

Oklahoma Department of Career and Technology Education

*career*tech

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June 2012

Francis Tuttle Technology Center Industry Sector Environmental Analysis Agriculture, Food & Natural Resources Career Cluster Report



Region Info

Name: Francis Tuttle Technology Center

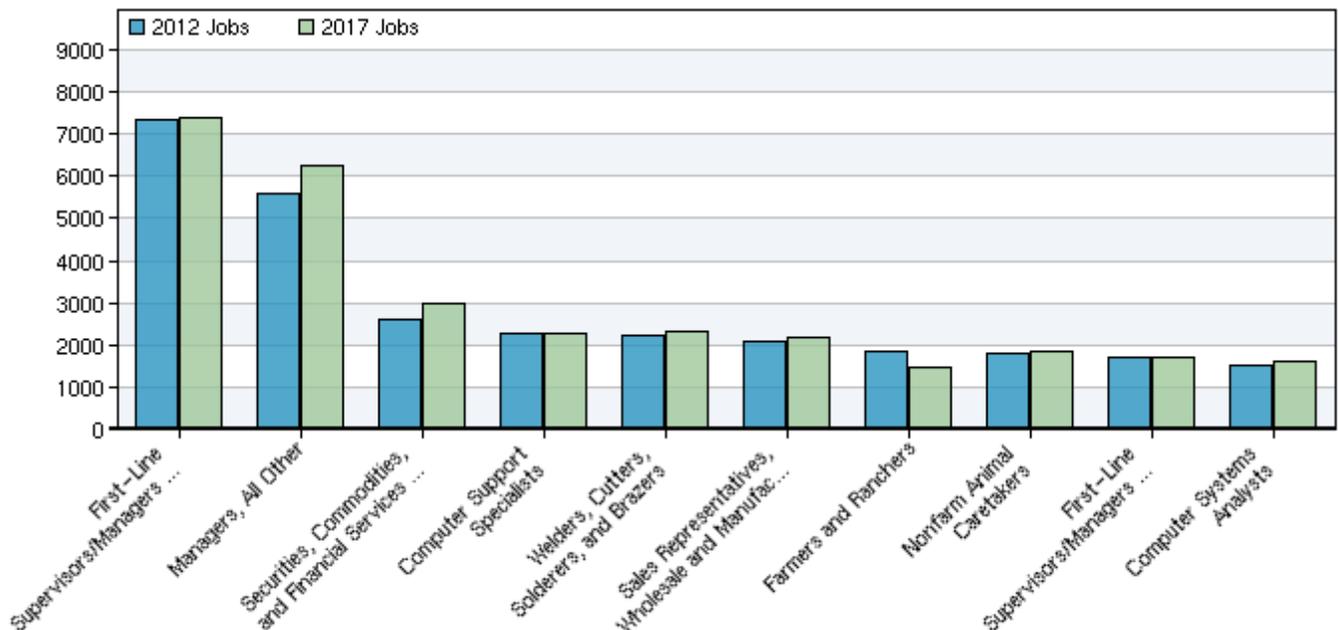
County Areas: Logan, Oklahoma (40083), Oklahoma, Oklahoma (40109)

Executive Summary for Agriculture, Food & Natural Resources Career Cluster (Bachelor_degree and below)

Education	2012 Jobs	2017 Jobs	Change	Annual Openings	2011 Hourly Earnings
Short-term on-the-job training	3,150	3,366	216	107	\$12.00
Moderate-term on-the-job training	4,506	4,613	107	137	\$15.57
Long-term on-the-job training	3,856	3,459	-397	56	\$13.34
Work experience in a related occupation	21,086	22,110	1,024	685	\$20.43
Postsecondary vocational award	2,480	2,595	115	99	\$16.28
Associate's degree	4,356	4,486	130	144	\$19.57
Bachelor's degree	6,582	7,289	707	312	\$25.18
Total	46,016	47,918	1,902	1,540	\$19.11

