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$15.17
51-9199	Production Workers, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.34
53-0000	Transportation and Material Moving Occupations				\$15.09
53-1011	Aircraft Cargo Handling Supervisors	High school diploma or equivalent	Less than 5 years	None	\$25.03
53-1048	FL Sup of Trans/Mat.-Mov. Workers, Ex. Aircraft Cargo Handling	High school diploma or equivalent	Less than 5 years	None	\$25.80
53-2011	Airline Pilots, Copilots, and Flight Engineers	Bachelor's degree	Less than 5 years	Moderate-term on-the-job training	\$98,990 **
53-2012	Commercial Pilots	High school diploma or equivalent	None	Moderate-term on-the-job training	\$98,940 **
53-2021	Air Traffic Controllers	Associate's degree	None	Long-term on-the-job training	\$66.23
53-2022	Airfield Operations Specialists	High school diploma or equivalent	None	Long-term on-the-job training	\$23.77
53-3011	Ambulance Drivers and Attendants, Ex. EMT	High school diploma or equivalent	None	Moderate-term on-the-job training	\$12.09
53-3021	Bus Drivers, Transit and Intercity	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.23 *
53-3022	Bus Drivers, School or Special Client	High school diploma or equivalent	None	Short-term on-the-job training	\$20.64 *
53-3031	Driver/Sales Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$9.80
53-3032	Heavy and Tractor-Trailer Truck Drivers	Postsecondary non-degree award	None	Short-term on-the-job training	\$21.66
53-3033	Light Truck or Delivery Services Drivers	High school diploma or equivalent	None	Short-term on-the-job training	\$15.27
53-3041	Taxi Drivers and Chauffeurs	No formal educational credential	None	Short-term on-the-job training	\$48.94 *
53-3099	Motor Vehicle Operators, All Other	No formal educational credential	None	Short-term on-the-job training	\$12.44
53-4011	Locomotive Engineers	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$31.81
53-4021	Railroad Brake, Signal, and Switch Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.15
53-4031	Railroad Conductors and Yardmasters	High school diploma or equivalent	None	Moderate-term on-the-job training	\$30.05
53-5011	Sailors and Marine Oilers	No formal educational credential	None	Moderate-term on-the-job training	\$18.48
53-5021	Captains, Mates, and Pilots of Water Vessels	Postsecondary non-degree award	Less than 5 years	None	\$23.26
53-6011	Bridge and Lock Tenders	High school diploma or equivalent	None	Short-term on-the-job training	\$24.20
53-6021	Parking Lot Attendants	No formal educational credential	None	Short-term on-the-job training	\$10.43
53-6031	Automotive and Watercraft Service Attendants	No formal educational credential	None	Short-term on-the-job training	\$11.45
53-6041	Traffic Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$25.13
53-6051	Transportation Inspectors	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.68
53-6061	Transportation Attendants, Except Flight Attendants	High school diploma or equivalent	None	Short-term on-the-job training	\$12.79
53-6099	Transportation Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$39.07 *
53-7011	Conveyor Operators and Tenders	No formal educational credential	None	Short-term on-the-job training	\$19.60
53-7021	Crane and Tower Operators	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$22.15
53-7032	Excavating and Loading Machine and Dragline Operators	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$28.45 *
53-7033	Loading Machine Operators, Underground Mining	No formal educational credential	None	Short-term on-the-job training	\$37.59 *
53-7041	Hoist and Winch Operators	No formal educational credential	None	Short-term on-the-job training	\$18.56
53-7051	Industrial Truck and Tractor Operators	No formal educational credential	None	Short-term on-the-job training	\$17.32
53-7061	Cleaners of Vehicles and Equipment	No formal educational credential	None	Short-term on-the-job training	\$12.02
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	No formal educational credential	None	Short-term on-the-job training	\$14.43
53-7063	Machine Feeders and Offbearers	No formal educational credential	None	Short-term on-the-job training	\$16.75
53-7064	Packers and Packagers, Hand	No formal educational credential	None	Short-term on-the-job training	\$12.60

Ohio Typical Occupational* Educational and Training Requirements

SOC Code ¹	Occupational Title**	Typical Education Required for Entry	Commonly Required Work Experience in Related Occupation	Typical On-the-Job Training to Obtain Competency	Median Wage*** May 2019
53-7071	Gas Compressor and Gas Pumping Station Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$36.46
53-7072	Pump Operators, Except Wellhead Pumpers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.20
53-7073	Wellhead Pumpers	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$18.09
53-7081	Refuse and Recyclable Material Collectors	No formal educational credential	None	Short-term on-the-job training	\$18.54
53-7121	Tank Car, Truck, and Ship Loaders	No formal educational credential	None	Short-term on-the-job training	\$18.05
53-7199	Material Moving Workers, All Other	No formal educational credential	None	Short-term on-the-job training	\$14.81

¹ Occupational codes based on SOC 2010 coding structure. Detailed information - <http://www.bls.gov/soc/>

* Occupations with 100 or more workers.

** Title Abbreviations

FL = First-Line
FL Sup = First-Line Supervisors

M/P = Metal and Plastic

S/O/T = Setters, Operators, and Tenders

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, June 2020.

*** Wage estimates are based on Ohio's OES surveys.

**** Education, experience and training levels associated with occupations were based on national data provided by the BLS.

▲ Wage data unavailable.

+ National Wage

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

+++ Annual National Wages

Ohio Department of Job and Family Services
Office of Workforce Development
P.O. Box 1618
Columbus, OH 43216-1618



Search for jobs.
Visit OhioMeansJobs.com
Locate talented employees.

Bureau of Labor Market Information Business Principles for Workforce Development

- Partner with the workforce and economic development community.
- Develop and deploy new information solution tools and systems for the workforce and economic development community.
- Provide products and services that are customer- and demand-driven.
- 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 OhioLMI.com or call the Ohio Bureau of Labor Market Information at **1-888-296-7541** option 6, or **(614) 752-9494**.

Mike DeWine, Governor

State of Ohio

Ohio.gov

Kimberly Hall, Director

Ohio Department of Job and Family Services

jfs.ohio.gov

Office of Workforce Development

jfs.ohio.gov/owd/

Bureau of Labor Market Information

OhioLMI.com

(6/2020)

An equal opportunity employer and service provider.
A proud partner of the American Job Center network.

This workforce product was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The product was created by the recipient and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership. This product is copyrighted by the institution that created it. Internal use by an organization and/or personal use by an individual for non-commercial purposes is permissible. All other uses require the prior authorization of the copyright owner.