

U.S. Bureau of Labor Statistics

Employment Projections

Occupational employment, job openings and worker characteristics

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Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Total, all occupations	00-0000	145,355.8	160,983.7	15,628.0	10.8	6.5	50,557.3	\$34,750	—	—	—
Management occupations	11-0000	8,861.5	9,498.0	636.6	7.2	22.2	2,586.7	\$93,910	—	—	—
Top executives	11-1000	2,361.5	2,626.8	265.2	11.2	3.3	717.4	\$99,550	—	—	—
Chief executives	11-1011	330.5	347.9	17.4	5.3	17.7	87.8	\$168,140	Bachelor's degree	5 years or more	None
General and operations managers	11-1021	1,972.7	2,216.8	244.1	12.4	1.0	613.1	\$95,440	Bachelor's degree	Less than 5 years	None
Legislators	11-1031	58.4	62.1	3.7	6.4	—	16.5	\$19,780	Bachelor's degree	Less than 5 years	None
Advertising, marketing, promotions, public relations, and	11-2000	637.4	700.5	63.1	9.9	3.4	203.3	\$107,950	—	—	—

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(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
sales managers											
Advertising and promotions managers	11-2011	35.5	38.0	2.4	6.9	17.8	13.4	\$88,590	Bachelor's degree	Less than 5 years	None
Marketing and sales managers	11-2020	539.8	592.5	52.7	9.8	2.6	168.6	\$110,340	—	—	—
Marketing managers	11-2021	180.5	203.4	22.9	12.7	2.6	61.7	\$119,480	Bachelor's degree	5 years or more	None
Sales managers	11-2022	359.3	389.0	29.8	8.3	2.7	106.9	\$105,260	Bachelor's degree	Less than 5 years	None
Public relations and fundraising managers	11-2031	62.1	70.1	8.0	12.9	1.6	21.3	\$95,450	Bachelor's degree	5 years or more	None
Operations specialties managers	11-3000	1,647.5	1,799.7	152.1	9.2	3.3	459.1	\$100,720	—	—	—
Administrative services managers	11-3011	280.8	315.0	34.2	12.2	0.1	79.9	\$81,080	Bachelor's degree	Less than 5 years	None
Computer and information systems managers	11-3021	332.7	383.6	50.9	15.3	3.1	97.1	\$120,950	Bachelor's degree	5 years or more	None
Financial managers	11-3031	532.1	579.2	47.1	8.9	5.1	146.9	\$109,740	Bachelor's degree	5 years or more	None
Industrial production managers	11-3051	172.7	168.6	-4.1	-2.4	6.1	31.4	\$89,190	Bachelor's degree	5 years or more	None
Purchasing managers	11-3061	71.9	73.4	1.5	2.1	0.3	17.3	\$100,170	Bachelor's degree	5 years or more	None
Transportation, storage,	11-307	105.2	110.3	5.1	4.9	4.8	29.1	\$81,830	High school	5 years or more	None

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	2012	2022	Number	Percent							
and distribution managers	11-3111	20.7	21.4	0.6	3.1	—	6.1	\$95,250	Bachelor's degree	5 years or more	None
Compensation and benefits managers	11-3121	102.7	116.3	13.6	13.2	1.0	40.6	\$99,720	Bachelor's degree	5 years or more	None
Human resources managers	11-3131	28.6	31.8	3.2	11.2	—	10.7	\$95,400	Bachelor's degree	5 years or more	None
Training and development managers	11-9000	4,215.0	4,371.0	156.1	3.7	43.1	1,207.0	\$81,940	—	—	—
Other management occupations	11-9013	930.6	750.7	-179.9	-19.3	73.1	150.2	\$69,300	High school diploma or equivalent	5 years or more	None
Farmers, ranchers, and other agricultural managers	11-9021	485.0	563.2	78.2	16.1	56.7	154.6	\$82,790	Bachelor's degree	None	Moderate-term on-the-job training
Construction managers	11-9030	491.4	542.0	50.6	10.3	3.8	181.3	\$82,930	—	—	—
Education administrators	11-9031	63.8	74.7	10.9	17.0	8.7	27.8	\$43,950	Bachelor's degree	Less than 5 years	None
Education administrators, preschool and childcare center/program	11-9032	231.5	244.7	13.1	5.7	1.7	74.7	\$87,760	Master's degree	5 years or more	None
Education administrators, elementary and secondary school	11-9032	161.8	185.3	23.5	14.5	4.6	66.5	\$86,490	Master's	5 years	None

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	2012	2022	Number	Percent							
administrators, postsecondary	9033							degree	or more		
Education administrators, all other	11-9039	34.2	37.3	3.1	9.0	5.5	12.2	\$76,860	Bachelor's degree	Less than 5 years	None
Architectural and engineering managers	11-9041	193.8	206.9	13.1	6.7	1.7	60.6	\$124,870	Bachelor's degree	5 years or more	None
Food service managers	11-9051	321.4	326.5	5.0	1.6	39.8	62.4	\$47,960	High school diploma or equivalent	Less than 5 years	None
Funeral service managers	11-9061	9.3	10.5	1.2	12.5	1.7	3.2	\$66,720	Associate's degree	Less than 5 years	None
Gaming managers	11-9071	4.8	5.2	0.4	7.5	6.4	1.4	\$65,220	High school diploma or equivalent	Less than 5 years	None
Lodging managers	11-9081	50.4	51.1	0.7	1.4	39.4	16.2	\$46,810	High school diploma or equivalent	Less than 5 years	None
Medical and health services managers	11-9111	315.5	388.8	73.3	23.2	4.6	149.9	\$88,580	Bachelor's degree	None	None
Natural sciences managers	11-9121	51.6	54.5	2.9	5.7	1.1	13.7	\$115,730	Bachelor's degree	5 years or more	None
Postmasters and mail superintendents	11-9131	23.0	17.4	-5.6	-24.2	—	5.0	\$63,050	High school diploma or	Less than 5 years	Moderate-term on-the-job training

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	2012	2022	Number	Percent						
								equivalent		
Property, real estate, and community association managers 11-9141	297.0	332.0	35.0	11.8	44.7	102.1	\$52,610	High school diploma or equivalent	Less than 5 years	None
Social and community service managers 11-9151	132.9	160.6	27.7	20.8	7.0	55.1	\$59,970	Bachelor's degree	5 years or more	None
Emergency management directors 11-9161	9.9	10.7	0.8	8.3	—	2.2	\$59,770	Bachelor's degree	5 years or more	None
Managers, all other 11-9199	898.2	950.8	52.6	5.9	59.3	249.1	\$100,890	High school diploma or equivalent	Less than 5 years	None
Business and financial operations occupations 13-0000	7,167.6	8,065.7	898.1	12.5	6.1	2,351.5	\$62,500	—	—	—
Business operations specialists 13-1000	4,432.3	5,009.2	576.9	13.0	5.5	1,344.1	\$62,230	—	—	—
Agents and business managers of artists, performers, and athletes 13-1011	18.3	20.1	1.8	9.7	33.0	5.8	\$63,370	Bachelor's degree	Less than 5 years	None
Buyers and purchasing agents 13-1020	432.7	450.9	18.1	4.2	5.5	105.0	\$56,880	—	—	—
Buyers and purchasing agents, farm products 13-1021	14.2	15.0	0.8	5.9	24.7	3.5	\$55,720	High school diploma or equivalent	None	Long-term on-the-job training

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	2012	2022	Number	Percent						
Wholesale and retail buyers, except farm products 13-1022	124.6	133.5	8.9	7.1	12.2	39.9	\$51,470	High school diploma or equivalent	None	Long-term on-the-job training
Purchasing agents, except wholesale, retail, and farm products 13-1023	294.0	302.4	8.4	2.9	1.8	61.6	\$58,760	High school diploma or equivalent	None	Long-term on-the-job training
Claims adjusters, appraisers, examiners, and investigators 13-1030	311.1	321.9	10.8	3.5	2.4	83.4	\$59,850	—	—	—
Claims adjusters, examiners, and investigators 13-1031	297.6	309.1	11.5	3.9	2.4	80.3	\$59,960	High school diploma or equivalent	None	Long-term on-the-job training
Insurance appraisers, auto damage 13-1032	13.5	12.8	-0.7	-5.3	2.9	3.1	\$58,610	Postsecondary non-degree award	None	Moderate-term on-the-job training
Compliance officers 13-1041	239.8	250.8	11.0	4.6	0.1	55.3	\$62,020	Bachelor's degree	None	Moderate-term on-the-job training
Cost estimators 13-1051	202.2	255.2	53.0	26.2	2.8	118.0	\$58,860	Bachelor's degree	None	None
Human resources workers 13-1070	495.6	528.1	32.5	6.6	1.8	123.7	\$55,600	—	—	—
Human resources specialists 13-1071	418.0	451.1	33.2	7.9	1.7	109.5	\$55,800	Bachelor's degree	None	None
Labor relations 13-107	77.6	76.9	-0.6	-0.8	2.1	14.2	\$54,660	Bachelor's degree	None	None

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	2012	2022	Number	Percent							
specialists	5										
Logisticians	13-1081	125.9	153.6	27.6	21.9	2.3	42.2	\$72,780	Bachelor's degree	None	None
Management analysts	13-1111	718.7	852.5	133.8	18.6	21.4	245.2	\$78,600	Bachelor's degree	Less than 5 years	None
Meeting, convention, and event planners	13-1121	94.2	125.4	31.3	33.2	15.7	44.2	\$45,810	Bachelor's degree	None	None
Fundraisers	13-1131	65.7	77.1	11.4	17.3	0.9	24.3	\$50,680	Bachelor's degree	None	None
Compensation, benefits, and job analysis specialists	13-1141	91.7	97.0	5.3	5.8	0.8	22.0	\$59,090	Bachelor's degree	None	None
Training and development specialists	13-1151	228.8	264.2	35.4	15.5	0.9	77.2	\$55,930	Bachelor's degree	Less than 5 years	None
Market research analysts and marketing specialists	13-1161	415.7	547.2	131.5	31.6	2.9	188.5	\$60,300	Bachelor's degree	None	None
Business operations specialists, all other	13-1199	991.8	1,065.2	73.4	7.4	0.5	209.4	\$65,120	High school diploma or equivalent	None	None
Financial specialists	13-2000	2,735.3	3,056.5	321.2	11.7	7.1	1,007.4	\$63,070	—	—	—
Accountants and auditors	13-2011	1,275.4	1,442.2	166.7	13.1	6.7	544.2	\$63,550	Bachelor's degree	None	None
Appraisers and assessors of real estate	13-2021	83.7	88.4	4.7	5.6	27.3	12.1	\$49,540	Bachelor's degree	None	Long-term on-the-job training

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		2012	2022	Number	Percent						
Budget analysts	13-2031	61.7	65.5	3.8	6.1	—	28.5	\$69,280	Bachelor's degree	None	None
Credit analysts	13-2041	61.8	68.2	6.4	10.4	—	21.8	\$61,080	Bachelor's degree	None	None
Financial analysts and advisors	13-2050	582.7	675.9	93.2	16.0	9.2	226.2	\$71,770	—	—	—
Financial analysts	13-2051	253.0	292.4	39.3	15.5	2.6	100.9	\$76,950	Bachelor's degree	None	None
Personal financial advisors	13-2052	223.4	283.7	60.3	27.0	20.2	96.4	\$67,520	Bachelor's degree	None	None
Insurance underwriters	13-2053	106.3	99.8	-6.5	-6.1	1.8	28.9	\$62,870	Bachelor's degree	None	Moderate-term on-the-job training
Financial examiners	13-2061	29.2	31.1	1.8	6.3	—	9.2	\$75,800	Bachelor's degree	None	Moderate-term on-the-job training
Credit counselors and loan officers	13-2070	327.8	357.0	29.2	8.9	2.3	89.2	\$57,500	—	—	—
Credit counselors	13-2071	30.9	37.3	6.4	20.7	1.8	12.0	\$39,420	Bachelor's degree	None	Moderate-term on-the-job training
Loan officers	13-2072	296.9	319.8	22.9	7.7	2.3	77.2	\$59,820	Bachelor's degree	None	Moderate-term on-the-job training
Tax examiners, collectors and preparers, and revenue agents	13-2080	157.0	163.0	6.0	3.8	14.9	50.4	\$43,970	—	—	—
Tax examiners and collectors,	13-2081	69.5	66.8	-2.7	-3.9	—	23.9	\$50,440	Bachelor's degree	None	Moderate-term on-the-job training

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	2012	2022	Number	Percent							
and revenue agents											
Tax preparers	13-2082	87.6	96.2	8.7	9.9	26.7	26.5	\$33,730	High school diploma or equivalent	None	Moderate-term on-the-job training
Financial specialists, all other	13-2099	155.8	165.2	9.4	6.1	1.0	25.8	\$61,160	Bachelor's degree	None	Moderate-term on-the-job training
Computer and mathematical occupations	15-0000	3,814.7	4,500.5	685.8	18.0	2.9	1,308.5	\$76,270	—	—	—
Computer occupations	15-1100	3,682.3	4,333.6	651.3	17.7	3.0	1,240.1	\$76,270	—	—	—
Computer and information research scientists	15-1111	26.7	30.8	4.1	15.3	0.9	8.3	\$102,190	Doctoral or professional degree	None	None
Computer and information analysts	15-1120	595.7	750.9	155.2	26.1	3.6	248.8	\$80,460	—	—	—
Computer systems analysts	15-1121	520.6	648.4	127.7	24.5	4.0	209.6	\$79,680	Bachelor's degree	None	None
Information security analysts	15-1122	75.1	102.5	27.4	36.5	0.7	39.2	\$86,170	Bachelor's degree	Less than 5 years	None
Software developers and programmers	15-1130	1,503.1	1,782.6	279.5	18.6	4.5	522.0	\$87,100	—	—	—
Computer programmers	15-1131	343.7	372.1	28.4	8.3	5.1	118.1	\$74,280	Bachelor's degree	None	None
Software developers,	15-113	613.0	752.9	139.9	22.8	1.8	218.5	\$90,060	Bachelor's degree	None	None

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	2012	2022	Number	Percent							
applications	2										
Software developers, systems software	15-1133	405.0	487.8	82.8	20.4	1.9	134.7	\$99,000	Bachelor's degree	None	None
Web developers	15-1134	141.4	169.9	28.5	20.1	22.5	50.7	\$62,500	Associate's degree	None	None
Database and systems administrators and network architects	15-1140	628.6	710.3	81.8	13.0	1.0	184.3	\$76,880	—	—	—
Database administrators	15-1141	118.7	136.6	17.9	15.1	1.6	40.3	\$77,080	Bachelor's degree	Less than 5 years	None
Network and computer systems administrators	15-1142	366.4	409.4	42.9	11.7	0.6	100.5	\$72,560	Bachelor's degree	None	None
Computer network architects	15-1143	143.4	164.3	20.9	14.6	1.2	43.5	\$91,000	Bachelor's degree	5 years or more	None
Computer support specialists	15-1150	722.4	845.3	123.0	17.0	0.8	236.5	\$48,900	—	—	—
Computer user support specialists	15-1151	547.7	658.5	110.8	20.2	0.8	196.9	\$46,420	Some college, no degree	None	Moderate-term on-the-job training
Computer network support specialists	15-1152	174.6	186.8	12.1	6.9	0.8	39.6	\$59,090	Associate's degree	None	None
Computer occupations, all other	15-1199	205.8	213.6	7.8	3.8	4.0	40.2	\$81,140	Bachelor's degree	None	None
Mathematical science occupations	15-2000	132.4	166.9	34.5	26.1	1.6	68.4	\$76,270	—	—	—

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Actuaries	15-2011	24.3	30.6	6.3	26.1	—	13.2	\$93,680	Bachelor's degree	None	Long-term on-the-job training
Mathematicians	15-2021	3.5	4.3	0.8	22.7	—	1.7	\$101,360	Master's degree	None	None
Operations research analysts	15-2031	73.2	92.7	19.5	26.7	0.9	36.0	\$72,100	Bachelor's degree	None	None
Statisticians	15-2041	27.6	34.9	7.4	26.7	0.6	16.1	\$75,560	Master's degree	None	None
Miscellaneous mathematical science occupations	15-2090	3.9	4.4	0.5	12.9	33.4	1.5	\$56,410	—	—	—
Mathematical technicians	15-2091	1.9	2.1	0.2	12.6	33.5	0.7	\$56,820	Bachelor's degree	None	None
Mathematical science occupations, all other	15-2099	1.9	2.2	0.3	13.3	33.4	0.7	\$56,120	Bachelor's degree	None	None
Architecture and engineering occupations	17-0000	2,474.5	2,654.0	179.6	7.3	2.9	763.9	\$73,540	—	—	—
Architects, surveyors, and cartographers	17-1000	182.1	210.3	28.2	15.5	16.0	70.0	\$66,380	—	—	—
Architects, except naval	17-1010	127.5	149.0	21.4	16.8	21.7	51.7	\$71,700	—	—	—
Architects, except landscape and naval	17-1011	107.4	126.0	18.6	17.3	21.9	44.1	\$73,090	Bachelor's degree	None	Internship/residency
Landscape architects	17-1011	20.1	22.9	2.9	14.3	20.9	7.6	\$64,180	Bachelor's degree	None	Internship/residency