Source: EMSI Complete Employment - 2012.1

Largest Occupations



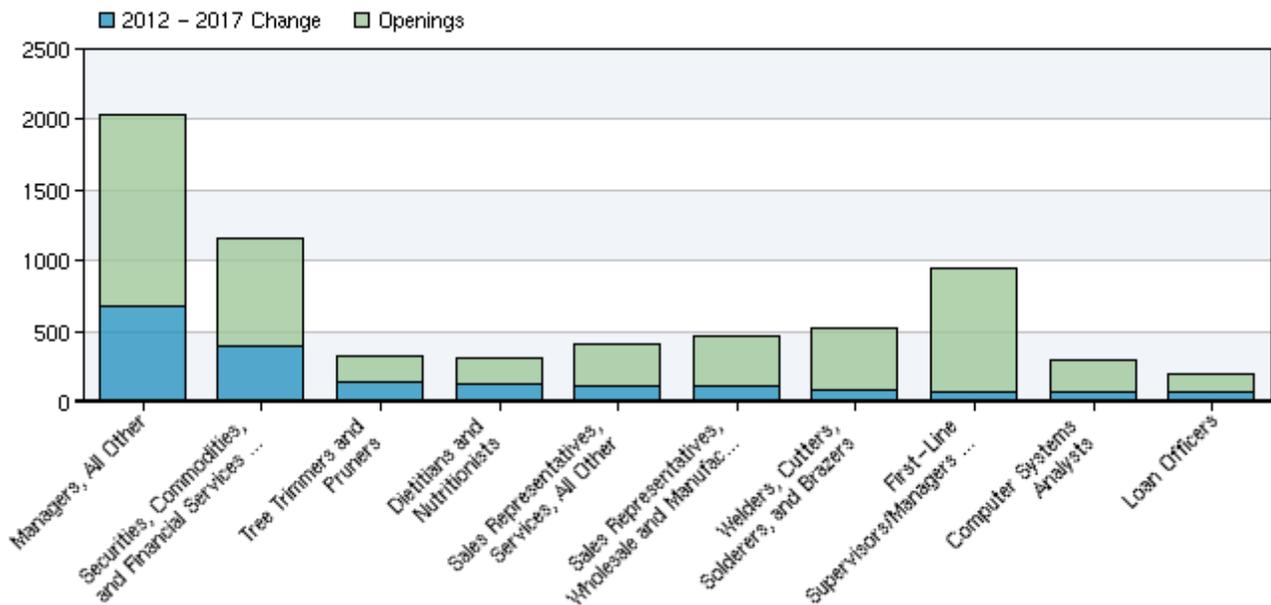
SOC Code	Description	2012 Jobs	2017 Jobs	Change	2011 Hourly Earnings	Education
41-1011	First-Line Supervisors/Managers of Retail Sales Workers	7,331	7,406	75	\$14.41	Work experience in a related occupation
11-9199	Managers, All Other	5,574	6,251	677	\$24.23	Work experience in a related occupation
41-3031	Securities, Commodities, and Financial Services Sales Agents	2,599	2,992	393	\$23.45	Bachelor's degree
15-1041	Computer Support Specialists	2,255	2,256	1	\$16.63	Associate's degree
51-4121	Welders, Cutters, Solderers, and Brazers	2,217	2,305	88	\$16.41	Postsecondary vocational award
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	2,083	2,198	115	\$25.27	Work experience in a related occupation
11-9012	Farmers and Ranchers	1,870	1,475	-395	\$10.11	Long-term on-the-job training
39-2021	Nonfarm Animal Caretakers	1,806	1,845	39	\$12.93	Short-term on-the-job training
51-1011	First-Line Supervisors/Managers of Production and Operating Workers	1,684	1,697	13	\$22.87	Work experience in a related occupation
15-1051	Computer Systems Analysts	1,521	1,588	67	\$29.80	Bachelor's degree
41-3099	Sales Representatives, Services, All Other	1,485	1,601	116	\$21.26	Work experience in a related occupation
41-2022	Parts Salespersons	1,393	1,363	-30	\$13.33	Moderate-term on-the-job training
13-2072	Loan Officers	1,357	1,421	64	\$18.35	Moderate-term on-the-job training
51-4041	Machinists	1,083	1,067	-16	\$16.54	Long-term on-the-job training
17-3023	Electrical and Electronic Engineering Technicians	904	905	1	\$29.16	Associate's degree
47-2073	Operating Engineers and Other Construction Equipment Operators	814	836	22	\$16.53	Moderate-term on-the-job training
11-3051	Industrial Production Managers	737	756	19	\$28.46	Work experience in a related occupation
53-1021	First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand	659	650	-9	\$19.35	Work experience in a related occupation
53-1031	First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators	655	628	-27	\$22.15	Work experience in a related occupation
37-3013	Tree Trimmers and Pruners	653	794	141	\$10.89	Short-term on-the-job training
53-7032	Excavating and Loading Machine and Dragline Operators	585	645	60	\$14.37	Moderate-term on-the-job training
37-1012	First-Line Supervisors/Managers of Landscaping, Lawn Service, and Groundskeeping Workers	500	562	62	\$19.01	Work experience in a related occupation
15-1061	Database Administrators	475	492	17	\$26.95	Bachelor's degree
19-4041	Geological and Petroleum Technicians	459	505	46	\$21.56	Associate's degree
29-1031	Dietitians and Nutritionists	372	496	124	\$21.00	Bachelor's degree
29-2056	Veterinary Technologists and	365	417	52	\$12.55	Associate's degree