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	2012	2022	Number	Percent							
	2										
Surveyors, cartographers, and photogrammetrists	17-1020	54.5	61.3	6.8	12.4	2.5	18.3	\$56,530	—	—	—
Cartographers and photogrammetrists	17-1021	12.1	14.5	2.4	19.6	2.0	4.9	\$57,440	Bachelor's degree	None	None
Surveyors	17-1022	42.4	46.8	4.4	10.3	2.7	13.4	\$56,230	Bachelor's degree	Less than 5 years	None
Engineers	17-2000	1,589.6	1,726.1	136.5	8.6	1.9	544.3	\$86,200	—	—	—
Aerospace engineers	17-2011	83.0	89.1	6.1	7.3	1.1	25.4	\$103,720	Bachelor's degree	None	None
Agricultural engineers	17-2021	2.6	2.7	0.1	4.8	—	0.8	\$74,000	Bachelor's degree	None	None
Biomedical engineers	17-2031	19.4	24.6	5.2	26.6	—	10.1	\$86,960	Bachelor's degree	None	None
Chemical engineers	17-2041	33.3	34.8	1.5	4.5	—	9.2	\$94,350	Bachelor's degree	None	None
Civil engineers	17-2051	272.9	326.6	53.7	19.7	2.9	120.1	\$79,340	Bachelor's degree	None	None
Computer hardware engineers	17-2061	83.3	89.4	6.2	7.4	3.0	24.1	\$100,920	Bachelor's degree	None	None
Electrical and electronics engineers	17-2070	306.1	318.7	12.6	4.1	2.0	79.4	\$89,630	—	—	—
Electrical engineers	17-2071	166.1	174.0	7.9	4.7	2.1	44.1	\$87,920	Bachelor's degree	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Electronics engineers, except computer	17-2072	140.0	144.8	4.8	3.4	1.9	35.3	\$91,820	Bachelor's degree	None	None
Environmental engineers	17-2081	53.2	61.4	8.1	15.3	1.9	21.1	\$80,890	Bachelor's degree	None	None
Industrial engineers, including health and safety	17-2110	247.4	260.1	12.7	5.1	0.6	85.1	\$78,690	—	—	—
Health and safety engineers, except mining safety engineers and inspectors	17-2111	24.1	26.7	2.6	11.0	0.6	9.7	\$76,830	Bachelor's degree	None	None
Industrial engineers	17-2112	223.3	233.4	10.1	4.5	0.6	75.4	\$78,860	Bachelor's degree	None	None
Marine engineers and naval architects	17-2121	7.3	8.1	0.8	10.3	3.7	2.6	\$88,100	Bachelor's degree	None	None
Materials engineers	17-2131	23.2	23.4	0.2	0.9	—	7.5	\$85,150	Bachelor's degree	None	None
Mechanical engineers	17-2141	258.1	269.7	11.6	4.5	0.6	99.7	\$80,580	Bachelor's degree	None	None
Mining and geological engineers, including mining safety engineers	17-2151	7.9	8.9	1.0	12.0	1.2	3.0	\$84,320	Bachelor's degree	None	None
Nuclear engineers	17-2161	20.4	22.3	1.9	9.3	—	7.1	\$104,270	Bachelor's degree	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012–22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012–22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012–22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
Petroleum engineers	17-2171	38.5	48.4	9.8	25.5	3.2	19.6	\$130,280	Bachelor's degree	None	None
Engineers, all other	17-2199	133.0	138.1	5.1	3.8	5.0	29.5	\$92,030	Bachelor's degree	None	None
Drafters, engineering technicians, and mapping technicians	17-3000	702.8	717.7	14.8	2.1	1.9	149.6	\$51,720	—	—	—
Drafters	17-3010	199.8	202.0	2.2	1.1	3.1	32.1	\$49,630	—	—	—
Architectural and civil drafters	17-3011	87.9	88.5	0.7	0.8	3.1	12.4	\$47,870	Associate's degree	None	None
Electrical and electronics drafters	17-3012	29.6	32.5	2.9	9.6	3.2	6.8	\$55,700	Associate's degree	None	None
Mechanical drafters	17-3013	66.7	63.4	-3.3	-4.9	3.2	8.9	\$50,360	Associate's degree	None	None
Drafters, all other	17-3019	15.6	17.6	2.0	12.7	3.1	4.1	\$46,110	Associate's degree	None	None
Engineering technicians, except drafters	17-3020	449.1	454.4	5.3	1.2	0.2	100.5	\$53,920	—	—	—
Aerospace engineering and operations technicians	17-3021	9.9	9.9	0.0	-0.4	—	2.1	\$61,530	Associate's degree	None	None
Civil engineering technicians	17-3022	73.1	73.6	0.4	0.6	0.2	15.6	\$47,560	Associate's degree	None	None
Electrical and electronics engineering technicians	17-3023	146.5	146.5	0.0	0.0	0.3	30.4	\$57,850	Associate's degree	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Electromechanical technicians	17-3024	17.3	18.0	0.7	3.9	—	4.3	\$51,820	Associate's degree	None	None
Environmental engineering technicians	17-3025	19.0	22.5	3.5	18.4	—	7.4	\$45,350	Associate's degree	None	None
Industrial engineering technicians	17-3026	68.0	65.8	-2.2	-3.2	0.3	14.1	\$50,980	Associate's degree	None	None
Mechanical engineering technicians	17-3027	47.5	49.7	2.2	4.7	0.3	12.1	\$51,980	Associate's degree	None	None
Engineering technicians, except drafters, all other	17-3029	67.7	68.3	0.6	0.9	0.2	14.6	\$59,440	Associate's degree	None	None
Surveying and mapping technicians	17-3031	54.0	61.3	7.3	13.5	11.2	17.0	\$39,670	High school diploma or equivalent	None	Moderate-term on-the-job training
Life, physical, and social science occupations	19-0000	1,249.1	1,374.8	125.7	10.1	5.4	488.2	\$60,100	—	—	—
Life scientists	19-1000	294.5	321.8	27.2	9.2	3.1	104.7	\$68,780	—	—	—
Agricultural and food scientists	19-1010	38.5	42.0	3.6	9.3	13.6	16.4	\$58,610	—	—	—
Animal scientists	19-1011	2.7	3.0	0.2	8.8	11.0	1.2	\$61,680	Doctoral or professional degree	None	None
Food scientists and technologists	19-1012	19.4	21.5	2.1	10.8	15.6	8.5	\$58,070	Bachelor's degree	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Soil and plant scientists	19-1013	16.3	17.6	1.2	7.5	11.7	6.7	\$58,740	Bachelor's degree	None	None
Biological scientists	19-1020	103.7	111.3	7.6	7.3	2.3	37.4	\$69,850	—	—	—
Biochemists and biophysicists	19-1021	29.2	34.6	5.4	18.6	3.7	13.7	\$81,480	Doctoral or professional degree	None	None
Microbiologists	19-1022	20.1	21.6	1.4	7.0	2.8	7.1	\$66,260	Bachelor's degree	None	None
Zoologists and wildlife biologists	19-1023	20.1	21.1	1.0	4.9	1.3	6.7	\$57,710	Bachelor's degree	None	None
Biological scientists, all other	19-1029	34.3	34.1	-0.2	-0.6	1.3	9.8	\$72,700	Bachelor's degree	None	None
Conservation scientists and foresters	19-1030	34.2	35.0	0.9	2.5	1.8	10.8	\$59,060	—	—	—
Conservation scientists	19-1031	22.1	22.3	0.1	0.5	1.5	6.6	\$61,100	Bachelor's degree	None	None
Foresters	19-1032	12.0	12.8	0.7	6.1	2.2	4.2	\$55,950	Bachelor's degree	None	None
Medical scientists	19-1040	108.3	122.5	14.2	13.1	0.8	37.1	\$76,080	—	—	—
Epidemiologists	19-1041	5.1	5.7	0.5	10.2	—	1.6	\$65,270	Master's degree	None	None
Medical scientists, except epidemiologists	19-1042	103.1	116.8	13.7	13.3	0.8	35.5	\$76,980	Doctoral or professional degree	None	None
Life scientists	19-	9.9	10.9	1.0	10.2	—	3.1	\$65,330	Bachelor'	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
all other	1099							s degree			
Physical scientists	19-2000	297.4	328.1	30.7	10.3	3.1	110.6	\$74,850	—	—	—
Astronomers and physicists	19-2010	23.3	25.7	2.4	10.3	6.9	8.1	\$106,360	—	—	—
Astronomers	19-2011	2.7	2.9	0.3	10.0	5.2	0.9	\$96,460	Doctoral or professional degree	None	None
Physicists	19-2012	20.6	22.7	2.1	10.4	7.1	7.2	\$106,840	Doctoral or professional degree	None	None
Atmospheric and space scientists	19-2021	11.1	12.2	1.1	10.0	1.7	3.8	\$89,260	Bachelor's degree	None	None
Chemists and materials scientists	19-2030	96.2	101.6	5.4	5.6	0.7	30.4	\$73,060	—	—	—
Chemists	19-2031	87.9	92.9	5.0	5.6	0.7	27.8	\$71,770	Bachelor's degree	None	None
Materials scientists	19-2032	8.3	8.8	0.4	5.2	0.8	2.6	\$88,990	Bachelor's degree	None	None
Environmental scientists and geoscientists	19-2040	135.5	155.5	20.0	14.7	2.5	59.9	\$69,750	—	—	—
Environmental scientists and specialists, including health	19-2041	90.0	103.2	13.2	14.6	2.2	39.7	\$63,570	Bachelor's degree	None	None
Geoscientists, except	19-2042	38.2	44.2	6.0	15.8	3.3	17.3	\$90,890	Bachelor's degree	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
hydrologists and geographers	2										
Hydrologists	19-2043	7.4	8.1	0.8	10.4	1.9	2.9	\$75,530	Master's degree	None	None
Physical scientists, all other	19-2099	31.2	33.1	1.8	5.9	10.3	8.3	\$91,640	Bachelor's degree	None	None
Social scientists and related workers	19-3000	290.4	323.2	32.8	11.3	16.1	111.0	\$69,290	—	—	—
Economists	19-3011	16.9	19.2	2.3	13.9	1.8	7.4	\$91,860	Master's degree	None	None
Survey researchers	19-3022	18.0	21.2	3.2	17.6	—	5.6	\$45,050	Master's degree	None	None
Psychologists	19-3030	160.2	178.9	18.7	11.7	26.5	62.3	\$69,280	—	—	—
Clinical, counseling, and school psychologists	19-3031	145.1	161.5	16.4	11.3	27.2	55.9	\$67,650	Doctoral or professional degree	None	Internship/residency
Industrial-organizational psychologists	19-3032	1.6	2.5	0.9	53.4	35.9	1.3	\$83,580	Master's degree	None	Internship/residency
Psychologists, all other	19-3039	13.4	14.9	1.4	10.7	18.1	5.1	\$90,020	Master's degree	None	Internship/residency
Sociologists	19-3041	2.6	3.0	0.4	15.0	—	1.1	\$74,960	Master's degree	None	None
Urban and regional planners	19-3051	38.7	42.7	4.0	10.3	—	21.4	\$65,230	Master's degree	None	None
Miscellaneous social	19-309	54.1	58.3	4.2	7.7	7.1	13.2	\$74,740	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

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	2012	2022	Number	Percent							
scientists and related workers	0										
Anthropologists and archeologists	19-3091	7.2	8.6	1.4	19.4	12.3	2.6	\$57,420	Master's degree	None	None
Geographers	19-3092	1.7	2.2	0.5	29.0	7.5	0.8	\$74,760	Bachelor's degree	None	None
Historians	19-3093	3.8	4.0	0.2	6.0	7.1	0.8	\$52,480	Master's degree	None	None
Political scientists	19-3094	6.6	8.0	1.4	21.3	6.5	2.5	\$102,000	Master's degree	None	None
Social scientists and related workers, all other	19-3099	34.8	35.5	0.7	1.9	6.1	6.4	\$76,540	Bachelor's degree	None	None
Life, physical, and social science technicians	19-4000	366.8	401.8	35.0	9.5	0.8	162.0	\$41,130	—	—	—
Agricultural and food science technicians	19-4011	25.9	26.7	0.8	2.9	0.8	10.1	\$34,070	Associate's degree	None	Moderate-term on-the-job training
Biological technicians	19-4021	80.2	88.3	8.0	10.0	—	32.1	\$39,750	Bachelor's degree	None	None
Chemical technicians	19-4031	63.6	69.5	6.0	9.4	1.5	21.6	\$42,920	Associate's degree	None	Moderate-term on-the-job training
Geological and petroleum technicians	19-4041	15.8	18.2	2.4	15.1	—	8.1	\$52,700	Associate's degree	None	Moderate-term on-the-job training
Nuclear technicians	19-4051	8.1	9.3	1.2	14.9	—	4.1	\$69,060	Associate's degree	None	Moderate-term on-the-job training

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(Numbers in thousands)**

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	2012	2022	Number	Percent						
Social science research assistants 19-4061	29.6	34.0	4.4	15.0	—	16.1	\$37,140	Associate's degree	None	None
Miscellaneous life, physical, and social science technicians 19-4090	143.6	155.8	12.2	8.5	1.3	69.8	\$41,210	—	—	—
Environmental science and protection technicians, including health 19-4091	32.8	38.9	6.2	18.8	2.2	19.0	\$41,240	Associate's degree	None	None
Forensic science technicians 19-4092	12.9	13.7	0.7	5.8	—	5.8	\$52,840	Bachelor's degree	None	Moderate-term on-the-job training
Forest and conservation technicians 19-4093	34.0	32.8	-1.2	-3.5	—	13.4	\$33,920	Associate's degree	None	None
Life, physical, and social science technicians, all other 19-4099	63.9	70.4	6.5	10.1	1.6	31.6	\$43,130	Associate's degree	None	None
Community and social service occupations 21-0000	2,374.7	2,783.4	408.8	17.2	2.0	962.9	\$40,400	—	—	—
Counselors, social workers, and other community and social service specialists 21-1000	1,940.9	2,309.4	368.5	19.0	2.3	814.2	\$40,400	—	—	—
Counselors 21-1010	665.5	802.3	136.8	20.6	5.7	278.3	\$44,040	—	—	—
Substance abuse and 21-1011	89.6	117.7	28.2	31.4	7.9	47.2	\$38,520	High school	None	Moderate-term on-the-

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
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	2012	2022	Number	Percent							
behavioral disorder counselors	1							diploma or equivalent		job training	
Educational, guidance, school, and vocational counselors	21-1012	262.3	293.5	31.2	11.9	2.9	87.0	\$53,610	Master's degree	None	None
Marriage and family therapists	21-1013	37.8	49.4	11.6	30.6	7.4	19.6	\$46,670	Master's degree	None	Internship/residency
Mental health counselors	21-1014	128.4	165.1	36.7	28.5	8.3	64.0	\$40,080	Master's degree	None	Internship/residency
Rehabilitation counselors	21-1015	117.5	140.9	23.4	19.9	7.2	48.4	\$33,880	Master's degree	None	None
Counselors, all other	21-1019	29.8	35.6	5.8	19.4	5.2	12.1	\$43,810	Master's degree	None	None
Social workers	21-1020	607.3	721.5	114.1	18.8	1.0	242.8	\$44,200	—	—	—
Child, family, and school social workers	21-1021	285.7	328.8	43.1	15.1	0.7	103.6	\$41,530	Bachelor's degree	None	None
Healthcare social workers	21-1022	146.2	185.5	39.2	26.8	1.3	70.2	\$49,830	Master's degree	None	None
Mental health and substance abuse social workers	21-1023	114.2	140.2	26.0	22.8	1.3	50.2	\$39,980	Bachelor's degree	None	None
Social workers, all other	21-1029	61.2	67.0	5.8	9.5	0.6	18.8	\$54,560	Bachelor's degree	None	None
Miscellaneous community and social	21-1090	668.0	785.6	117.6	17.6	0.0	293.2	\$34,130	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
service specialists											
Health educators	21-1091	58.9	70.1	11.2	19.0	0.1	26.6	\$48,790	Bachelor's degree	None	None
Probation officers and correctional treatment specialists	21-1092	90.3	89.3	-0.9	-1.0	—	23.6	\$48,190	Bachelor's degree	None	Short-term on-the-job training
Social and human service assistants	21-1093	372.7	453.9	81.2	21.8	—	178.7	\$28,850	High school diploma or equivalent	None	Short-term on-the-job training
Community health workers	21-1094	40.5	50.7	10.2	25.1	—	20.8	\$34,620	High school diploma or equivalent	None	Short-term on-the-job training
Community and social service specialists, all other	21-1099	105.6	121.6	16.0	15.1	0.1	43.6	\$41,060	Master's degree	None	None
Religious workers	21-2000	433.8	474.1	40.3	9.3	0.7	148.7	\$40,360	—	—	—
Clergy	21-2011	239.6	263.2	23.6	9.8	0.8	72.6	\$44,060	Bachelor's degree	None	Moderate-term on-the-job training
Directors, religious activities and education	21-2021	134.2	145.5	11.3	8.4	0.8	57.0	\$37,280	Bachelor's degree	Less than 5 years	None
Religious workers, all other	21-2099	59.9	65.3	5.4	8.9	—	19.1	\$26,380	Bachelor's degree	None	None
Legal occupations	23-000	1,247.0	1,379.9	132.9	10.7	15.8	333.8	\$75,270	—	—	—

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	2012	2022	Number	Percent							
	0										
Lawyers, judges, and related workers	23-1000	823.6	900.2	76.6	9.3	20.4	208.8	\$110,740	—	—	—
Lawyers and judicial law clerks	23-1010	772.0	847.3	75.4	9.8	21.5	199.0	\$112,120	—	—	—
Lawyers	23-1011	759.8	834.7	74.8	9.8	21.8	196.5	\$113,530	Doctoral or professional degree	None	None
Judicial law clerks	23-1012	12.1	12.7	0.5	4.3	4.2	2.5	\$47,120	Doctoral or professional degree	None	None
Judges, magistrates, and other judicial workers	23-1020	51.6	52.9	1.3	2.5	2.7	9.8	\$95,360	—	—	—
Administrative law judges, adjudicators, and hearing officers	23-1021	14.9	14.7	-0.3	-1.7	—	2.4	\$87,240	Doctoral or professional degree	Less than 5 years	Short-term on-the-job training
Arbitrators, mediators, and conciliators	23-1022	8.4	9.3	0.9	10.4	16.7	2.2	\$61,280	Bachelor's degree	Less than 5 years	Moderate-term on-the-job training
Judges, magistrate judges, and magistrates	23-1023	28.3	29.0	0.7	2.3	—	5.2	\$115,760	Doctoral or professional degree	5 years or more	Short-term on-the-job training
Legal support workers	23-2000	423.4	479.7	56.3	13.3	7.0	125.1	\$46,850	—	—	—
Paralegals and legal	23-201	277.0	323.3	46.2	16.7	1.9	91.2	\$46,990	Associate's degree	None	None

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	2012	2022	Number	Percent							
assistants	1										
Miscellaneous legal support workers	23-2090	146.3	156.4	10.1	6.9	16.7	33.8	\$46,560	—	—	—
Court reporters	23-2091	21.2	23.2	2.0	9.6	9.6	5.5	\$48,160	Postsecondary non-degree award	None	Short-term on-the-job training
Title examiners, abstractors, and searchers	23-2093	67.9	74.1	6.2	9.2	23.8	17.3	\$41,970	High school diploma or equivalent	None	Short-term on-the-job training
Legal support workers, all other	23-2099	57.3	59.0	1.8	3.1	10.9	11.1	\$52,660	High school diploma or equivalent	None	Short-term on-the-job training
Education, training, and library occupations	25-0000	9,115.9	10,131.7	1,015.8	11.1	2.0	2,896.9	\$46,020	—	—	—
Postsecondary teachers	25-1000	1,830.9	2,134.5	303.5	16.6	0.1	578.7	\$62,390	—	—	—
Business teachers, postsecondary	25-1011	103.4	118.5	15.2	14.7	0.1	30.7	\$73,660	Doctoral or professional degree	None	None
Math and computer teachers, postsecondary	25-1020	105.1	117.6	12.6	12.0	0.1	28.4	\$67,740	—	—	—
Computer science teachers, postsecondary	25-1021	41.7	47.0	5.3	12.7	—	11.6	\$72,200	Doctoral or professional degree	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
Mathematical science teachers, postsecondary	25-1022	63.3	70.6	7.3	11.5	—	16.8	\$64,990	Doctoral or professional degree	None	None
Engineering and architecture teachers, postsecondary	25-1030	51.7	58.0	6.3	12.2	—	14.1	\$88,800	—	—	—
Architecture teachers, postsecondary	25-1031	9.1	10.4	1.3	14.3	—	2.7	\$71,610	Doctoral or professional degree	None	None
Engineering teachers, postsecondary	25-1032	42.5	47.5	5.0	11.8	—	11.4	\$92,670	Doctoral or professional degree	None	None
Life sciences teachers, postsecondary	25-1040	77.3	90.6	13.3	17.2	0.1	24.9	\$75,650	—	—	—
Agricultural sciences teachers, postsecondary	25-1041	12.8	13.9	1.0	8.0	—	3.0	\$80,490	Doctoral or professional degree	None	None
Biological science teachers, postsecondary	25-1042	61.4	73.4	12.0	19.5	0.1	21.2	\$74,180	Doctoral or professional degree	None	None
Forestry and conservation science teachers, postsecondary	25-1043	3.1	3.4	0.3	9.9	—	0.8	\$81,930	Doctoral or professional degree	None	None
Physical sciences	25-105	62.2	70.4	8.2	13.2	0.1	17.6	\$75,460	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
teachers, postsecondary	0										
Atmospheric, earth, marine, and space sciences teachers, postsecondary	25-1051	13.2	14.7	1.5	11.4	—	3.5	\$82,180	Doctoral or professional degree	None	None
Chemistry teachers, postsecondary	25-1052	25.3	28.8	3.5	13.7	—	7.3	\$71,140	Doctoral or professional degree	None	None
Environmental science teachers, postsecondary	25-1053	6.3	7.1	0.8	13.2	—	1.8	\$77,320	Doctoral or professional degree	None	None
Physics teachers, postsecondary	25-1054	17.4	19.8	2.4	13.8	—	5.0	\$78,540	Doctoral or professional degree	None	None
Social sciences teachers, postsecondary	25-1060	143.3	163.2	19.9	13.9	0.1	41.5	\$70,580	—	—	—
Anthropology and archeology teachers, postsecondary	25-1061	7.0	7.9	0.9	12.5	—	1.9	\$76,020	Doctoral or professional degree	None	None
Area, ethnic, and cultural studies teachers, postsecondary	25-1062	12.4	14.3	1.9	15.8	—	3.8	\$67,360	Doctoral or professional degree	None	None
Economics	25-	16.8	19.2	2.4	14.2	—	4.9	\$87,950	Doctoral	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
teachers, postsecondary	1063							or professional degree			
Geography teachers, postsecondary	25-1064	5.5	6.1	0.6	10.6	—	1.4	\$67,820	Doctoral or professional degree	None	None
Political science teachers, postsecondary	25-1065	21.1	24.1	3.1	14.6	—	6.2	\$72,170	Doctoral or professional degree	None	None
Psychology teachers, postsecondary	25-1066	47.5	54.2	6.8	14.2	0.1	13.9	\$68,020	Doctoral or professional degree	None	None
Sociology teachers, postsecondary	25-1067	20.6	23.3	2.6	12.7	—	5.7	\$66,150	Doctoral or professional degree	None	None
Social sciences teachers, postsecondary, all other	25-1069	12.4	14.1	1.7	13.4	—	3.5	\$69,890	Doctoral or professional degree	None	None
Health teachers, postsecondary	25-1070	257.9	350.4	92.6	35.9	0.1	131.3	\$73,920	—	—	—
Health specialties teachers, postsecondary	25-1071	190.0	258.6	68.6	36.1	0.1	97.2	\$81,140	Doctoral or professional degree	Less than 5 years	None
Nursing instructors and teachers, postsecondary	25-1072	67.8	91.8	24.0	35.4	0.1	34.2	\$64,850	Master's degree	Less than 5 years	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
	2012	2022	Number	Percent						
Education and library science teachers, postsecondary	25-1080	84.9	97.1	12.2	14.4	0.1	25.0	\$59,810	—	—
Education teachers, postsecondary	25-1081	79.3	90.9	11.6	14.6	0.1	23.5	\$59,350	Doctoral or professional degree	None
Library science teachers, postsecondary	25-1082	5.5	6.1	0.6	10.8	—	1.4	\$65,780	Doctoral or professional degree	None
Law, criminal justice, and social work teachers, postsecondary	25-1110	48.7	56.0	7.3	14.9	0.1	14.6	\$68,550	—	—
Criminal justice and law enforcement teachers, postsecondary	25-1111	16.4	18.5	2.1	13.1	—	4.6	\$58,040	Doctoral or professional degree	None
Law teachers, postsecondary	25-1112	20.0	23.5	3.5	17.6	—	6.5	\$99,950	Doctoral or professional degree	None
Social work teachers, postsecondary	25-1113	12.4	14.0	1.6	13.1	—	3.5	\$63,250	Doctoral or professional degree	None
Arts, communications, and humanities teachers,	25-1120	333.3	382.2	48.9	14.7	0.1	99.0	\$61,710	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
postsecondary											
Art, drama, and music teachers, postsecondary	25-1121	114.3	132.6	18.3	16.0	0.1	35.5	\$62,160	Master's degree	None	None
Communications teachers, postsecondary	25-1122	36.5	41.2	4.7	12.7	—	10.1	\$62,180	Doctoral or professional degree	None	None
English language and literature teachers, postsecondary	25-1123	86.8	97.4	10.6	12.2	0.1	23.6	\$60,040	Doctoral or professional degree	None	None
Foreign language and literature teachers, postsecondary	25-1124	35.8	41.2	5.5	15.3	0.1	10.8	\$58,670	Doctoral or professional degree	None	None
History teachers, postsecondary	25-1125	29.2	33.1	4.0	13.6	—	8.3	\$65,870	Doctoral or professional degree	None	None
Philosophy and religion teachers, postsecondary	25-1126	30.8	36.7	6.0	19.3	0.2	10.6	\$64,990	Doctoral or professional degree	None	None
Miscellaneous postsecondary teachers	25-1190	563.2	630.3	67.1	11.9	0.1	151.7	\$47,640	—	—	—
Graduate teaching assistants	25-1191	150.3	165.8	15.5	10.3	0.1	38.0	\$31,270	Bachelor's degree	None	None
Home economics	25-119	5.6	6.2	0.5	9.6	—	1.4	\$64,040	Master's degree	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
teachers, postsecondary	2										
Recreation and fitness studies teachers, postsecondary	25-1193	23.0	25.8	2.8	12.2	—	6.3	\$57,920	Doctoral or professional degree	None	None
Vocational education teachers, postsecondary	25-1194	136.2	152.3	16.1	11.8	0.2	36.6	\$47,990	Bachelor's degree	Less than 5 years	None
Postsecondary teachers, all other	25-1199	248.0	280.2	32.2	13.0	0.1	69.5	\$64,290	Doctoral or professional degree	None	None
Preschool, primary, secondary, and special education school teachers	25-2000	4,115.3	4,544.7	429.4	10.4	0.3	1,401.2	\$52,240	—	—	—
Preschool and kindergarten teachers	25-2010	596.7	693.7	96.9	16.2	1.5	264.5	\$33,040	—	—	—
Preschool teachers, except special education	25-2011	438.2	514.6	76.4	17.4	1.9	199.4	\$27,130	Associate's degree	None	None
Kindergarten teachers, except special education	25-2012	158.5	179.1	20.6	13.0	0.4	65.1	\$50,120	Bachelor's degree	None	Internship/residency
Elementary and middle school teachers	25-2020	1,993.8	2,238.6	244.8	12.3	—	683.5	\$53,420	—	—	—
Elementary	25-	1,361	1,529.	167.9	12.3	—	467.4	\$53,400	Bachelor'	None	Internship/res

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	2012	2022	Number	Percent							
school teachers, except special education	2021	2,021	2,100	79	0.0	—	—	High school diploma	—	Residency	
Middle school teachers, except special and career/technical education	25-2022	614.4	690.4	76.0	12.4	—	211.2	\$53,430	Bachelor's degree	None	Internship/residency
Career/technical education teachers, middle school	25-2023	18.2	19.1	0.9	5.2	—	4.9	\$54,220	Bachelor's degree	Less than 5 years	Internship/residency
Secondary school teachers	25-2030	1,041.3	1,098.4	57.2	5.5	—	340.1	\$55,060	—	—	—
Secondary school teachers, except special and career/technical education	25-2031	955.8	1,008.7	52.9	5.5	—	312.6	\$55,050	Bachelor's degree	None	Internship/residency
Career/technical education teachers, secondary school	25-2032	85.4	89.7	4.3	5.0	—	27.5	\$55,160	Bachelor's degree	Less than 5 years	Internship/residency
Special education teachers	25-2050	483.5	514.0	30.5	6.3	0.4	113.0	\$54,880	—	—	—
Special education teachers, preschool	25-2051	22.3	25.9	3.6	16.2	1.5	7.4	\$52,480	Bachelor's degree	None	Internship/residency
Special education teachers, kindergarten and elementary school	25-2052	194.6	206.6	12.0	6.2	0.3	45.2	\$53,820	Bachelor's degree	None	Internship/residency

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

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		2012	2022	Number	Percent						
Special education teachers, middle school	25-2053	94.6	99.5	4.9	5.2	0.2	21.1	\$55,780	Bachelor's degree	None	Internship/residency
Special education teachers, secondary school	25-2054	131.3	137.4	6.1	4.6	0.3	28.5	\$56,830	Bachelor's degree	None	Internship/residency
Special education teachers, all other	25-2059	40.7	44.6	3.9	9.5	0.9	10.8	\$51,980	Bachelor's degree	None	Internship/residency
Other teachers and instructors	25-3000	1,375.3	1,501.8	126.6	9.2	11.2	361.3	\$30,100	—	—	—
Adult basic and secondary education and literacy teachers and instructors	25-3011	77.4	84.2	6.7	8.7	9.6	19.9	\$48,590	Bachelor's degree	None	Internship/residency
Self-enrichment education teachers	25-3021	316.2	360.1	43.9	13.9	20.4	97.9	\$35,320	High school diploma or equivalent	Less than 5 years	None
Teachers and instructors, all other	25-3099	981.6	1,057.5	75.9	7.7	8.4	243.5	\$28,540	Bachelor's degree	None	Internship/residency
Librarians, curators, and archivists	25-4000	283.9	307.1	23.3	8.2	0.3	120.5	\$44,320	—	—	—
Archivists, curators, and museum technicians	25-4010	29.3	32.6	3.3	11.4	3.3	9.7	\$44,410	—	—	—
Archivists	25-4011	6.5	7.6	1.1	16.6	3.3	2.5	\$47,340	Master's degree	None	None

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		2012	2022	Number	Percent						
Curators	25-4012	11.4	12.9	1.4	12.5	3.7	3.9	\$49,590	Master's degree	None	None
Museum technicians and conservators	25-4013	11.3	12.1	0.8	7.1	3.0	3.3	\$38,220	Bachelor's degree	None	None
Librarians	25-4021	148.4	159.4	11.0	7.4	—	44.4	\$55,370	Master's degree	None	None
Library technicians	25-4031	106.2	115.2	9.0	8.4	—	66.3	\$30,660	Postsecondary non-degree award	None	None
Other education, training, and library occupations	25-9000	1,510.5	1,643.5	133.0	8.8	0.7	435.2	\$25,480	—	—	—
Audio-visual and multimedia collections specialists	25-9011	9.7	9.6	-0.1	-0.8	3.1	0.8	\$43,350	Bachelor's degree	Less than 5 years	None
Farm and home management advisors	25-9021	13.7	15.0	1.3	9.7	2.4	2.5	\$46,760	Master's degree	None	None
Instructional coordinators	25-9031	147.7	166.2	18.5	12.5	4.2	31.1	\$60,050	Master's degree	5 years or more	None
Teacher assistants	25-9041	1,223.4	1,328.5	105.0	8.6	0.0	382.6	\$23,640	Some college, no degree	None	None
Education, training, and library workers, all other	25-9099	116.0	124.2	8.2	7.1	3.2	18.1	\$36,610	Bachelor's degree	None	None
Arts, design, entertainment	27-000	2,570.9	2,751.6	180.6	7.0	25.8	799.5	\$43,930	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

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	2012	2022	Number	Percent							
Art, sports, and media occupations	0										
Art and design workers	27-1000	753.7	793.4	39.8	5.3	32.9	239.7	\$42,250	—	—	—
Artists and related workers	27-1010	195.1	203.0	7.8	4.0	55.8	54.3	\$63,320	—	—	—
Art directors	27-1011	74.8	77.0	2.2	3.0	57.2	20.0	\$80,880	Bachelor's degree	5 years or more	None
Craft artists	27-1012	11.2	11.6	0.4	3.3	57.8	3.0	\$29,600	High school diploma or equivalent	None	Long-term on-the-job training
Fine artists, including painters, sculptors, and illustrators	27-1013	28.8	29.9	1.1	3.8	56.6	7.9	\$44,850	High school diploma or equivalent	None	Long-term on-the-job training
Multimedia artists and animators	27-1014	68.9	73.2	4.3	6.3	56.9	20.6	\$61,370	Bachelor's degree	None	Moderate-term on-the-job training
Artists and related workers, all other	27-1019	11.4	11.2	-0.2	-1.5	36.4	2.7	\$59,840	High school diploma or equivalent	None	Long-term on-the-job training
Designers	27-1020	558.5	590.5	31.9	5.7	25.0	185.4	\$39,050	—	—	—
Commercial and industrial designers	27-1021	39.2	40.9	1.7	4.4	25.3	12.1	\$59,610	Bachelor's degree	None	None
Fashion designers	27-1022	22.3	21.7	-0.7	-3.0	25.3	5.9	\$62,860	Bachelor's degree	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

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	2012	2022	Number	Percent							
Floral designers	27-1023	62.4	57.3	-5.0	-8.0	26.0	16.5	\$23,810	High school diploma or equivalent	None	Moderate-term on-the-job training
Graphic designers	27-1024	259.5	276.9	17.4	6.7	24.4	86.0	\$44,150	Bachelor's degree	None	None
Interior designers	27-1025	54.9	61.9	7.0	12.8	25.2	21.5	\$47,600	Bachelor's degree	None	None
Merchandise displayers and window trimmers	27-1026	98.7	108.7	10.0	10.1	25.6	36.1	\$26,410	High school diploma or equivalent	None	Moderate-term on-the-job training
Set and exhibit designers	27-1027	11.4	12.1	0.7	6.3	23.4	3.7	\$50,300	Bachelor's degree	None	None
Designers, all other	27-1029	10.2	11.0	0.8	8.0	24.8	3.5	\$45,330	Bachelor's degree	None	None
Entertainers and performers, sports and related workers	27-2000	766.9	830.0	63.0	8.2	20.9	283.6	\$38,530	—	—	—
Actors, producers, and directors	27-2010	183.2	189.4	6.2	3.4	13.6	66.8	\$60,080	—	—	—
Actors	27-2011	79.8	83.0	3.3	4.1	11.6	28.9	—	Some college, no degree	None	Long-term on-the-job training
Producers and directors	27-2012	103.5	106.4	2.9	2.8	15.2	37.9	\$71,350	Bachelor's degree	Less than 5 years	None
Athletes, coaches,	27-202	276.3	314.8	38.5	13.9	10.9	120.4	\$28,580	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

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	2012	2022	Number	Percent							
Umpires, and related workers	0										
Athletes and sports competitors	27-2021	14.9	15.9	1.0	6.7	16.0	5.4	\$40,060	High school diploma or equivalent	None	Long-term on-the-job training
Coaches and scouts	27-2022	243.9	280.1	36.2	14.8	10.8	108.5	\$28,360	Bachelor's degree	None	None
Umpires, referees, and other sports officials	27-2023	17.5	18.8	1.3	7.7	8.6	6.5	\$23,290	High school diploma or equivalent	None	Moderate-term on-the-job training
Dancers and choreographers	27-2030	25.8	29.2	3.4	13.2	28.6	10.8	\$33,010	—	—	—
Dancers	27-2031	15.6	16.5	0.9	5.9	28.9	5.4	—	High school diploma or equivalent	None	Long-term on-the-job training
Choreographers	27-2032	10.2	12.7	2.5	24.3	28.2	5.4	\$38,120	High school diploma or equivalent	5 years or more	Long-term on-the-job training
Musicians, singers, and related workers	27-2040	245.0	257.3	12.2	5.0	31.7	78.3	—	—	—	—
Music directors and composers	27-2041	77.6	81.1	3.5	4.5	22.6	24.4	\$47,350	Bachelor's degree	Less than 5 years	None
Musicians and singers	27-2042	167.4	176.2	8.7	5.2	36.0	53.9	—	High school diploma	None	Long-term on-the-job training