SOC Code	Description	2012 Jobs	2017 Jobs	Change	2011 Hourly Earnings	Education
	Technicians					
11-3071	Transportation, Storage, and Distribution Managers	355	339	-16	\$28.94	Work experience in a related occupation
11-9151	Social and Community Service Managers	338	351	13	\$22.63	Bachelor's degree
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	334	350	16	\$17.81	Long-term on-the-job training
19-4021	Biological Technicians	328	332	4	\$16.47	Bachelor's degree
17-2112	Industrial Engineers	315	354	39	\$32.57	Bachelor's degree
27-3022	Reporters and Correspondents	283	324	41	\$17.76	Bachelor's degree
51-3021	Butchers and Meat Cutters	271	260	-11	\$14.30	Long-term on-the-job training
51-8031	Water and Liquid Waste Treatment Plant and System Operators	224	235	11	\$16.49	Long-term on-the-job training
27-4011	Audio and Video Equipment Technicians	213	236	23	\$14.76	Postsecondary vocational award
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	187	205	18	\$10.20	Short-term on-the-job training
27-4012	Broadcast Technicians	164	171	7	\$12.50	Associate's degree
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	163	168	5	\$9.29	Short-term on-the-job training
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	159	168	9	\$12.29	Short-term on-the-job training
19-4091	Environmental Science and Protection Technicians, Including Health	113	136	23	\$26.50	Associate's degree
51-3023	Slaughterers and Meat Packers	109	109	0	\$10.77	Moderate-term on-the-job training
51-3092	Food Batchmakers	108	115	7	\$10.88	Short-term on-the-job training
25-9021	Farm and Home Management Advisors	96	94	-2	\$20.33	Bachelor's degree
47-4041	Hazardous Materials Removal Workers	82	70	-12	\$16.26	Moderate-term on-the-job training
17-2081	Environmental Engineers	75	78	3	\$42.26	Bachelor's degree
13-1021	Purchasing Agents and Buyers, Farm Products	74	71	-3	\$19.49	Long-term on-the-job training
45-4021	Fallers	70	69	-1	\$15.95	Moderate-term on-the-job training
51-3093	Food Cooking Machine Operators and Tenders	69	66	-3	\$9.53	Short-term on-the-job training
45-3011	Fishers and Related Fishing Workers	59	64	5	\$12.30	Moderate-term on-the-job training
27-4014	Sound Engineering Technicians	51	54	3	\$16.80	Postsecondary vocational award
33-3031	Fish and Game Wardens	49	51	2	\$20.44	Associate's degree
19-4093	Forest and Conservation Technicians	46	46	0	\$17.61	Associate's degree
19-1031	Conservation Scientists	43	44	1	\$30.77	Bachelor's degree
17-1021	Cartographers and Photogrammetrists	38	42	4	\$23.13	Bachelor's degree
19-1032	Foresters	35	36	1	\$26.23	Bachelor's degree
45-4022	Logging Equipment Operators	32	31	-1	\$15.13	Moderate-term

SOC Code	Description	2012 Jobs	2017 Jobs	Change	2011 Hourly Earnings	Education
						on-the-job training
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers	19	19	0	\$42.03	Bachelor's degree
19-1012	Food Scientists and Technologists	19	19	0	\$27.01	Bachelor's degree
19-1013	Soil and Plant Scientists	16	16	0	\$25.04	Bachelor's degree
45-2011	Agricultural Inspectors	15	15	0	\$29.99	Work experience in a related occupation
19-1023	Zoologists and Wildlife Biologists	<10	10	--	--	Bachelor's degree
45-2021	Animal Breeders	<10	<10	--	--	Work experience in a related occupation
53-5011	Sailors and Marine Oilers	<10	<10	--	--	Short-term on-the-job training
45-4023	Log Graders and Scalers	<10	<10	--	--	Moderate-term on-the-job training
17-2021	Agricultural Engineers	<10	<10	--	--	Bachelor's degree
27-4013	Radio Operators	0	0	0	\$0.00	Moderate-term on-the-job training