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(Numbers in thousands)**

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	2012	2022	Number	Percent							
								or equivalent			
Entertainers and performers, sports and related workers, all other	27-2099	36.6	39.2	2.7	7.3	54.0	7.2	—	High school diploma or equivalent	None	None
Media and communication workers	27-3000	726.9	787.1	60.2	8.3	20.2	216.2	\$50,930	—	—	—
Announcers	27-3010	52.0	52.7	0.8	1.5	24.5	11.6	\$27,750	—	—	—
Radio and television announcers	27-3011	41.3	41.2	0.0	-0.1	24.4	8.6	\$28,020	Bachelor's degree	None	None
Public address system and other announcers	27-3012	10.7	11.5	0.8	7.6	24.6	3.0	\$26,230	High school diploma or equivalent	None	Short-term on-the-job training
News analysts, reporters and correspondents	27-3020	57.6	50.4	-7.2	-12.6	13.1	19.6	\$37,090	—	—	—
Broadcast news analysts	27-3021	5.9	5.8	-0.1	-2.3	12.9	2.0	\$55,380	Bachelor's degree	None	None
Reporters and correspondents	27-3022	51.7	44.6	-7.1	-13.8	13.1	17.6	\$35,870	Bachelor's degree	None	None
Public relations specialists	27-3031	229.1	256.5	27.4	12.0	4.2	58.8	\$54,170	Bachelor's degree	None	None
Writers and editors	27-304	293.9	302.3	8.4	2.9	33.1	82.4	\$57,460	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012–22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012–22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012–22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
	0										
Editors	27-3041	115.3	112.5	-2.8	-2.4	10.2	28.0	\$53,880	Bachelor's degree	Less than 5 years	None
Technical writers	27-3042	49.5	56.9	7.4	14.8	4.9	22.6	\$65,500	Bachelor's degree	Less than 5 years	Short-term on-the-job training
Writers and authors	27-3043	129.1	132.9	3.8	3.0	64.4	31.8	\$55,940	Bachelor's degree	None	Moderate-term on-the-job training
Miscellaneous media and communication workers	27-3090	94.3	125.2	30.8	32.7	20.7	43.8	\$45,350	—	—	—
Interpreters and translators	27-3091	63.6	92.9	29.3	46.1	18.9	38.1	\$45,430	Bachelor's degree	None	Short-term on-the-job training
Media and communication workers, all other	27-3099	30.7	32.3	1.5	4.9	24.4	5.7	\$45,160	High school diploma or equivalent	None	Short-term on-the-job training
Media and communication equipment workers	27-4000	323.4	341.0	17.6	5.4	33.4	60.0	\$39,450	—	—	—
Broadcast and sound engineering technicians and radio operators	27-4010	122.8	133.4	10.6	8.6	12.5	32.8	\$41,210	—	—	—
Audio and video equipment technicians	27-4011	67.7	76.9	9.3	13.7	12.0	21.5	\$41,850	Postsecondary non-degree award	None	Short-term on-the-job training
Broadcast technicians	27-4012	36.7	37.9	1.2	3.2	13.1	7.8	\$37,880	Associate's degree	None	Short-term on-the-job training
Radio operators	27-401	1.4	1.4	0.0	1.2	6.4	0.3	\$42,080	High school	None	Short-term on-the-job

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
	3							diploma or equivalent		training	
Sound engineering technicians	27-4014	17.0	17.1	0.1	0.7	13.7	3.2	\$46,310	Postsecondary non-degree award	None	Short-term on-the-job training
Photographers	27-4021	136.3	142.2	5.9	4.3	59.8	20.3	\$28,490	High school diploma or equivalent	None	Long-term on-the-job training
Television, video, and motion picture camera operators and editors	27-4030	49.5	50.9	1.4	2.8	22.9	5.2	\$46,280	—	—	—
Camera operators, television, video, and motion picture	27-4031	21.4	22.6	1.2	5.5	22.2	2.8	\$40,300	Bachelor's degree	None	None
Film and video editors	27-4032	28.1	28.3	0.2	0.6	23.5	2.3	\$51,300	Bachelor's degree	None	None
Media and communication equipment workers, all other	27-4099	14.8	14.6	-0.2	-1.5	—	1.9	\$68,810	High school diploma or equivalent	None	Short-term on-the-job training
Healthcare practitioners and technical occupations	29-0000	8,049.7	9,782.6	1,732.9	21.5	3.1	3,378.3	\$60,200	—	—	—
Health diagnosing and treating	29-1000	5,004.8	6,020.1	1,015.3	20.3	4.6	2,042.2	\$73,410	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
	2012	2022	Number	Percent						
practitioners										
Chiropractors 29-1011	44.4	50.9	6.5	14.6	37.1	15.2	\$66,160	Doctoral or professional degree	None	None
Dentists 29-1020	146.8	170.2	23.3	15.9	24.6	59.1	\$149,310	—	—	—
Dentists, general 29-1021	125.8	146.4	20.6	16.3	25.0	51.2	\$145,240	Doctoral or professional degree	None	None
Oral and maxillofacial surgeons 29-1022	6.7	7.8	1.1	16.1	24.8	2.7	>=\$187,200	Doctoral or professional degree	None	Internship/residency
Orthodontists 29-1023	7.5	8.7	1.2	16.3	25.6	3.0	>=\$187,200	Doctoral or professional degree	None	Internship/residency
Prosthodontists 29-1024	0.4	0.5	0.1	15.0	25.5	0.2	\$169,130	Doctoral or professional degree	None	Internship/residency
Dentists, all other specialists 29-1029	6.4	6.8	0.4	6.3	16.1	2.0	\$154,990	Doctoral or professional degree	None	Internship/residency
Dietitians and nutritionists 29-1031	67.4	81.6	14.2	21.1	11.1	22.3	\$55,240	Bachelor's degree	None	Internship/residency
Optometrists 29-1041	33.1	41.2	8.1	24.4	10.8	17.7	\$97,820	Doctoral or professional degree	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Pharmacists	29-1051	286.4	327.8	41.4	14.5	0.9	109.8	\$116,670	Doctoral or professional degree	None	None
Physicians and surgeons	29-1060	691.4	814.7	123.3	17.8	9.4	296.4	>=\$187,200	—	—	—
Anesthesiologists	29-1061	33.9	42.1	8.3	24.4	10.4	16.7	>=\$187,200	Doctoral or professional degree	None	Internship/residency
Family and general practitioners	29-1062	124.0	142.1	18.1	14.6	9.9	49.2	\$172,020	Doctoral or professional degree	None	Internship/residency
Internists, general	29-1063	51.3	58.6	7.3	14.1	10.3	20.1	>=\$187,200	Doctoral or professional degree	None	Internship/residency
Obstetricians and gynecologists	29-1064	23.6	27.0	3.4	14.4	10.4	9.3	>=\$187,200	Doctoral or professional degree	None	Internship/residency
Pediatricians, general	29-1065	34.7	40.1	5.4	15.7	10.2	14.1	\$154,650	Doctoral or professional degree	None	Internship/residency
Psychiatrists	29-1066	27.2	31.6	4.4	16.2	7.6	11.2	\$173,330	Doctoral or professional degree	None	Internship/residency
Surgeons	29-1067	47.9	59.0	11.1	23.2	10.1	23.1	>=\$187,200	Doctoral or professional degree	None	Internship/residency

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Physicians and surgeons, all other	29-1069	348.9	414.2	65.3	18.7	8.9	152.6	>=\$187,200	Doctoral or professional degree	None	Internship/residency
Physician assistants	29-1071	86.7	120.0	33.3	38.4	1.8	48.9	\$90,930	Master's degree	None	None
Podiatrists	29-1081	10.7	13.1	2.4	22.5	13.5	4.6	\$116,440	Doctoral or professional degree	None	Internship/residency
Therapists	29-1120	644.5	816.4	171.8	26.7	6.6	287.2	\$70,000	—	—	—
Occupational therapists	29-1122	113.2	146.1	32.8	29.0	4.6	48.2	\$75,400	Master's degree	None	None
Physical therapists	29-1123	204.2	277.7	73.5	36.0	4.4	123.7	\$79,860	Doctoral or professional degree	None	None
Radiation therapists	29-1124	19.1	23.6	4.5	23.5	2.4	8.4	\$77,560	Associate's degree	None	None
Recreational therapists	29-1125	19.8	22.5	2.7	13.4	—	6.7	\$42,280	Bachelor's degree	None	None
Respiratory therapists	29-1126	119.3	142.1	22.7	19.1	0.1	40.1	\$55,870	Associate's degree	None	None
Speech-language pathologists	29-1127	134.1	160.1	26.0	19.4	8.8	46.2	\$69,870	Master's degree	None	None
Exercise physiologists	29-1128	6.0	6.5	0.6	9.2	—	1.3	\$44,770	Bachelor's degree	None	None
Therapists, all other	29-1129	28.8	37.9	9.1	31.7	55.6	12.5	\$53,210	Bachelor's degree	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
	2012	2022	Number	Percent						
Veterinarians 29-1131	70.3	78.7	8.4	12.0	18.3	31.0	\$84,460	Doctoral or professional degree	None	None
Registered nurses 29-1141	2,711.5	3,238.4	526.8	19.4	0.7	1,052.6	\$65,470	Associate's degree	None	None
Nurse anesthetists 29-1151	35.2	43.9	8.8	24.9	1.2	15.6	\$148,160	Master's degree	None	None
Nurse midwives 29-1161	6.0	7.7	1.7	28.6	—	2.9	\$89,600	Master's degree	None	None
Nurse practitioners 29-1171	110.2	147.3	37.1	33.7	1.8	58.5	\$89,960	Master's degree	None	None
Audiologists 29-1181	13.0	17.3	4.3	33.6	5.4	7.0	\$69,720	Doctoral or professional degree	None	None
Health diagnosing and treating practitioners, all other 29-1199	47.2	50.9	3.7	7.9	32.2	13.5	\$72,710	Master's degree	None	None
Health technologists and technicians 29-2000	2,892.7	3,590.2	697.5	24.1	0.8	1,274.6	\$40,380	—	—	—
Clinical laboratory technologists and technicians 29-2010	325.8	396.5	70.6	21.7	0.3	156.0	\$47,820	—	—	—
Medical and clinical laboratory technologists 29-2011	164.3	187.1	22.7	13.8	0.3	65.8	\$57,580	Bachelor's degree	None	None
Medical and clinical 29-201	161.5	209.4	47.9	29.7	0.3	90.2	\$37,240	Associate's degree	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
laboratory technicians	2										
Dental hygienists	29-2021	192.8	256.9	64.2	33.3	0.6	113.5	\$70,210	Associate's degree	None	None
Diagnostic related technologists and technicians	29-2030	360.6	456.2	95.6	26.5	1.1	146.4	\$57,850	—	—	—
Cardiovascular technologists and technicians	29-2031	51.6	67.3	15.7	30.4	1.1	23.0	\$52,070	Associate's degree	None	None
Diagnostic medical sonographers	29-2032	58.8	85.9	27.0	46.0	1.1	35.3	\$65,860	Associate's degree	None	None
Nuclear medicine technologists	29-2033	20.9	25.1	4.2	20.2	1.1	7.2	\$70,180	Associate's degree	None	None
Radiologic technologists	29-2034	199.2	240.8	41.5	20.8	1.1	69.6	\$54,620	Associate's degree	None	None
Magnetic resonance imaging technologists	29-2035	30.1	37.2	7.1	23.6	1.1	11.3	\$65,360	Associate's degree	Less than 5 years	None
Emergency medical technicians and paramedics	29-2041	239.1	294.4	55.3	23.1	0.9	120.6	\$31,020	Postsecondary non-degree award	None	None
Health practitioner support technologists and technicians	29-2050	677.8	821.3	143.5	21.2	0.1	210.5	\$31,330	—	—	—
Dietetic technicians	29-2051	25.1	29.6	4.5	18.0	—	7.0	\$26,260	Associate's degree	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Pharmacy technicians	29-2052	355.3	426.1	70.7	19.9	0.1	105.9	\$29,320	High school diploma or equivalent	None	Moderate-term on-the-job training
Psychiatric technicians	29-2053	71.0	73.8	2.8	3.9	—	9.8	\$30,050	Postsecondary non-degree award	None	Short-term on-the-job training
Respiratory therapy technicians	29-2054	13.6	15.9	2.3	16.9	—	3.6	\$46,760	Associate's degree	None	Moderate-term on-the-job training
Surgical technologists	29-2055	98.5	127.8	29.3	29.8	0.1	39.1	\$41,790	Postsecondary non-degree award	None	None
Veterinary technologists and technicians	29-2056	84.8	109.8	25.0	29.5	0.1	33.4	\$30,290	Associate's degree	None	None
Ophthalmic medical technicians	29-2057	29.6	38.4	8.8	29.8	—	11.7	\$34,240	Postsecondary non-degree award	None	None
Licensed practical and licensed vocational nurses	29-2061	738.4	921.3	182.9	24.8	0.7	363.1	\$41,540	Postsecondary non-degree award	None	None
Medical records and health information technicians	29-2071	186.3	227.5	41.1	22.1	0.1	90.4	\$34,160	Postsecondary non-degree award	None	None
Opticians, dispensing	29-2081	67.6	83.5	15.8	23.4	3.7	35.3	\$33,330	High school diploma or equivalent	None	Long-term on-the-job training
Miscellaneous health	29-209	104.2	132.7	28.5	27.4	4.8	38.8	\$41,950	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

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	2012	2022	Number	Percent							
technologists and technicians	0										
Orthotists and prosthetists	29-2091	8.5	11.5	3.0	35.5	4.9	3.8	\$62,670	Master's degree	None	Internship/residency
Hearing aid specialists	29-2092	5.3	6.6	1.3	25.2	5.3	1.9	\$41,430	High school diploma or equivalent	None	None
Health technologists and technicians, all other	29-2099	90.4	114.6	24.2	26.7	4.8	33.1	\$40,700	High school diploma or equivalent	None	None
Other healthcare practitioners and technical occupations	29-9000	152.2	172.2	20.1	13.2	2.1	61.5	\$54,130	—	—	—
Occupational health and safety specialists and technicians	29-9010	75.5	81.1	5.6	7.4	2.0	26.1	\$63,200	—	—	—
Occupational health and safety specialists	29-9011	62.9	67.1	4.2	6.6	1.9	21.3	\$66,790	Bachelor's degree	None	Short-term on-the-job training
Occupational health and safety technicians	29-9012	12.6	13.9	1.4	10.9	2.2	4.8	\$47,440	High school diploma or equivalent	None	Moderate-term on-the-job training
Miscellaneous health practitioners and technical	29-9090	76.6	91.2	14.5	19.0	2.2	35.4	\$44,490	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

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	2012	2022	Number	Percent							
workers											
Athletic trainers	29-9091	22.9	27.8	4.9	21.2	2.3	11.1	\$42,090	Bachelor's degree	None	None
Genetic counselors	29-9092	2.1	3.0	0.9	41.2	2.7	1.5	\$56,800	Master's degree	None	None
Healthcare practitioners and technical workers, all other	29-9099	51.6	60.4	8.8	17.1	2.1	22.8	\$46,180	Bachelor's degree	None	None
Healthcare support occupations	31-0000	4,110.2	5,266.0	1,155.8	28.1	3.0	1,938.3	\$25,550	—	—	—
Nursing, psychiatric, and home health aides	31-1000	2,491.5	3,241.8	750.3	30.1	2.0	1,224.2	\$23,030	—	—	—
Home health aides	31-1011	875.1	1,299.3	424.2	48.5	2.2	590.7	\$20,820	Less than high school	None	Short-term on-the-job training
Psychiatric aides	31-1013	82.0	86.8	4.9	6.0	1.0	20.5	\$24,580	High school diploma or equivalent	None	Short-term on-the-job training
Nursing assistants	31-1014	1,479.8	1,792.0	312.2	21.1	2.1	593.6	\$24,420	Postsecondary non-degree award	None	None
Orderlies	31-1015	54.6	63.6	9.1	16.6	—	19.4	\$23,990	High school diploma or equivalent	None	Short-term on-the-job training
Occupational therapy and physical therapist	31-2000	160.0	225.3	65.3	40.8	0.5	101.9	\$42,120	—	—	—

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	2012	2022	Number	Percent							
assistants and aides											
Occupational therapy assistants and aides	31-2010	38.6	54.6	15.9	41.2	0.8	25.6	\$48,940	—	—	—
Occupational therapy assistants	31-2011	30.3	43.2	12.9	42.6	0.8	20.5	\$53,240	Associate's degree	None	None
Occupational therapy aides	31-2012	8.4	11.4	3.0	36.2	0.8	5.1	\$26,850	High school diploma or equivalent	None	Short-term on-the-job training
Physical therapist assistants and aides	31-2020	121.4	170.8	49.4	40.7	0.5	76.3	\$39,430	—	—	—
Physical therapist assistants	31-2021	71.4	100.7	29.3	41.0	0.5	45.1	\$52,160	Associate's degree	None	None
Physical therapist aides	31-2022	50.0	70.1	20.1	40.1	0.5	31.2	\$23,880	High school diploma or equivalent	None	Short-term on-the-job training
Other healthcare support occupations	31-9000	1,458.7	1,798.8	340.2	23.3	5.0	612.2	\$30,620	—	—	—
Massage therapists	31-9011	132.8	162.8	30.0	22.6	46.0	44.1	\$35,970	Postsecondary non-degree award	None	None
Miscellaneous healthcare support occupations	31-9090	1,325.9	1,636.0	310.2	23.4	0.8	568.2	\$30,430	—	—	—
Dental assistants	31-9099	303.2	377.6	74.4	24.5	—	137.2	\$34,500	Postsecondary non-	None	None

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	2012	2022	Number	Percent							
	1							degree award			
Medical assistants	31-9092	560.8	723.7	162.9	29.0	0.1	269.9	\$29,370	Postsecondary non-degree award	None	None
Medical equipment preparers	31-9093	51.6	62.0	10.4	20.3	1.2	20.3	\$30,820	High school diploma or equivalent	None	Moderate-term on-the-job training
Medical transcriptionists	31-9094	84.1	90.5	6.4	7.6	10.2	22.4	\$34,020	Postsecondary non-degree award	None	None
Pharmacy aides	31-9095	42.9	47.6	4.8	11.1	—	12.9	\$21,860	High school diploma or equivalent	None	Short-term on-the-job training
Veterinary assistants and laboratory animal caretakers	31-9096	74.6	81.7	7.1	9.5	—	21.3	\$23,130	High school diploma or equivalent	None	Short-term on-the-job training
Phlebotomists	31-9097	101.3	128.4	27.1	26.7	0.5	46.4	\$29,730	Postsecondary non-degree award	None	None
Healthcare support workers, all other	31-9099	107.4	124.6	17.2	16.0	0.9	37.7	\$32,800	High school diploma or equivalent	None	None
Protective service occupations	33-0000	3,325.3	3,588.3	263.0	7.9	0.6	1,146.8	\$36,620	—	—	—
Supervisors of protective	33-100	281.9	298.3	16.4	5.8	2.1	105.4	\$63,850	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