Source: EMSI Complete Employment - 2012.1

Largest Growth



SOC Code	Description	2012 - 2017 Change	Openings	Annual Openings	2011 Hourly Earnings	Education
11-9199	Managers, All Other	677	1,361	272	\$24.23	Work experience

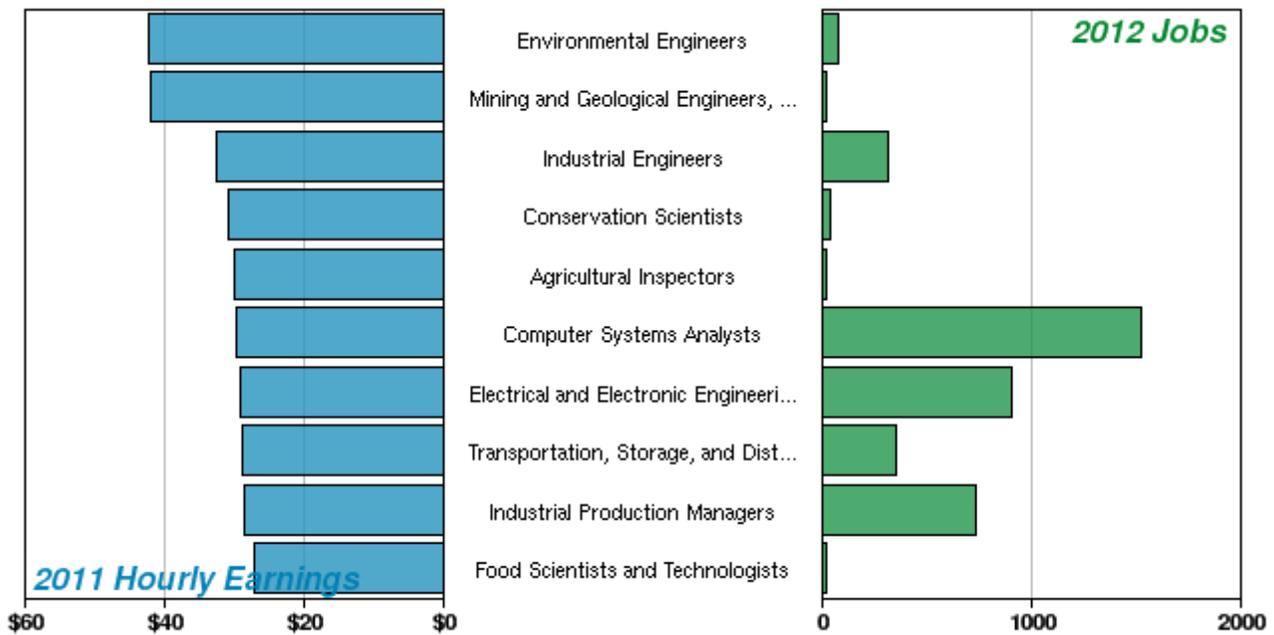
SOC Code	Description	2012 - 2017 Change	Openings	Annual Openings	2011 Hourly Earnings	Education
						in a related occupation
41-3031	Securities, Commodities, and Financial Services Sales Agents	393	770	154	\$23.45	Bachelor's degree
37-3013	Tree Trimmers and Pruners	141	178	36	\$10.89	Short-term on-the-job training
29-1031	Dietitians and Nutritionists	124	182	36	\$21.00	Bachelor's degree
41-3099	Sales Representatives, Services, All Other	116	297	59	\$21.26	Work experience in a related occupation
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	115	354	71	\$25.27	Work experience in a related occupation
51-4121	Welders, Cutters, Solderers, and Brazers	88	428	86	\$16.41	Postsecondary vocational award
41-1011	First-Line Supervisors/Managers of Retail Sales Workers	75	875	175	\$14.41	Work experience in a related occupation
15-1051	Computer Systems Analysts	67	230	46	\$29.80	Bachelor's degree
13-2072	Loan Officers	64	137	27	\$18.35	Moderate-term on-the-job training
37-1012	First-Line Supervisors/Managers of Landscaping, Lawn Service, and Groundskeeping Workers	62	88	18	\$19.01	Work experience in a related occupation
53-7032	Excavating and Loading Machine and Dragline Operators	60	143	29	\$14.37	Moderate-term on-the-job training
29-2056	Veterinary Technologists and Technicians	52	97	19	\$12.55	Associate's degree
19-4041	Geological and Petroleum Technicians	46	123	25	\$21.56	Associate's degree
27-3022	Reporters and Correspondents	41	79	16	\$17.76	Bachelor's degree
17-2112	Industrial Engineers	39	78	16	\$32.57	Bachelor's degree
39-2021	Nonfarm Animal Caretakers	39	237	47	\$12.93	Short-term on-the-job training
19-4091	Environmental Science and Protection Technicians, Including Health	23	46	9	\$26.50	Associate's degree
27-4011	Audio and Video Equipment Technicians	23	55	11	\$14.76	Postsecondary vocational award
47-2073	Operating Engineers and Other Construction Equipment Operators	22	92	18	\$16.53	Moderate-term on-the-job training
11-3051	Industrial Production Managers	19	148	30	\$28.46	Work experience in a related occupation
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	18	28	6	\$10.20	Short-term on-the-job training
15-1061	Database Administrators	17	56	11	\$26.95	Bachelor's degree
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	16	47	9	\$17.81	Long-term on-the-job training
51-1011	First-Line Supervisors/Managers of Production and Operating	13	131	26	\$22.87	Work experience in a related