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	2012	2022	Number	Percent							
service workers	0										
First-line supervisors of law enforcement workers	33-1010	150.4	157.3	6.9	4.6	—	53.7	\$71,540	—	—	—
First-line supervisors of correctional officers	33-1011	46.7	48.6	1.9	4.0	—	18.0	\$57,840	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training
First-line supervisors of police and detectives	33-1012	103.7	108.7	5.0	4.9	—	35.7	\$78,270	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training
First-line supervisors of fire fighting and prevention workers	33-1021	62.3	66.3	3.9	6.3	—	30.5	\$68,210	Postsecondary non-degree award	Less than 5 years	Moderate-term on-the-job training
First-line supervisors of protective service workers, all other	33-1099	69.1	74.7	5.5	8.0	8.5	21.2	\$45,820	High school diploma or equivalent	Less than 5 years	None
Fire fighting and prevention workers	33-2000	321.1	342.2	21.1	6.6	0.2	109.0	\$45,590	—	—	—
Firefighters	33-2011	307.0	327.3	20.3	6.6	0.2	104.0	\$45,250	Postsecondary non-degree award	None	Long-term on-the-job training
Fire inspectors	33-2020	14.1	14.9	0.8	5.7	—	5.0	\$51,880	—	—	—
Fire	33-	12.2	13.0	0.8	6.2	—	4.4	\$53,990	High	5 years	Moderate-

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
inspectors and investigators	2021							school diploma or equivalent	or more	term on-the-job training	
Forest fire inspectors and prevention specialists	33-2022	1.9	1.9	0.1	2.8	—	0.6	\$35,780	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training
Law enforcement workers	33-3000	1,259.2	1,323.6	64.4	5.1	0.0	425.5	\$49,770	—	—	—
Bailiffs, correctional officers, and jailers	33-3010	469.5	492.6	23.0	4.9	—	147.8	\$38,970	—	—	—
Bailiffs	33-3011	16.8	17.7	0.9	5.3	—	5.4	\$36,840	High school diploma or equivalent	None	Moderate-term on-the-job training
Correctional officers and jailers	33-3012	452.8	474.9	22.1	4.9	—	142.4	\$39,040	High school diploma or equivalent	None	Moderate-term on-the-job training
Detectives and criminal investigators	33-3021	115.2	117.5	2.3	2.0	0.3	27.7	\$74,300	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training
Fish and game wardens	33-3031	6.6	6.7	0.1	1.2	—	2.0	\$48,070	High school diploma or equivalent	None	Short-term on-the-job training
Parking	33-	9.7	9.7	0.0	-0.2	—	2.8	\$35,690	High	None	Short-term on

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	2012	2022	Number	Percent							
enforcement workers	3041							school diploma or equivalent		-the-job training	
Police officers	33-3050	658.1	697.1	39.0	5.9	—	245.3	\$55,260	—	—	
Police and sheriff's patrol officers	33-3051	653.8	692.7	38.8	5.9	—	243.9	\$55,270	High school diploma or equivalent	None	Moderate-term on-the-job training
Transit and railroad police	33-3052	4.3	4.4	0.1	3.4	—	1.4	\$55,210	High school diploma or equivalent	None	Short-term on-the-job training
Other protective service workers	33-9000	1,463.0	1,624.2	161.2	11.0	0.8	507.0	\$24,230	—	—	—
Animal control workers	33-9011	14.6	15.7	1.1	7.7	—	4.5	\$31,680	High school diploma or equivalent	None	Moderate-term on-the-job training
Private detectives and investigators	33-9021	30.0	33.3	3.3	11.2	20.9	11.8	\$45,740	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training
Security guards and gaming surveillance officers	33-9030	1,083.6	1,213.8	130.2	12.0	0.5	296.3	\$24,020	—	—	—
Gaming surveillance	33-903	9.3	10.0	0.6	7.0	—	2.1	\$29,610	High school	None	Short-term on-the-job

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2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
officers and gaming investigators	1							diploma or equivalent		training	
Security guards	33-9032	1,074.3	1,203.9	129.6	12.1	0.5	294.2	\$23,970	High school diploma or equivalent	None	Short-term on-the-job training
Miscellaneous protective service workers	33-9090	334.9	361.4	26.5	7.9	—	194.5	\$23,970	—	—	—
Crossing guards	33-9091	71.4	74.5	3.1	4.3	—	13.9	\$23,910	High school diploma or equivalent	None	Short-term on-the-job training
Lifeguards, ski patrol, and other recreational protective service workers	33-9092	130.1	143.4	13.3	10.2	—	102.3	\$18,950	High school diploma or equivalent	None	Short-term on-the-job training
Transportation security screeners	33-9093	50.8	53.8	3.0	5.9	—	14.7	\$36,850	High school diploma or equivalent	None	Short-term on-the-job training
Protective service workers, all other	33-9099	82.5	89.6	7.1	8.6	—	63.6	\$30,460	High school diploma or equivalent	None	Short-term on-the-job training
Food preparation and serving related occupations	35-0000	11,780.1	12,882.0	1,101.8	9.4	0.7	5,514.5	\$18,930	—	—	—

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2012 National Employment Matrix title and code	Employment		Employment change, 2012–22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012–22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
	2012	2022	Number	Percent						
Supervisors of food preparation and serving workers 35-1000	963.9	1,079.3	115.4	12.0	3.7	373.5	\$30,120	—	—	—
Chefs and head cooks 35-1011	115.4	121.5	6.0	5.2	13.5	24.7	\$42,480	High school diploma or equivalent	5 years or more	None
First-line supervisors of food preparation and serving workers 35-1012	848.5	957.8	109.4	12.9	2.3	348.7	\$29,270	High school diploma or equivalent	Less than 5 years	None
Cooks and food preparation workers 35-2000	2,956.3	3,190.4	234.2	7.9	1.0	892.0	\$20,090	—	—	—
Cooks 35-2010	2,148.5	2,353.7	205.3	9.6	1.1	631.6	\$20,550	—	—	—
Cooks, fast food 35-2011	516.9	514.4	-2.5	-0.5	1.2	101.9	\$18,410	Less than high school	None	Short-term on-the-job training
Cooks, institution and cafeteria 35-2012	408.9	462.8	54.0	13.2	0.7	134.6	\$22,860	Less than high school	None	Short-term on-the-job training
Cooks, private household 35-2013	7.0	6.9	-0.1	-0.8	—	1.4	\$23,470	Postsecondary non-degree award	Less than 5 years	None
Cooks, restaurant 35-2014	1,024.1	1,174.2	150.1	14.7	1.2	352.1	\$22,030	Less than high school	Less than 5 years	Moderate-term on-the-job training
Cooks, short order 35-2015	166.1	166.6	0.5	0.3	1.2	33.3	\$19,730	Less than high school	None	Short-term on-the-job training
Cooks, all other 35-201	25.5	28.7	3.2	12.7	1.0	8.3	\$23,250	Less than high	None	Moderate-term on-the-

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	2012	2022	Number	Percent							
	9							school		job training	
Food preparation workers	35-2021	807.8	836.7	28.9	3.6	0.8	260.5	\$19,300	Less than high school	None	Short-term on-the-job training
Food and beverage serving workers	35-3000	6,563.1	7,228.7	665.6	10.1	0.2	3,480.3	\$18,460	—	—	—
Bartenders	35-3011	551.1	616.7	65.6	11.9	1.2	269.4	\$18,900	Less than high school	None	Short-term on-the-job training
Fast food and counter workers	35-3020	3,408.5	3,828.1	419.7	12.3	0.1	1,823.5	\$18,300	—	—	—
Combined food preparation and serving workers, including fast food	35-3021	2,969.3	3,391.2	421.9	14.2	0.0	1,555.7	\$18,260	Less than high school	None	Short-term on-the-job training
Counter attendants, cafeteria, food concession, and coffee shop	35-3022	439.2	436.9	-2.3	-0.5	0.4	267.8	\$18,560	Less than high school	None	Short-term on-the-job training
Waiters and waitresses	35-3031	2,362.2	2,494.0	131.8	5.6	0.2	1,268.3	\$18,540	Less than high school	None	Short-term on-the-job training
Food servers, nonrestaurant	35-3041	241.3	289.9	48.6	20.1	0.2	119.1	\$19,640	Less than high school	None	Short-term on-the-job training
Other food preparation and serving related workers	35-9000	1,296.9	1,383.5	86.7	6.7	0.1	768.8	\$18,530	—	—	—
Dining room and cafeteria attendants	35-9011	403.2	435.4	32.1	8.0	0.0	208.9	\$18,500	Less than high school	None	Short-term on-the-job training

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	2012	2022	Number	Percent							
and bartender helpers											
Dishwashers	35-9021	508.5	540.2	31.7	6.2	—	255.5	\$18,460	Less than high school	None	Short-term on-the-job training
Hosts and hostesses, restaurant, lounge, and coffee shop	35-9031	347.3	366.4	19.1	5.5	0.4	280.4	\$18,580	Less than high school	None	None
Food preparation and serving related workers, all other	35-9099	37.8	41.5	3.7	9.8	—	24.0	\$20,300	Less than high school	None	Short-term on-the-job training
Building and grounds cleaning and maintenance occupations	37-0000	5,522.3	6,213.3	691.0	12.5	13.0	1,825.5	\$22,690	—	—	—
Supervisors of building and grounds cleaning and maintenance workers	37-1000	456.8	515.2	58.3	12.8	38.8	141.5	\$37,610	—	—	—
First-line supervisors of housekeeping and janitorial workers	37-1011	249.5	281.6	32.0	12.8	28.4	91.6	\$35,310	High school diploma or equivalent	Less than 5 years	None
First-line supervisors of landscaping, lawn service, and groundskeeping workers	37-1012	207.3	233.6	26.3	12.7	51.4	49.9	\$42,160	High school diploma or equivalent	Less than 5 years	None
Building	37-	3,838	4,316.	478.4	12.5	6.9	1,220.5	\$21,570	—	—	—

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	2012	2022	Number	Percent							
cleaning and pest control workers	2000	.4	8								
Building cleaning workers	37-2010	3,773.1	4,238.6	465.6	12.3	6.9	1,189.9	\$21,440	—	—	—
Janitors and cleaners, except maids and housekeeping cleaners	37-2011	2,324.0	2,604.0	280.0	12.1	3.6	717.3	\$22,320	Less than high school	None	Short-term on-the-job training
Maids and housekeeping cleaners	37-2012	1,434.6	1,618.0	183.4	12.8	12.4	467.7	\$19,570	Less than high school	None	Short-term on-the-job training
Building cleaning workers, all other	37-2019	14.4	16.6	2.2	15.0	4.4	4.9	\$27,570	Less than high school	None	Short-term on-the-job training
Pest control workers	37-2021	65.4	78.2	12.8	19.7	5.6	30.6	\$30,060	High school diploma or equivalent	None	Moderate-term on-the-job training
Grounds maintenance workers	37-3000	1,227.1	1,381.3	154.2	12.6	22.5	463.6	\$23,970	—	—	—
Landscaping and groundskeeping workers	37-3011	1,124.9	1,264.0	139.2	12.4	22.5	422.7	\$23,570	Less than high school	None	Short-term on-the-job training
Pesticide handlers, sprayers, and applicators, vegetation	37-3012	29.6	33.0	3.3	11.2	23.6	10.8	\$30,270	High school diploma or equivalent	None	Moderate-term on-the-job training
Tree trimmers and pruners	37-3013	53.2	63.0	9.8	18.5	24.1	23.2	\$32,310	High school diploma or equivalent	None	Short-term on-the-job training

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	2012	2022	Number	Percent							
Grounds maintenance workers, all other	37-3019	19.3	21.3	1.9	10.0	15.8	6.8	\$26,760	Less than high school	None	Short-term on-the-job training
Personal care and service occupations	39-0000	5,375.6	6,498.5	1,122.9	20.9	19.3	2,289.4	\$20,840	—	—	—
Supervisors of personal care and service workers	39-1000	300.7	332.5	31.7	10.6	40.3	88.0	\$36,640	—	—	—
First-line supervisors of gaming workers	39-1010	49.2	53.0	3.8	7.6	33.5	13.8	\$45,370	—	—	—
Gaming supervisors	39-1011	38.5	41.6	3.1	8.2	35.3	11.0	\$49,290	High school diploma or equivalent	Less than 5 years	None
Slot supervisors	39-1012	10.7	11.4	0.6	5.8	27.0	2.8	\$32,390	High school diploma or equivalent	Less than 5 years	None
First-line supervisors of personal service workers	39-1021	251.5	279.5	28.0	11.1	41.6	74.3	\$35,150	High school diploma or equivalent	Less than 5 years	None
Animal care and service workers	39-2000	232.1	267.5	35.4	15.2	24.8	76.6	\$19,970	—	—	—
Animal trainers	39-2011	41.6	47.7	6.1	14.8	62.5	24.5	\$25,270	High school diploma or equivalent	None	Moderate-term on-the-job training

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	2012	2022	Number	Percent							
Nonfarm animal caretakers	39-2021	190.6	219.8	29.2	15.3	16.6	52.1	\$19,690	Less than high school	None	Short-term on-the-job training
Entertainment attendants and related workers	39-3000	548.8	596.1	47.3	8.6	0.8	284.4	\$18,850	—	—	—
Gaming services workers	39-3010	128.2	141.9	13.8	10.8	1.4	35.9	\$18,910	—	—	—
Gaming dealers	39-3011	100.3	111.7	11.4	11.4	1.4	28.7	\$18,630	High school diploma or equivalent	None	Short-term on-the-job training
Gaming and sports book writers and runners	39-3012	14.7	15.8	1.1	7.8	1.5	3.7	\$21,810	High school diploma or equivalent	None	Short-term on-the-job training
Gaming service workers, all other	39-3019	13.2	14.4	1.2	9.4	1.2	3.5	\$23,490	High school diploma or equivalent	None	Short-term on-the-job training
Motion picture projectionists	39-3021	8.0	5.8	-2.1	-26.5	—	3.1	\$19,830	Less than high school	None	Short-term on-the-job training
Ushers, lobby attendants, and ticket takers	39-3031	108.8	110.6	1.9	1.7	0.7	59.3	\$18,730	Less than high school	None	Short-term on-the-job training
Miscellaneous entertainment attendants and related workers	39-3090	303.9	337.7	33.8	11.1	0.7	186.1	\$18,840	—	—	—

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	2012	2022	Number	Percent							
Amusement and recreation attendants	39-3091	267.1	297.5	30.3	11.3	0.6	164.2	\$18,710	Less than high school	None	Short-term on-the-job training
Costume attendants	39-3092	5.6	6.0	0.4	6.6	—	3.2	\$36,760	High school diploma or equivalent	None	Short-term on-the-job training
Locker room, coatroom, and dressing room attendants	39-3093	19.6	21.6	2.0	10.4	0.8	11.9	\$19,160	High school diploma or equivalent	None	Short-term on-the-job training
Entertainment attendants and related workers, all other	39-3099	11.5	12.6	1.1	9.2	0.7	6.8	\$25,140	High school diploma or equivalent	None	Short-term on-the-job training
Funeral service workers	39-4000	61.0	63.5	2.5	4.2	1.5	16.3	\$29,620	—	—	—
Embalmers	39-4011	5.1	4.4	-0.8	-15.0	1.5	1.1	\$42,240	Postsecondary non-degree award	None	Short-term on-the-job training
Funeral attendants	39-4021	32.4	32.9	0.5	1.4	1.5	7.4	\$22,610	High school diploma or equivalent	None	Short-term on-the-job training
Morticians, undertakers, and funeral directors	39-4031	23.5	26.3	2.8	12.1	1.5	7.9	\$46,840	Associate's degree	None	Long-term on-the-job training
Personal appearance workers	39-5000	816.1	930.5	114.3	14.0	41.0	283.9	\$22,190	—	—	—
Barbers,	39-	663.3	746.6	83.3	12.6	44.3	240.0	\$22,770	—	—	—

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	2012	2022	Number	Percent							
hairdressers, hairstylists and cosmetologists	5010										
Barbers	39-5011	52.1	57.9	5.8	11.1	75.7	19.3	\$25,090	Postsecondary non-degree award	None	None
Hairdressers, hairstylists, and cosmetologists	39-5012	611.2	688.7	77.6	12.7	41.6	220.6	\$22,700	Postsecondary non-degree award	None	None
Miscellaneous personal appearance workers	39-5090	152.9	183.9	31.0	20.3	26.8	43.9	\$20,060	—	—	—
Makeup artists, theatrical and performance	39-5091	2.7	2.8	0.1	3.1	27.0	0.3	\$64,450	Postsecondary non-degree award	None	None
Manicurists and pedicurists	39-5092	86.9	100.4	13.5	15.6	26.8	20.7	\$19,220	Postsecondary non-degree award	None	None
Shampoosers	39-5093	18.9	18.6	-0.3	-1.5	26.8	1.6	\$18,310	Less than high school	None	Short-term on-the-job training
Skincare specialists	39-5094	44.4	62.0	17.7	39.8	26.7	21.3	\$28,640	Postsecondary non-degree award	None	None
Baggage porters, bellhops, and concierges	39-6000	67.3	78.4	11.1	16.5	—	27.8	\$22,880	—	—	—
Baggage porters and bellhops	39-6011	41.0	46.0	5.0	12.1	—	15.1	\$20,050	High school diploma or equivalent	None	Short-term on-the-job training

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		2012	2022	Number	Percent						
Concierges	39-6012	26.3	32.4	6.1	23.4	—	12.7	\$27,250	High school diploma or equivalent	None	Moderate-term on-the-job training
Tour and travel guides	39-7000	47.1	50.8	3.6	7.7	17.7	26.3	\$24,430	—	—	—
Tour guides and escorts	39-7011	41.4	44.8	3.4	8.3	17.5	23.4	\$23,940	High school diploma or equivalent	None	Moderate-term on-the-job training
Travel guides	39-7012	5.7	5.9	0.2	3.6	18.9	3.0	\$30,780	High school diploma or equivalent	None	Moderate-term on-the-job training
Other personal care and service workers	39-9000	3,302.5	4,179.3	876.8	26.5	15.5	1,485.9	\$20,630	—	—	—
Childcare workers	39-9011	1,312.7	1,496.8	184.1	14.0	28.5	570.0	\$19,510	High school diploma or equivalent	None	Short-term on-the-job training
Personal care aides	39-9021	1,190.6	1,771.4	580.8	48.8	5.9	666.0	\$19,910	Less than high school	None	Short-term on-the-job training
Recreation and fitness workers	39-9030	612.4	694.9	82.5	13.5	7.3	154.7	\$24,360	—	—	—
Fitness trainers and aerobics instructors	39-9031	267.0	300.5	33.5	12.5	9.3	65.0	\$31,720	High school diploma or equivalent	None	Short-term on-the-job training