SOC Code	Description	2012 - 2017 Change	Openings	Annual Openings	2011 Hourly Earnings	Education
	Workers					occupation
11-9151	Social and Community Service Managers	13	52	10	\$22.63	Bachelor's degree
51-8031	Water and Liquid Waste Treatment Plant and System Operators	11	35	7	\$16.49	Long-term on-the-job training
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	9	32	6	\$12.29	Short-term on-the-job training
27-4012	Broadcast Technicians	7	31	6	\$12.50	Associate's degree
51-3092	Food Batchmakers	7	19	4	\$10.88	Short-term on-the-job training
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	5	31	6	\$9.29	Short-term on-the-job training
45-3011	Fishers and Related Fishing Workers	5	13	3	\$12.30	Moderate-term on-the-job training
17-1021	Cartographers and Photogrammetrists	4	8	2	\$23.13	Bachelor's degree
19-4021	Biological Technicians	4	62	12	\$16.47	Bachelor's degree
27-4014	Sound Engineering Technicians	3	11	2	\$16.80	Postsecondary vocational award
17-2081	Environmental Engineers	3	10	2	\$42.26	Bachelor's degree
33-3031	Fish and Game Wardens	2	8	2	\$20.44	Associate's degree
19-1031	Conservation Scientists	1	3	1	\$30.77	Bachelor's degree
15-1041	Computer Support Specialists	1	319	64	\$16.63	Associate's degree
19-1032	Foresters	1	3	1	\$26.23	Bachelor's degree
19-1023	Zoologists and Wildlife Biologists	1	2	0	\$27.50	Bachelor's degree
17-3023	Electrical and Electronic Engineering Technicians	1	88	18	\$29.16	Associate's degree
53-5011	Sailors and Marine Oilers	1	1	0	\$19.05	Short-term on-the-job training
27-4013	Radio Operators	0	0	0	\$0.00	Moderate-term on-the-job training
19-4093	Forest and Conservation Technicians	0	10	2	\$17.61	Associate's degree
17-2021	Agricultural Engineers	0	0	0	\$40.23	Bachelor's degree
19-1013	Soil and Plant Scientists	0	3	1	\$25.04	Bachelor's degree
45-2011	Agricultural Inspectors	0	2	0	\$29.99	Work experience in a related occupation
19-1012	Food Scientists and Technologists	0	4	1	\$27.01	Bachelor's degree
51-3023	Slaughterers and Meat Packers	0	19	4	\$10.77	Moderate-term on-the-job training
45-4023	Log Graders and Scalers	0	1	0	\$14.58	Moderate-term on-the-job training
17-2151	Mining and Geological Engineers, Including Mining	0	4	1	\$42.03	Bachelor's degree

SOC Code	Description	2012 - 2017 Change	Openings	Annual Openings	2011 Hourly Earnings	Education
	Safety Engineers					
45-2021	Animal Breeders	0	1	0	\$13.02	Work experience in a related occupation
45-4022	Logging Equipment Operators	-1	4	1	\$15.13	Moderate-term on-the-job training
45-4021	Fallers	-1	10	2	\$15.95	Moderate-term on-the-job training
25-9021	Farm and Home Management Advisors	-2	11	2	\$20.33	Bachelor's degree
13-1021	Purchasing Agents and Buyers, Farm Products	-3	8	2	\$19.49	Long-term on-the-job training
51-3093	Food Cooking Machine Operators and Tenders	-3	11	2	\$9.53	Short-term on-the-job training
53-1021	First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand	-9	59	12	\$19.35	Work experience in a related occupation
51-3021	Butchers and Meat Cutters	-11	44	9	\$14.30	Long-term on-the-job training
47-4041	Hazardous Materials Removal Workers	-12	12	2	\$16.26	Moderate-term on-the-job training
11-3071	Transportation, Storage, and Distribution Managers	-16	50	10	\$28.94	Work experience in a related occupation
51-4041	Machinists	-16	84	17	\$16.54	Long-term on-the-job training
53-1031	First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators	-27	58	12	\$22.15	Work experience in a related occupation
41-2022	Parts Salespersons	-30	254	51	\$13.33	Moderate-term on-the-job training
11-9012	Farmers and Ranchers	-395	61	12	\$10.11	Long-term on-the-job training

Source: EMSI Complete Employment - 2012.1

Highest Earnings



SOC Code	Description	2011 Hourly Earnings	2012 Jobs	2012 - 2017 Change	Annual Openings	Education
17-2081	Environmental Engineers	\$42.26	75	3	2	Bachelor's degree
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers	\$42.03	19	0	1	Bachelor's degree
17-2112	Industrial Engineers	\$32.57	315	39	16	Bachelor's degree
19-1031	Conservation Scientists	\$30.77	43	1	1	Bachelor's degree
45-2011	Agricultural Inspectors	\$29.99	15	0	0	Work experience in a related occupation
15-1051	Computer Systems Analysts	\$29.80	1,521	67	46	Bachelor's degree
17-3023	Electrical and Electronic Engineering Technicians	\$29.16	904	1	18	Associate's degree
11-3071	Transportation, Storage, and Distribution Managers	\$28.94	355	-16	10	Work experience in a related occupation
11-3051	Industrial Production Managers	\$28.46	737	19	30	Work experience in a related occupation
19-1012	Food Scientists and Technologists	\$27.01	19	0	1	Bachelor's degree
15-1061	Database Administrators	\$26.95	475	17	11	Bachelor's degree
19-4091	Environmental Science and Protection Technicians, Including Health	\$26.50	113	23	9	Associate's degree
19-1032	Foresters	\$26.23	35	1	1	Bachelor's degree
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and	\$25.27	2,083	115	71	Work experience in a related

SOC Code	Description	2011 Hourly Earnings	2012 Jobs	2012 - 2017 Change	Annual Openings	Education
	Scientific Products					occupation
19-1013	Soil and Plant Scientists	\$25.04	16	0	1	Bachelor's degree
11-9199	Managers, All Other	\$24.23	5,574	677	272	Work experience in a related occupation
41-3031	Securities, Commodities, and Financial Services Sales Agents	\$23.45	2,599	393	154	Bachelor's degree
17-1021	Cartographers and Photogrammetrists	\$23.13	38	4	2	Bachelor's degree
51-1011	First-Line Supervisors/Managers of Production and Operating Workers	\$22.87	1,684	13	26	Work experience in a related occupation
11-9151	Social and Community Service Managers	\$22.63	338	13	10	Bachelor's degree
53-1031	First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators	\$22.15	655	-27	12	Work experience in a related occupation
19-4041	Geological and Petroleum Technicians	\$21.56	459	46	25	Associate's degree
41-3099	Sales Representatives, Services, All Other	\$21.26	1,485	116	59	Work experience in a related occupation
29-1031	Dietitians and Nutritionists	\$21.00	372	124	36	Bachelor's degree
33-3031	Fish and Game Wardens	\$20.44	49	2	2	Associate's degree
25-9021	Farm and Home Management Advisors	\$20.33	96	-2	2	Bachelor's degree
13-1021	Purchasing Agents and Buyers, Farm Products	\$19.49	74	-3	2	Long-term on-the-job training
53-1021	First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand	\$19.35	659	-9	12	Work experience in a related occupation
37-1012	First-Line Supervisors/Managers of Landscaping, Lawn Service, and Groundskeeping Workers	\$19.01	500	62	18	Work experience in a related occupation
13-2072	Loan Officers	\$18.35	1,357	64	27	Moderate-term on-the-job training
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	\$17.81	334	16	9	Long-term on-the-job training
27-3022	Reporters and Correspondents	\$17.76	283	41	16	Bachelor's degree
19-4093	Forest and Conservation Technicians	\$17.61	46	0	2	Associate's degree
27-4014	Sound Engineering Technicians	\$16.80	51	3	2	Postsecondary vocational award
15-1041	Computer Support Specialists	\$16.63	2,255	1	64	Associate's degree
51-4041	Machinists	\$16.54	1,083	-16	17	Long-term on-the-job training
47-2073	Operating Engineers and Other Construction Equipment Operators	\$16.53	814	22	18	Moderate-term on-the-job training
51-8031	Water and Liquid Waste Treatment Plant and System Operators	\$16.49	224	11	7	Long-term on-the-job training
19-4021	Biological Technicians	\$16.47	328	4	12	Bachelor's degree