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		2012	2022	Number	Percent						
Recreation workers	39-9032	345.4	394.4	49.0	14.2	5.8	89.7	\$22,240	Bachelor's degree	None	None
Residential advisors	39-9041	89.7	108.2	18.5	20.7	—	57.3	\$24,520	High school diploma or equivalent	None	Short-term on-the-job training
Personal care and service workers, all other	39-9099	97.1	108.0	10.8	11.1	22.5	37.9	\$20,600	High school diploma or equivalent	None	Short-term on-the-job training
Sales and related occupations	41-0000	15,105.0	16,200.5	1,095.5	7.3	8.2	5,626.9	\$25,120	—	—	—
Supervisors of sales workers	41-1000	1,997.7	2,065.4	67.7	3.4	26.9	470.1	\$39,350	—	—	—
First-line supervisors of retail sales workers	41-1011	1,603.3	1,674.2	70.9	4.4	24.4	419.8	\$36,820	High school diploma or equivalent	Less than 5 years	None
First-line supervisors of non-retail sales workers	41-1012	394.4	391.2	-3.2	-0.8	37.4	50.3	\$70,060	High school diploma or equivalent	Less than 5 years	None
Retail sales workers	41-2000	8,467.3	9,050.6	583.3	6.9	2.0	3,725.4	\$19,890	—	—	—
Cashiers	41-2010	3,361.1	3,447.7	86.5	2.6	0.8	1,539.6	\$18,990	—	—	—
Cashiers	41-2011	3,338.9	3,425.4	86.5	2.6	0.8	1,530.0	\$18,970	Less than high school	None	Short-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
	2012	2022	Number	Percent						
Gaming change persons and booth cashiers 41-2012	22.3	22.3	0.0	0.1	0.6	9.7	\$24,690	High school diploma or equivalent	None	Short-term on-the-job training
Counter and rental clerks and parts salespersons 41-2020	659.1	721.2	62.1	9.4	0.6	230.1	\$25,050	—	—	—
Counter and rental clerks 41-2021	437.8	484.4	46.6	10.6	0.7	158.5	\$23,130	Less than high school	None	Short-term on-the-job training
Parts salespersons 41-2022	221.3	236.8	15.5	7.0	0.5	71.6	\$29,550	Less than high school	None	Moderate-term on-the-job training
Retail salespersons 41-2031	4,447.0	4,881.7	434.7	9.8	3.2	1,955.7	\$21,110	Less than high school	None	Short-term on-the-job training
Sales representatives, services 41-3000	1,727.7	1,913.8	186.0	10.8	8.5	633.4	\$51,080	—	—	—
Advertising sales agents 41-3011	154.6	153.6	-1.0	-0.7	6.0	47.5	\$46,290	High school diploma or equivalent	None	Moderate-term on-the-job training
Insurance sales agents 41-3021	443.4	489.3	45.9	10.4	19.0	150.2	\$48,150	High school diploma or equivalent	None	Moderate-term on-the-job training
Securities, commodities, and financial services sales agents 41-3031	354.6	394.3	39.7	11.2	6.4	122.6	\$71,720	Bachelor's degree	None	Moderate-term on-the-job training
Travel agents 41-3041	73.3	64.4	-8.9	-12.1	12.0	11.1	\$34,600	High school diploma or	None	Moderate-term on-the-job training

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	2012	2022	Number	Percent							
								equivalent			
Sales representatives, services, all other	41-3099	701.9	812.2	110.3	15.7	3.1	302.0	\$50,850	High school diploma or equivalent	None	Short-term on-the-job training
Sales representatives, wholesale and manufacturing	41-4000	1,863.0	2,032.3	169.3	9.1	3.2	532.4	\$57,870	—	—	—
Sales representatives, wholesale and manufacturing, technical and scientific products	41-4011	382.3	419.5	37.2	9.7	3.2	111.8	\$74,970	Bachelor's degree	None	Moderate-term on-the-job training
Sales representatives, wholesale and manufacturing, except technical and scientific products	41-4012	1,480.7	1,612.8	132.0	8.9	3.2	420.7	\$54,230	High school diploma or equivalent	None	Moderate-term on-the-job training
Other sales and related workers	41-9000	1,049.3	1,138.4	89.2	8.5	30.2	265.6	\$28,600	—	—	—
Models, demonstrators, and product promoters	41-9010	82.9	96.2	13.3	16.1	5.6	36.7	\$23,700	—	—	—
Demonstrators and product promoters	41-9011	78.1	90.7	12.6	16.1	5.6	34.6	\$23,860	High school diploma or equivalent	None	Short-term on-the-job training

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	2012	2022	Number	Percent							
Models	41-9012	4.8	5.5	0.7	15.3	4.8	2.1	\$18,750	Less than high school	None	None
Real estate brokers and sales agents	41-9020	422.0	468.6	46.6	11.0	51.6	86.3	\$41,990	—	—	—
Real estate brokers	41-9021	79.6	88.3	8.6	10.8	52.0	16.1	\$58,350	High school diploma or equivalent	Less than 5 years	None
Real estate sales agents	41-9022	342.4	380.3	38.0	11.1	51.5	70.2	\$39,140	High school diploma or equivalent	None	Long-term on-the-job training
Sales engineers	41-9031	66.0	71.8	5.9	8.9	—	17.4	\$91,830	Bachelor's degree	None	Moderate-term on-the-job training
Telemarketers	41-9041	250.1	269.3	19.2	7.7	0.9	70.9	\$22,330	Less than high school	None	Short-term on-the-job training
Miscellaneous sales and related workers	41-9090	228.4	232.5	4.2	1.8	40.4	54.3	\$25,400	—	—	—
Door-to-door sales workers, news and street vendors, and related workers	41-9091	92.7	78.5	-14.2	-15.3	91.9	9.3	\$21,470	High school diploma or equivalent	None	Short-term on-the-job training
Sales and related workers, all other	41-9099	135.7	154.1	18.4	13.5	5.2	45.0	\$25,800	High school diploma or equivalent	None	None

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	2012	2022	Number	Percent						
Office and administrative support occupations 43-0000	22,470.1	24,004.1	1,534.0	6.8	1.1	6,765.1	\$31,510	—	—	—
Supervisors of office and administrative support workers 43-1000	1,418.1	1,589.6	171.5	12.1	0.5	508.0	\$49,330	—	—	—
First-line supervisors of office and administrative support workers 43-1011	1,418.1	1,589.6	171.5	12.1	0.5	508.0	\$49,330	High school diploma or equivalent	Less than 5 years	None
Communications equipment operators 43-2000	145.1	126.4	-18.7	-12.9	1.0	27.9	\$25,930	—	—	—
Switchboard operators, including answering service 43-2011	131.0	113.7	-17.3	-13.2	0.9	24.1	\$25,370	High school diploma or equivalent	None	Short-term on-the-job training
Telephone operators 43-2021	11.1	9.6	-1.4	-13.1	2.4	2.9	\$32,850	High school diploma or equivalent	None	Short-term on-the-job training
Communications equipment operators, all other 43-2099	3.0	3.2	0.1	4.6	—	0.9	\$40,250	High school diploma or equivalent	None	Short-term on-the-job training
Financial clerks 43-3000	3,567.2	3,958.6	391.4	11.0	3.0	1,097.9	\$32,680	—	—	—
Bill and account collectors 43-3011	397.4	455.6	58.2	14.7	1.7	170.0	\$32,480	High school diploma	None	Moderate-term on-the-job training

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	2012	2022	Number	Percent							
								or equivalent			
Billing and posting clerks	43-3021	513.8	607.0	93.2	18.1	2.4	187.8	\$33,450	High school diploma or equivalent	None	Short-term on-the-job training
Bookkeeping, accounting, and auditing clerks	43-3031	1,799.8	2,004.5	204.6	11.4	4.7	370.0	\$35,170	High school diploma or equivalent	None	Moderate-term on-the-job training
Gaming cage workers	43-3041	18.4	19.8	1.3	7.3	—	4.9	\$24,610	High school diploma or equivalent	None	Short-term on-the-job training
Payroll and timekeeping clerks	43-3051	179.5	202.0	22.5	12.5	1.5	61.9	\$37,690	High school diploma or equivalent	None	Moderate-term on-the-job training
Procurement clerks	43-3061	72.2	73.6	1.4	2.0	—	27.6	\$38,220	High school diploma or equivalent	None	Moderate-term on-the-job training
Tellers	43-3071	545.3	551.0	5.6	1.0	0.1	259.8	\$24,940	High school diploma or equivalent	None	Short-term on-the-job training
Financial clerks, all other	43-3099	40.7	45.2	4.4	10.9	1.7	15.9	\$36,850	High school diploma or equivalent	None	Short-term on-the-job training

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(Numbers in thousands)**

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	2012	2022	Number	Percent							
Information and record clerks	43-4000	5,412.6	5,911.3	498.7	9.2	0.6	1,951.9	\$29,710	—	—	
Brokerage clerks	43-4011	61.9	64.3	2.4	3.8	—	18.4	\$42,440	High school diploma or equivalent	None	Moderate-term on-the-job training
Correspondence clerks	43-4021	11.1	11.5	0.5	4.2	—	3.3	\$36,140	High school diploma or equivalent	None	Short-term on-the-job training
Court, municipal, and license clerks	43-4031	130.0	143.8	13.8	10.6	2.5	33.8	\$34,830	High school diploma or equivalent	None	Moderate-term on-the-job training
Credit authorizers, checkers, and clerks	43-4041	52.2	50.5	-1.7	-3.2	0.4	6.1	\$33,600	High school diploma or equivalent	None	Short-term on-the-job training
Customer service representatives	43-4051	2,362.8	2,661.4	298.7	12.6	0.5	941.6	\$30,580	High school diploma or equivalent	None	Short-term on-the-job training
Eligibility interviewers, government programs	43-4061	138.1	152.0	13.9	10.1	1.1	41.6	\$40,530	High school diploma or equivalent	None	Moderate-term on-the-job training
File clerks	43-4071	164.2	158.8	-5.3	-3.3	0.7	37.5	\$26,190	High school diploma	None	Short-term on-the-job training

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	2012	2022	Number	Percent							
								or equivalent			
Hotel, motel, and resort desk clerks	43-4081	231.6	263.4	31.8	13.7	—	141.5	\$20,340	High school diploma or equivalent	None	Short-term on-the-job training
Interviewers, except eligibility and loan	43-4111	204.5	225.8	21.3	10.4	0.5	59.9	\$29,910	High school diploma or equivalent	None	Short-term on-the-job training
Library assistants, clerical	43-4121	110.4	126.6	16.3	14.7	0.2	64.4	\$23,440	High school diploma or equivalent	None	Short-term on-the-job training
Loan interviewers and clerks	43-4131	195.9	213.0	17.1	8.7	0.7	30.1	\$35,310	High school diploma or equivalent	None	Short-term on-the-job training
New accounts clerks	43-4141	55.7	53.0	-2.7	-4.9	—	14.4	\$31,720	High school diploma or equivalent	None	Moderate-term on-the-job training
Order clerks	43-4151	212.7	207.4	-5.3	-2.5	1.3	56.0	\$29,480	High school diploma or equivalent	None	Short-term on-the-job training
Human resources assistants, except payroll and	43-4161	146.9	145.3	-1.6	-1.1	0.4	37.1	\$37,510	High school diploma or equivalent	None	Short-term on-the-job training

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	2012	2022	Number	Percent							
timekeeping											
Receptionists and information clerks	43-4171	1,006.7	1,142.6	135.9	13.5	0.6	406.9	\$25,990	High school diploma or equivalent	None	Short-term on-the-job training
Reservation and transportation ticket agents and travel clerks	43-4181	139.1	119.6	-19.5	-14.0	1.8	18.5	\$32,400	High school diploma or equivalent	None	Short-term on-the-job training
Information and record clerks, all other	43-4199	188.9	172.2	-16.7	-8.8	—	40.8	\$37,240	High school diploma or equivalent	None	Short-term on-the-job training
Material recording, scheduling, dispatching, and distributing workers	43-5000	3,858.5	3,759.7	-98.8	-2.6	0.8	1,130.4	\$28,380	—	—	—
Cargo and freight agents	43-5011	79.5	91.0	11.5	14.5	0.4	33.0	\$39,720	High school diploma or equivalent	None	Short-term on-the-job training
Couriers and messengers	43-5021	98.2	87.4	-10.9	-11.1	19.3	12.6	\$25,440	High school diploma or equivalent	None	Short-term on-the-job training
Dispatchers	43-5030	289.4	318.4	29.0	10.0	0.7	112.5	\$35,910	—	—	—
Police, fire, and	43-503	98.5	106.2	7.6	7.7	—	36.0	\$36,300	High school	None	Moderate-term on-the-

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
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	2012	2022	Number	Percent							
ambulance dispatchers	1							diploma or equivalent		job training	
Dispatchers, except police, fire, and ambulance	43-5032	190.9	212.3	21.4	11.2	1.0	76.4	\$35,690	High school diploma or equivalent	None	Moderate-term on-the-job training
Meter readers, utilities	43-5041	40.2	32.5	-7.7	-19.2	—	10.1	\$35,940	High school diploma or equivalent	None	Short-term on-the-job training
Postal service workers	43-5050	491.6	352.6	-139.1	-28.3	—	122.3	\$53,100	—	—	—
Postal service clerks	43-5051	66.9	45.7	-21.3	-31.8	—	10.2	\$53,090	High school diploma or equivalent	None	Short-term on-the-job training
Postal service mail carriers	43-5052	295.1	215.8	-79.2	-26.8	—	102.7	\$56,490	High school diploma or equivalent	None	Short-term on-the-job training
Postal service mail sorters, processors, and processing machine operators	43-5053	129.6	91.0	-38.6	-29.8	—	9.4	\$53,090	High school diploma or equivalent	None	Short-term on-the-job training
Production, planning, and expediting clerks	43-5061	284.7	294.8	10.1	3.6	1.0	81.1	\$43,740	High school diploma or equivalent	None	Moderate-term on-the-job training

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	2012	2022	Number	Percent						
Shipping, receiving, and traffic clerks 43-5071	695.5	702.3	6.8	1.0	—	189.6	\$29,010	High school diploma or equivalent	None	Short-term on-the-job training
Stock clerks and order fillers 43-5081	1,807.2	1,801.2	-6.0	-0.3	0.4	546.0	\$22,050	Less than high school	None	Short-term on-the-job training
Weighers, measurers, checkers, and samplers, recordkeeping 43-5111	72.2	79.6	7.3	10.2	1.2	23.3	\$27,920	High school diploma or equivalent	None	Short-term on-the-job training
Secretaries and administrative assistants 43-6000	3,947.1	4,426.6	479.5	12.1	0.9	972.1	\$35,330	—	—	—
Executive secretaries and executive administrative assistants 43-6011	873.9	863.4	-10.5	-1.2	0.9	105.2	\$47,500	High school diploma or equivalent	Less than 5 years	None
Legal secretaries 43-6012	223.1	216.1	-7.0	-3.1	1.1	26.8	\$42,170	High school diploma or equivalent	None	Moderate-term on-the-job training
Medical secretaries 43-6013	525.6	714.9	189.2	36.0	1.2	252.5	\$31,350	High school diploma or equivalent	None	Moderate-term on-the-job training
Secretaries and administrative assistants, except legal, medical, and executive 43-6014	2,324.4	2,632.3	307.8	13.2	0.9	587.6	\$32,410	High school diploma or equivalent	None	Short-term on-the-job training

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	2012	2022	Number	Percent						
Other office and administrative support workers 43-9000	4,121.5	4,231.9	110.3	2.7	1.0	1,077.0	\$28,590	—	—	—
Computer operators 43-9011	74.6	62.0	-12.7	-17.0	1.0	7.2	\$38,390	High school diploma or equivalent	None	Moderate-term on-the-job training
Data entry and information processing workers 43-9020	324.6	244.2	-80.4	-24.8	2.4	30.0	\$30,100	—	—	—
Data entry keyers 43-9021	220.3	166.1	-54.2	-24.6	1.6	26.3	\$28,010	High school diploma or equivalent	None	Moderate-term on-the-job training
Word processors and typists 43-9022	104.4	78.2	-26.2	-25.1	4.1	3.7	\$35,270	High school diploma or equivalent	None	Short-term on-the-job training
Desktop publishers 43-9031	16.4	15.5	-0.9	-5.5	—	3.0	\$37,040	Associate's degree	None	Short-term on-the-job training
Insurance claims and policy processing clerks 43-9041	254.4	275.0	20.6	8.1	0.2	88.1	\$35,700	High school diploma or equivalent	None	Moderate-term on-the-job training
Mail clerks and mail machine operators, except postal service 43-9051	108.5	98.9	-9.6	-8.8	0.6	24.9	\$26,900	High school diploma or equivalent	None	Short-term on-the-job training

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	2012	2022	Number	Percent						
Office clerks, general 43-9061	2,983.5	3,167.6	184.1	6.2	0.4	810.9	\$27,470	High school diploma or equivalent	None	Short-term on-the-job training
Office machine operators, except computer 43-9071	68.8	61.8	-7.0	-10.2	—	16.4	\$27,950	High school diploma or equivalent	None	Short-term on-the-job training
Proofreaders and copy markers 43-9081	13.2	13.0	-0.2	-1.4	12.1	2.4	\$32,780	Bachelor's degree	None	None
Statistical assistants 43-9111	17.2	18.8	1.6	9.2	6.2	6.3	\$39,840	Bachelor's degree	None	None
Office and administrative support workers, all other 43-9199	260.3	275.0	14.8	5.7	6.7	87.8	\$31,060	High school diploma or equivalent	None	Short-term on-the-job training
Farming, fishing, and forestry occupations 45-0000	947.2	915.0	-32.2	-3.4	4.5	271.0	\$19,370	—	—	—
Supervisors of farming, fishing, and forestry workers 45-1000	45.9	44.8	-1.1	-2.5	18.0	9.7	\$43,660	—	—	—
First-line supervisors of farming, fishing, and forestry workers 45-1011	45.9	44.8	-1.1	-2.5	18.0	9.7	\$43,660	High school diploma or equivalent	Less than 5 years	None
Agricultural workers 45-2000	815.5	789.3	-26.2	-3.2	0.9	245.5	\$19,020	—	—	—
Agricultural 45-	17.0	16.8	-0.2	-1.0	0.5	5.0	\$42,160	Bachelor'	None	Moderate-