SOC Code	Description	2011 Hourly Earnings	2012 Jobs	2012 - 2017 Change	Annual Openings	Education
51-4121	Welders, Cutters, Solderers, and Brazers	\$16.41	2,217	88	86	Postsecondary vocational award
47-4041	Hazardous Materials Removal Workers	\$16.26	82	-12	2	Moderate-term on-the-job training
45-4021	Fallers	\$15.95	70	-1	2	Moderate-term on-the-job training
45-4022	Logging Equipment Operators	\$15.13	32	-1	1	Moderate-term on-the-job training
27-4011	Audio and Video Equipment Technicians	\$14.76	213	23	11	Postsecondary vocational award
41-1011	First-Line Supervisors/Managers of Retail Sales Workers	\$14.41	7,331	75	175	Work experience in a related occupation
53-7032	Excavating and Loading Machine and Dragline Operators	\$14.37	585	60	29	Moderate-term on-the-job training
51-3021	Butchers and Meat Cutters	\$14.30	271	-11	9	Long-term on-the-job training
41-2022	Parts Salespersons	\$13.33	1,393	-30	51	Moderate-term on-the-job training
39-2021	Nonfarm Animal Caretakers	\$12.93	1,806	39	47	Short-term on-the-job training
29-2056	Veterinary Technologists and Technicians	\$12.55	365	52	19	Associate's degree
27-4012	Broadcast Technicians	\$12.50	164	7	6	Associate's degree
45-3011	Fishers and Related Fishing Workers	\$12.30	59	5	3	Moderate-term on-the-job training
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	\$12.29	159	9	6	Short-term on-the-job training
37-3013	Tree Trimmers and Pruners	\$10.89	653	141	36	Short-term on-the-job training
51-3092	Food Batchmakers	\$10.88	108	7	4	Short-term on-the-job training
51-3023	Slaughterers and Meat Packers	\$10.77	109	0	4	Moderate-term on-the-job training
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	\$10.20	187	18	6	Short-term on-the-job training
11-9012	Farmers and Ranchers	\$10.11	1,870	-395	12	Long-term on-the-job training
51-3093	Food Cooking Machine Operators and Tenders	\$9.53	69	-3	2	Short-term on-the-job training
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	\$9.29	163	5	6	Short-term on-the-job training

Source: EMSI Complete Employment - 2012.1

*Note: Occupations with fewer than 10 employees are not shown.

Career Cluster Data

Career clusters and pathways are collections of standard occupation (SOC) codes. They are defined by the States' Career Cluster Initiative.

Occupation Data

Organizing regional employment information by occupation provides a workforce-oriented view of the regional economy. EMSI's occupation data are based on EMSI's industry data and regional staffing patterns taken from the Occupational Employment Statistics program (U.S. Bureau of Labor Statistics). Wage information is partially derived from the American Community Survey. The occupation-to-program (SOC-to-CIP) crosswalk is based on one from the U.S. Department of Education, with customizations by EMSI.

State Data Sources

This report uses state data from the following agencies: Oklahoma Employment Security Commission.