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	2012	2022	Number	Percent							
inspectors	2011							s degree		term on-the-job training	
Animal breeders	45-2021	1.3	1.0	-0.3	-23.4	77.3	0.4	\$34,250	High school diploma or equivalent	Less than 5 years	Short-term on-the-job training
Graders and sorters, agricultural products	45-2041	49.2	48.2	-1.0	-2.0	2.4	8.7	\$19,150	Less than high school	None	Short-term on-the-job training
Miscellaneous agricultural workers	45-2090	748.1	723.4	-24.7	-3.3	0.7	231.4	\$18,900	—	—	—
Agricultural equipment operators	45-2091	59.0	61.2	2.3	3.9	0.7	20.2	\$25,860	Less than high school	None	Short-term on-the-job training
Farmworkers and laborers, crop, nursery, and greenhouse	45-2092	596.8	567.6	-29.2	-4.9	0.8	181.1	\$18,670	Less than high school	None	Short-term on-the-job training
Farmworkers, farm, ranch, and aquacultural animals	45-2093	77.9	79.6	1.7	2.2	0.6	25.3	\$22,060	Less than high school	None	Short-term on-the-job training
Agricultural workers, all other	45-2099	14.4	14.9	0.5	3.4	0.6	4.9	\$25,140	Less than high school	None	Short-term on-the-job training
Fishing and hunting workers	45-3000	31.3	29.8	-1.5	-4.9	56.6	6.4	\$34,010	—	—	—
Fishers and related fishing workers	45-3011	31.3	29.7	-1.6	-5.0	56.7	6.3	\$33,430	Less than high school	None	Moderate-term on-the-job training
Forest, conservation, and logging workers	45-4000	54.4	51.1	-3.4	-6.2	16.7	9.6	\$32,380	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Forest and conservation workers	45-4011	10.5	11.0	0.5	4.5	3.6	2.3	\$24,340	High school diploma or equivalent	None	Moderate-term on-the-job training
Logging workers	45-4020	43.9	40.1	-3.8	-8.7	19.8	7.3	\$33,630	—	—	—
Fallers	45-4021	6.6	3.8	-2.9	-43.3	19.9	1.0	\$35,250	High school diploma or equivalent	None	Moderate-term on-the-job training
Logging equipment operators	45-4022	30.0	30.6	0.6	2.0	19.8	5.2	\$33,380	High school diploma or equivalent	None	Moderate-term on-the-job training
Log graders and scalers	45-4023	3.5	2.4	-1.1	-31.6	20.0	0.5	\$32,880	High school diploma or equivalent	None	Moderate-term on-the-job training
Logging workers, all other	45-4029	3.7	3.3	-0.5	-12.1	19.8	0.6	\$34,260	High school diploma or equivalent	None	Moderate-term on-the-job training
Construction and extraction occupations	47-0000	6,092.2	7,394.1	1,301.9	21.4	17.3	2,353.0	\$40,120	—	—	—
Supervisors of construction and extraction workers	47-1000	545.5	673.8	128.3	23.5	15.5	187.1	\$59,700	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
	2012	2022	Number	Percent						
First-line supervisors of construction trades and extraction workers 47-1011	545.5	673.8	128.3	23.5	15.5	187.1	\$59,700	High school diploma or equivalent	5 years or more	None
Construction trades workers 47-2000	4,653.4	5,666.5	1,013.1	21.8	20.3	1,810.4	\$38,970	—	—	—
Boilermakers 47-2011	18.0	18.7	0.7	3.7	—	8.8	\$56,560	High school diploma or equivalent	None	Apprenticeship
Brickmasons, blockmasons, and stonemasons 47-2020	85.1	114.4	29.3	34.5	19.7	38.4	\$44,950	—	—	—
Brickmasons and blockmasons 47-2021	71.0	96.2	25.2	35.5	19.7	32.8	\$46,440	High school diploma or equivalent	None	Apprenticeship
Stonemasons 47-2022	14.1	18.2	4.1	29.2	19.9	5.6	\$37,350	High school diploma or equivalent	None	Apprenticeship
Carpenters 47-2031	901.2	1,119.4	218.2	24.2	36.1	329.2	\$39,940	High school diploma or equivalent	None	Apprenticeship
Carpet, floor, and tile installers and finishers 47-2040	96.4	108.3	11.8	12.3	30.7	29.1	\$36,400	—	—	—
Carpet 47-	36.7	39.9	3.2	8.7	30.7	9.8	\$36,740	Less than	None	Short-term on

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	2012	2022	Number	Percent							
installers	2041							high school		-the-job training	
Floor layers, except carpet, wood, and hard tiles	47-2042	14.5	16.3	1.9	13.0	30.6	4.5	\$35,510	High school diploma or equivalent	None	Moderate-term on-the-job training
Floor sanders and finishers	47-2043	6.0	6.9	0.9	14.8	30.6	2.0	\$33,240	High school diploma or equivalent	None	Moderate-term on-the-job training
Tile and marble setters	47-2044	39.2	45.1	5.9	15.0	30.7	12.9	\$37,040	Less than high school	None	Long-term on-the-job training
Cement masons, concrete finishers, and terrazzo workers	47-2050	144.3	186.1	41.7	28.9	4.5	58.3	\$35,830	—	—	—
Cement masons and concrete finishers	47-2051	140.8	181.8	41.0	29.1	4.5	57.2	\$35,760	Less than high school	None	Moderate-term on-the-job training
Terrazzo workers and finishers	47-2053	3.5	4.2	0.7	19.8	4.5	1.1	\$39,740	High school diploma or equivalent	None	Apprenticeship
Construction laborers	47-2061	1,071.1	1,331.0	259.8	24.3	23.5	489.1	\$29,990	Less than high school	None	Short-term on-the-job training
Construction equipment operators	47-2070	409.7	487.9	78.2	19.1	3.2	164.8	\$40,980	—	—	—
Paving, surfacing, and tamping equipment	47-2071	54.7	65.5	10.8	19.7	1.1	18.7	\$35,840	High school diploma or	None	Moderate-term on-the-job training

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	2012	2022	Number	Percent							
operators								equivalent			
Pile-driver operators	47-2072	3.8	4.8	1.0	27.5	—	1.7	\$48,480	High school diploma or equivalent	None	Moderate-term on-the-job training
Operating engineers and other construction equipment operators	47-2073	351.2	417.6	66.4	18.9	3.6	144.4	\$41,870	High school diploma or equivalent	None	Moderate-term on-the-job training
Drywall installers, ceiling tile installers, and tapers	47-2080	114.1	132.0	17.9	15.7	18.7	28.7	\$37,920	—	—	—
Drywall and ceiling tile installers	47-2081	94.8	109.9	15.1	15.9	18.7	24.1	\$37,210	Less than high school	None	Moderate-term on-the-job training
Tapers	47-2082	19.2	22.1	2.9	14.8	18.7	4.7	\$45,290	Less than high school	None	Moderate-term on-the-job training
Electricians	47-2111	583.5	698.2	114.7	19.7	9.5	224.6	\$49,840	High school diploma or equivalent	None	Apprenticeship
Glaziers	47-2121	46.7	54.7	8.0	17.2	7.9	19.1	\$37,610	High school diploma or equivalent	None	Apprenticeship
Insulation workers	47-2130	52.1	71.7	19.6	37.6	1.6	26.5	\$35,940	—	—	—
Insulation workers, floor, ceiling,	47-2131	23.3	29.4	6.1	26.2	1.6	9.2	\$32,360	Less than high school	None	Short-term on-the-job training

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	2012	2022	Number	Percent							
and wall											
Insulation workers, mechanical	47-2132	28.9	42.4	13.5	46.7	1.6	17.3	\$39,170	High school diploma or equivalent	None	Apprenticeship
Painters and paperhangers	47-2140	319.6	382.2	62.6	19.6	40.3	111.1	\$35,180	—	—	—
Painters, construction and maintenance	47-2141	316.2	378.8	62.6	19.8	40.7	110.5	\$35,190	Less than high school	None	Moderate-term on-the-job training
Paperhangers	47-2142	3.5	3.4	0.0	-0.5	—	0.6	\$34,600	High school diploma or equivalent	None	Moderate-term on-the-job training
Pipelayers, plumbers, pipefitters, and steamfitters	47-2150	435.4	527.8	92.5	21.2	10.3	146.6	\$47,460	—	—	—
Pipelayers	47-2151	48.5	58.6	10.1	20.8	8.4	16.1	\$36,180	Less than high school	None	Short-term on-the-job training
Plumbers, pipefitters, and steamfitters	47-2152	386.9	469.2	82.3	21.3	10.5	130.5	\$49,140	High school diploma or equivalent	None	Apprenticeship
Plasterers and stucco masons	47-2161	22.8	26.2	3.4	15.0	6.6	4.5	\$37,130	Less than high school	None	Long-term on-the-job training
Reinforcing iron and rebar workers	47-2171	15.5	19.0	3.6	23.1	—	6.2	\$45,910	High school diploma or equivalent	None	Apprenticeship

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	2012	2022	Number	Percent						
Roofers 47-2181	132.7	147.9	15.2	11.4	28.1	42.9	\$35,290	Less than high school	None	Moderate-term on-the-job training
Sheet metal workers 47-2211	142.3	164.3	22.0	15.5	5.1	48.9	\$43,290	High school diploma or equivalent	None	Apprenticeship
Structural iron and steel workers 47-2221	58.1	70.8	12.7	21.8	0.6	31.5	\$46,140	High school diploma or equivalent	None	Apprenticeship
Solar photovoltaic installers 47-2231	4.8	5.9	1.2	24.5	—	2.0	\$37,900	High school diploma or equivalent	None	Moderate-term on-the-job training
Helpers, construction trades 47-3000	213.4	278.8	65.3	30.6	0.5	98.8	\$26,570	—	—	—
Helpers--brickmasons, blockmasons, stonemasons, and tile and marble setters 47-3011	24.4	34.9	10.5	43.0	0.5	14.3	\$28,220	Less than high school	None	Short-term on-the-job training
Helpers--carpenters 47-3012	36.4	47.1	10.8	29.6	0.5	16.4	\$25,550	Less than high school	None	Short-term on-the-job training
Helpers--electricians 47-3013	60.8	83.3	22.4	36.9	0.5	32.0	\$27,670	High school diploma or equivalent	None	Short-term on-the-job training
Helpers--painters, paperhangers 47-3014	11.1	12.2	1.1	10.2	0.5	2.9	\$24,290	Less than high school	None	Short-term on-the-job training

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(Numbers in thousands)**

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	2012	2022	Number	Percent							
plasterers, and stucco masons											
Helpers--pipelayers, plumbers, pipefitters, and steamfitters	47-3015	47.4	60.6	13.2	27.9	0.5	20.7	\$26,670	High school diploma or equivalent	None	Short-term on-the-job training
Helpers--roofers	47-3016	12.0	14.0	2.1	17.3	0.5	3.9	\$23,300	Less than high school	None	Short-term on-the-job training
Helpers, construction trades, all other	47-3019	21.4	26.6	5.2	24.3	0.5	8.6	\$25,610	Less than high school	None	Short-term on-the-job training
Other construction and related workers	47-4000	412.5	464.0	51.5	12.5	5.6	130.7	\$39,620	—	—	—
Construction and building inspectors	47-4011	102.3	114.8	12.5	12.2	10.6	36.7	\$53,450	High school diploma or equivalent	5 years or more	Moderate-term on-the-job training
Elevator installers and repairers	47-4021	19.7	24.5	4.8	24.6	—	8.0	\$76,650	High school diploma or equivalent	None	Apprenticeship
Fence erectors	47-4031	24.9	32.4	7.5	30.0	15.4	13.3	\$30,190	High school diploma or equivalent	None	Moderate-term on-the-job training
Hazardous materials removal workers	47-4041	37.5	42.9	5.3	14.2	—	13.4	\$37,590	High school diploma or equivalent	None	Moderate-term on-the-job training

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	2012	2022	Number	Percent							
Highway maintenance workers	47-4051	147.6	155.9	8.4	5.7	1.3	30.3	\$35,260	High school diploma or equivalent	None	Moderate-term on-the-job training
Rail-track laying and maintenance equipment operators	47-4061	17.3	18.2	0.9	5.2	—	4.5	\$45,920	High school diploma or equivalent	None	Moderate-term on-the-job training
Septic tank servicers and sewer pipe cleaners	47-4071	25.4	31.9	6.6	25.8	4.8	11.9	\$34,020	Less than high school	None	Moderate-term on-the-job training
Miscellaneous construction and related workers	47-4090	37.8	43.3	5.5	14.5	13.8	12.4	\$34,930	—	—	—
Segmental pavers	47-4091	1.8	2.4	0.7	38.1	17.2	1.0	\$33,720	High school diploma or equivalent	None	Moderate-term on-the-job training
Construction and related workers, all other	47-4099	36.1	40.9	4.8	13.4	13.7	11.4	\$34,990	High school diploma or equivalent	None	Moderate-term on-the-job training
Extraction workers	47-5000	267.3	311.0	43.7	16.4	1.5	126.1	\$40,650	—	—	—
Derrick, rotary drill, and service unit operators, oil, gas, and	47-5010	108.1	129.6	21.5	19.9	0.8	65.2	\$44,570	—	—	—

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	2012	2022	Number	Percent							
mining											
Derrick operators, oil and gas	47-5011	22.8	27.1	4.3	18.8	0.8	13.5	\$46,900	Less than high school	None	Short-term on-the-job training
Rotary drill operators, oil and gas	47-5012	26.0	30.9	4.8	18.6	0.8	15.4	\$49,220	Less than high school	None	Moderate-term on-the-job training
Service unit operators, oil, gas, and mining	47-5013	59.3	71.7	12.4	20.9	0.8	36.4	\$41,970	Less than high school	None	Moderate-term on-the-job training
Earth drillers, except oil and gas	47-5021	19.7	23.4	3.8	19.2	8.2	9.0	\$40,790	High school diploma or equivalent	None	Moderate-term on-the-job training
Explosives workers, ordnance handling experts, and blasters	47-5031	6.5	6.9	0.3	5.2	—	2.1	\$48,620	High school diploma or equivalent	Less than 5 years	Long-term on-the-job training
Mining machine operators	47-5040	24.5	24.7	0.2	0.8	4.4	4.7	\$50,230	—	—	—
Continuous mining machine operators	47-5041	14.3	14.3	-0.1	-0.6	4.4	2.6	\$51,950	High school diploma or equivalent	None	Moderate-term on-the-job training
Mine cutting and channeling machine operators	47-5042	7.1	7.3	0.2	2.7	4.4	1.5	\$47,950	High school diploma or equivalent	None	Moderate-term on-the-job training
Mining machine operators, all other	47-5049	3.1	3.2	0.1	2.7	4.3	0.6	\$46,810	High school diploma or equivalent	None	Moderate-term on-the-job training

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	2012	2022	Number	Percent							
Rock splitters, quarry	47-5051	4.6	5.4	0.8	17.4	1.7	1.4	\$32,280	High school diploma or equivalent	None	Short-term on-the-job training
Roof bolters, mining	47-5061	6.7	6.4	-0.3	-4.2	—	1.8	\$54,320	High school diploma or equivalent	None	Moderate-term on-the-job training
Roustabouts, oil and gas	47-5071	61.1	72.8	11.7	19.2	0.2	27.9	\$34,130	Less than high school	None	Moderate-term on-the-job training
Helpers--extraction workers	47-5081	26.4	30.8	4.4	16.6	—	11.4	\$31,460	High school diploma or equivalent	None	Moderate-term on-the-job training
Extraction workers, all other	47-5099	9.6	10.9	1.3	13.5	1.6	2.7	\$38,810	High school diploma or equivalent	None	Moderate-term on-the-job training
Installation, maintenance, and repair occupations	49-0000	5,514.8	6,046.0	531.2	9.6	5.3	1,813.7	\$41,020	—	—	—
Supervisors of installation, maintenance, and repair workers	49-1000	436.4	470.3	33.9	7.8	0.9	152.0	\$60,250	—	—	—
First-line supervisors of mechanics, installers, and repairers	49-1011	436.4	470.3	33.9	7.8	0.9	152.0	\$60,250	High school diploma or equivalent	Less than 5 years	None

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	2012	2022	Number	Percent						
Electrical and electronic equipment mechanics, installers, and repairers 49-2000	617.8	643.4	25.6	4.1	6.2	140.5	\$46,550	—	—	—
Computer, automated teller, and office machine repairers 49-2011	133.1	138.2	5.1	3.8	13.9	32.8	\$36,620	Some college, no degree	None	None
Radio and telecommunications equipment installers and repairers 49-2020	233.6	243.1	9.5	4.1	3.7	41.6	\$53,790	—	—	—
Radio, cellular, and tower equipment installers and repairs 49-2021	16.4	17.5	1.1	6.6	3.4	3.3	\$43,900	Associate's degree	None	Moderate-term on-the-job training
Telecommunications equipment installers and repairers, except line installers 49-2022	217.2	225.7	8.4	3.9	3.7	38.2	\$54,530	Postsecondary non-degree award	None	Moderate-term on-the-job training
Miscellaneous electrical and electronic equipment mechanics, installers, and repairers 49-2090	251.1	262.1	11.0	4.4	4.5	66.1	\$46,770	—	—	—
Avionics technicians 49-2091	17.1	17.6	0.5	2.9	—	4.0	\$55,350	Associate's degree	None	None
Electric motor, power 49-209	20.7	19.9	-0.8	-4.1	4.0	3.6	\$36,240	Postsecondary non-	None	Long-term on-the-job

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	2012	2022	Number	Percent							
tool, and related repairers	2							degree award		training	
Electrical and electronics installers and repairers, transportation equipment	49-2093	15.9	16.2	0.4	2.3	—	3.6	\$51,240	Postsecondary non-degree award	None	Long-term on-the-job training
Electrical and electronics repairers, commercial and industrial equipment	49-2094	69.0	71.3	2.3	3.4	0.6	16.3	\$52,650	Postsecondary non-degree award	None	Long-term on-the-job training
Electrical and electronics repairers, powerhouse, substation, and relay	49-2095	24.5	24.5	-0.1	-0.2	0.7	5.0	\$68,810	Postsecondary non-degree award	None	Long-term on-the-job training
Electronic equipment installers and repairers, motor vehicles	49-2096	14.6	13.7	-0.9	-5.9	13.6	1.3	\$31,340	Postsecondary non-degree award	None	Short-term on-the-job training
Electronic home entertainment equipment installers and repairers	49-2097	31.3	31.6	0.4	1.2	13.7	11.4	\$35,060	Postsecondary non-degree award	None	None
Security and fire alarm systems installers	49-2098	58.0	67.2	9.2	15.9	6.2	21.0	\$41,030	High school diploma or equivalent	None	Moderate-term on-the-job training
Vehicle and mobile equipment mechanics, installers,	49-3000	1,610.5	1,750.6	140.1	8.7	9.0	544.7	\$38,470	—	—	—

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(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012–22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012–22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
and repairers											
Aircraft mechanics and service technicians	49-3011	121.7	124.7	3.0	2.4	0.6	35.6	\$55,210	Postsecondary non-degree award	None	None
Automotive technicians and repairers	49-3020	873.3	956.6	83.2	9.5	13.3	294.6	\$36,850	—	—	—
Automotive body and related repairers	49-3021	154.2	174.7	20.4	13.3	10.9	50.1	\$38,380	High school diploma or equivalent	None	Moderate-term on-the-job training
Automotive glass installers and repairers	49-3022	18.0	20.5	2.4	13.6	17.0	6.9	\$32,650	High school diploma or equivalent	None	Moderate-term on-the-job training
Automotive service technicians and mechanics	49-3023	701.1	761.5	60.4	8.6	13.7	237.6	\$36,610	High school diploma or equivalent	None	Long-term on-the-job training
Bus and truck mechanics and diesel engine specialists	49-3031	250.8	272.5	21.6	8.6	5.1	75.1	\$42,320	High school diploma or equivalent	None	Long-term on-the-job training
Heavy vehicle and mobile equipment service technicians and mechanics	49-3040	176.3	192.5	16.2	9.2	3.7	67.1	\$43,820	—	—	—
Farm equipment mechanics and service	49-3041	35.8	39.2	3.4	9.5	4.3	13.8	\$34,760	High school diploma or	None	Long-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
technicians								equivalent			
Mobile heavy equipment mechanics, except engines	49-3042	119.3	131.6	12.3	10.3	3.5	46.7	\$46,050	High school diploma or equivalent	None	Long-term on-the-job training
Rail car repairers	49-3043	21.2	21.7	0.5	2.5	3.8	6.6	\$48,500	High school diploma or equivalent	None	Long-term on-the-job training
Small engine mechanics	49-3050	68.2	72.0	3.8	5.6	11.2	18.2	\$32,640	—	—	—
Motorboat mechanics and service technicians	49-3051	20.8	22.0	1.1	5.5	11.2	5.5	\$35,530	High school diploma or equivalent	None	Long-term on-the-job training
Motorcycle mechanics	49-3052	16.8	17.8	1.0	6.1	11.4	4.6	\$33,140	High school diploma or equivalent	None	Long-term on-the-job training
Outdoor power equipment and other small engine mechanics	49-3053	30.5	32.2	1.7	5.5	11.1	8.1	\$30,510	High school diploma or equivalent	None	Moderate-term on-the-job training
Miscellaneous vehicle and mobile equipment mechanics, installers, and repairers	49-3090	120.2	132.4	12.2	10.2	1.5	54.1	\$24,050	—	—	—
Bicycle	49-	10.6	13.3	2.7	25.1	1.5	6.4	\$24,150	High	None	Moderate-

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
repairers	3091							school diploma or equivalent		term on-the-job training	
Recreational vehicle service technicians	49-3092	11.1	12.1	1.0	8.7	1.5	4.8	\$34,540	High school diploma or equivalent	None	Long-term on-the-job training
Tire repairers and changers	49-3093	98.4	107.0	8.6	8.7	1.5	42.9	\$23,410	High school diploma or equivalent	None	Short-term on-the-job training
Other installation, maintenance, and repair occupations	49-9000	2,850.1	3,181.6	331.5	11.6	3.7	976.5	\$38,750	—	—	—
Control and valve installers and repairers	49-9010	56.8	60.4	3.6	6.3	—	22.9	\$45,550	—	—	—
Mechanical door repairers	49-9011	15.8	19.6	3.8	23.8	—	9.1	\$36,110	High school diploma or equivalent	None	Moderate-term on-the-job training
Control and valve installers and repairers, except mechanical door	49-9012	41.0	40.8	-0.2	-0.5	—	13.8	\$50,960	High school diploma or equivalent	None	Moderate-term on-the-job training
Heating, air conditioning, and refrigeration mechanics	49-9021	267.6	323.5	55.9	20.9	8.7	123.7	\$43,640	Postsecondary non-degree award	None	Long-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012–22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012–22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012–22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
and installers											
Home appliance repairers	49-9031	43.7	44.0	0.3	0.7	21.8	13.9	\$35,170	High school diploma or equivalent	None	Moderate-term on-the-job training
Industrial machinery installation, repair, and maintenance workers	49-9040	449.7	527.2	77.4	17.2	2.4	187.6	\$45,810	—	—	—
Industrial machinery mechanics	49-9041	319.3	379.6	60.3	18.9	3.3	152.5	\$46,920	High school diploma or equivalent	None	Long-term on-the-job training
Maintenance workers, machinery	49-9043	89.0	98.9	9.9	11.1	—	21.1	\$40,620	High school diploma or equivalent	None	Moderate-term on-the-job training
Millwrights	49-9044	39.4	46.7	7.2	18.4	—	13.4	\$49,510	High school diploma or equivalent	None	Apprenticeship
Refractory materials repairers, except brickmasons	49-9045	2.1	2.1	0.0	0.4	3.5	0.6	\$41,370	High school diploma or equivalent	None	Moderate-term on-the-job training
Line installers and repairers	49-9050	249.4	267.7	18.3	7.3	0.4	91.1	\$58,210	—	—	—
Electrical power-line installers and	49-9051	114.5	124.7	10.2	8.9	0.3	49.9	\$63,250	High school diploma	None	Long-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
repairers								or equivalent			
Telecommunications line installers and repairers	49-9052	134.9	143.0	8.1	6.0	0.4	41.2	\$51,410	High school diploma or equivalent	None	Long-term on-the-job training
Precision instrument and equipment repairers	49-9060	70.5	84.6	14.1	20.0	14.7	33.7	\$43,790	—	—	—
Camera and photographic equipment repairers	49-9061	3.1	3.2	0.1	3.3	14.4	1.0	\$37,980	Associate's degree	None	Long-term on-the-job training
Medical equipment repairers	49-9062	42.3	55.1	12.8	30.3	15.3	24.6	\$44,570	Associate's degree	None	Moderate-term on-the-job training
Musical instrument repairers and tuners	49-9063	8.2	8.7	0.5	6.2	16.1	2.8	\$30,630	High school diploma or equivalent	None	Apprenticeship
Watch repairers	49-9064	3.2	3.2	0.1	1.9	15.9	0.9	\$37,650	High school diploma or equivalent	None	Long-term on-the-job training
Precision instrument and equipment repairers, all other	49-9069	13.8	14.4	0.6	4.5	12.1	4.5	\$52,270	High school diploma or equivalent	None	Long-term on-the-job training
Maintenance and repair workers, general	49-9071	1,325.1	1,450.3	125.2	9.4	0.8	379.7	\$35,210	High school diploma or	None	Long-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
								equivalent			
Wind turbine service technicians	49-9081	3.2	4.0	0.8	24.5	—	1.3	\$45,970	Some college, no degree	None	Long-term on-the-job training
Miscellaneous installation, maintenance, and repair workers	49-9090	384.1	420.0	35.9	9.3	10.6	122.6	\$31,100	—	—	—
Coin, vending, and amusement machine servicers and repairers	49-9091	40.9	40.0	-0.9	-2.1	11.6	4.1	\$31,150	High school diploma or equivalent	None	Short-term on-the-job training
Commercial divers	49-9092	3.6	4.7	1.1	29.4	1.8	1.9	\$46,880	Postsecondary non-degree award	None	Moderate-term on-the-job training
Fabric menders, except garment	49-9093	1.0	0.9	-0.1	-10.4	19.5	0.2	\$27,020	Less than high school	None	Long-term on-the-job training
Locksmiths and safe repairers	49-9094	22.3	23.9	1.6	7.4	25.4	9.1	\$37,560	High school diploma or equivalent	None	Long-term on-the-job training
Manufactured building and mobile home installers	49-9095	5.3	4.5	-0.8	-15.1	38.0	1.3	\$28,080	High school diploma or equivalent	None	Moderate-term on-the-job training
Riggers	49-9096	15.2	18.7	3.5	23.3	1.3	7.2	\$42,660	High school diploma or equivalent	None	Short-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
	2012	2022	Number	Percent						
Signal and track switch repairers 49-9097	8.8	8.7	-0.1	-1.2	—	2.1	\$55,450	High school diploma or equivalent	None	Moderate-term on-the-job training
Helpers--installation, maintenance, and repair workers 49-9098	127.5	145.0	17.5	13.7	0.3	55.9	\$24,210	High school diploma or equivalent	None	Moderate-term on-the-job training
Installation, maintenance, and repair workers, all other 49-9099	159.6	173.6	14.0	8.8	17.1	40.8	\$36,620	High school diploma or equivalent	None	Moderate-term on-the-job training
Production occupations 51-0000	8,941.9	9,017.5	75.6	0.8	3.1	2,150.6	\$30,920	—	—	—
Supervisors of production workers 51-1000	594.7	584.2	-10.5	-1.8	3.7	83.7	\$54,040	—	—	—
First-line supervisors of production and operating workers 51-1011	594.7	584.2	-10.5	-1.8	3.7	83.7	\$54,040	Postsecondary non-degree award	Less than 5 years	None
Assemblers and fabricators 51-2000	1,755.2	1,819.4	64.2	3.7	1.4	371.5	\$28,580	—	—	—
Aircraft structure, surfaces, rigging, and systems assemblers 51-2011	41.5	44.0	2.4	5.8	—	9.1	\$45,950	High school diploma or equivalent	None	Moderate-term on-the-job training
Electrical, electronics, and electromechanical 51-2020	263.2	244.6	-18.6	-7.1	0.3	31.9	\$29,420	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
nical assemblers											
Coil winders, tapers, and finishers	51-2021	14.4	12.9	-1.5	-10.5	—	1.7	\$30,840	High school diploma or equivalent	None	Short-term on-the-job training
Electrical and electronic equipment assemblers	51-2022	198.3	184.9	-13.5	-6.8	0.3	24.0	\$28,810	High school diploma or equivalent	None	Short-term on-the-job training
Electromechanical equipment assemblers	51-2023	50.5	46.9	-3.6	-7.1	0.3	6.1	\$31,460	High school diploma or equivalent	None	Short-term on-the-job training
Engine and other machine assemblers	51-2031	42.0	41.4	-0.6	-1.4	2.0	6.7	\$36,110	High school diploma or equivalent	None	Short-term on-the-job training
Structural metal fabricators and fitters	51-2041	79.7	85.9	6.2	7.7	0.7	38.2	\$35,750	High school diploma or equivalent	None	Moderate-term on-the-job training
Miscellaneous assemblers and fabricators	51-2090	1,328.9	1,403.6	74.7	5.6	1.6	285.6	\$27,330	—	—	—
Fiberglass laminators and fabricators	51-2091	18.2	17.4	-0.7	-4.1	1.6	2.9	\$28,830	High school diploma or equivalent	None	Moderate-term on-the-job training
Team	51-	1,031	1,081.	49.5	4.8	1.6	212.6	\$27,640	High	None	Moderate-

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

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	2012	2022	Number	Percent							
assemblers	2092	209.8	209.3					school diploma or equivalent		term on-the-job training	
Timing device assemblers and adjusters	51-2093	1.2	1.1	0.0	-2.6	—	0.2	\$25,600	High school diploma or equivalent	None	Moderate-term on-the-job training
Assemblers and fabricators, all other	51-2099	277.7	303.7	26.0	9.4	1.6	69.9	\$25,920	High school diploma or equivalent	None	Moderate-term on-the-job training
Food processing workers	51-3000	746.7	769.8	23.1	3.1	2.4	221.1	\$24,380	—	—	—
Bakers	51-3011	167.6	177.0	9.4	5.6	6.0	50.1	\$23,140	Less than high school	None	Long-term on-the-job training
Butchers and other meat, poultry, and fish processing workers	51-3020	380.8	394.0	13.2	3.5	0.8	109.1	\$24,420	—	—	—
Butchers and meat cutters	51-3021	136.7	143.2	6.5	4.8	0.8	40.2	\$28,490	Less than high school	None	Long-term on-the-job training
Meat, poultry, and fish cutters and trimmers	51-3022	163.4	172.0	8.6	5.3	0.8	49.0	\$22,830	Less than high school	None	Short-term on-the-job training
Slaughterers and meat packers	51-3023	80.7	78.8	-2.0	-2.4	0.8	19.9	\$24,330	Less than high school	None	Short-term on-the-job training
Miscellaneous food processing workers	51-3090	198.3	198.8	0.5	0.2	2.3	61.9	\$25,780	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

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		2012	2022	Number	Percent						
Food and tobacco roasting, baking, and drying machine operators and tenders	51-3091	20.0	20.2	0.2	0.9	—	5.4	\$28,430	Less than high school	None	Moderate-term on-the-job training
Food batchmakers	51-3092	105.2	102.5	-2.7	-2.6	2.9	34.2	\$26,550	High school diploma or equivalent	None	Moderate-term on-the-job training
Food cooking machine operators and tenders	51-3093	33.4	33.2	-0.2	-0.6	—	8.7	\$26,350	High school diploma or equivalent	None	Moderate-term on-the-job training
Food processing workers, all other	51-3099	39.7	42.9	3.2	8.1	3.9	13.6	\$23,140	Less than high school	None	Moderate-term on-the-job training
Metal workers and plastic workers	51-4000	1,898.3	1,894.2	-4.2	-0.2	2.0	468.6	\$35,380	—	—	—
Computer control programmers and operators	51-4010	164.6	191.7	27.1	16.5	—	73.1	\$36,760	—	—	—
Computer-controlled machine tool operators, metal and plastic	51-4011	140.3	160.7	20.4	14.5	—	59.6	\$35,580	High school diploma or equivalent	None	Moderate-term on-the-job training
Computer numerically controlled machine tool programmers,	51-4012	24.3	31.0	6.7	27.6	—	13.5	\$45,920	High school diploma or equivalent	None	Long-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012–22, and worker characteristics, 2012
(Numbers in thousands)**

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	2012	2022	Number	Percent							
metal and plastic											
Forming machine setters, operators, and tenders, metal and plastic	51-4020	133.9	115.5	-18.4	-13.7	—	25.8	\$33,900	—	—	
Extruding and drawing machine setters, operators, and tenders, metal and plastic	51-4021	74.9	63.0	-11.9	-15.9	—	14.4	\$32,330	High school diploma or equivalent	None	Moderate-term on-the-job training
Forging machine setters, operators, and tenders, metal and plastic	51-4022	22.6	19.7	-2.9	-12.8	—	4.3	\$34,060	High school diploma or equivalent	None	Moderate-term on-the-job training
Rolling machine setters, operators, and tenders, metal and plastic	51-4023	36.4	32.8	-3.6	-9.9	—	7.0	\$37,390	High school diploma or equivalent	None	Moderate-term on-the-job training
Machine tool cutting setters, operators, and tenders, metal and plastic	51-4030	338.8	300.4	-38.5	-11.4	0.6	47.6	\$31,470	—	—	—
Cutting, punching, and press machine setters, operators,	51-4031	184.7	168.2	-16.4	-8.9	0.2	15.7	\$29,690	High school diploma or equivalent	None	Moderate-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
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	2012	2022	Number	Percent							
and tenders, metal and plastic											
Drilling and boring machine tool setters, operators, and tenders, metal and plastic	51-4032	20.9	16.2	-4.7	-22.5	—	4.0	\$33,940	High school diploma or equivalent	None	Moderate-term on-the-job training
Grinding, lapping, polishing, and buffing machine tool setters, operators, and tenders, metal and plastic	51-4033	71.5	62.5	-9.0	-12.6	2.0	16.0	\$31,620	High school diploma or equivalent	None	Moderate-term on-the-job training
Lathe and turning machine tool setters, operators, and tenders, metal and plastic	51-4034	38.6	33.2	-5.4	-14.0	0.6	7.4	\$36,540	High school diploma or equivalent	None	Moderate-term on-the-job training
Milling and planing machine setters, operators, and tenders, metal and plastic	51-4035	23.1	20.2	-2.9	-12.6	—	4.5	\$35,820	High school diploma or equivalent	None	Moderate-term on-the-job training
Machinists	51-4041	397.5	432.4	34.8	8.8	1.1	125.9	\$39,500	High school diploma or equivalent	None	Long-term on-the-job training
Metal furnace	51-	31.5	27.2	-4.3	-13.6	0.8	4.1	\$37,180	—	—	—

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	2012	2022	Number	Percent							
operators, tenders, pourers, and casters	4050										
Metal-refining furnace operators and tenders	51-4051	20.8	18.5	-2.3	-10.9	0.8	2.7	\$38,900	High school diploma or equivalent	None	Moderate-term on-the-job training
Pourers and casters, metal	51-4052	10.7	8.7	-2.0	-18.7	0.8	1.4	\$34,060	High school diploma or equivalent	None	Moderate-term on-the-job training
Model makers and patternmakers, metal and plastic	51-4060	10.6	11.0	0.4	3.8	6.3	2.4	\$44,340	—	—	—
Model makers, metal and plastic	51-4061	6.1	6.3	0.1	2.2	6.3	1.3	\$45,850	High school diploma or equivalent	None	Moderate-term on-the-job training
Patternmakers, metal and plastic	51-4062	4.4	4.7	0.3	6.0	6.3	1.1	\$42,440	High school diploma or equivalent	None	Moderate-term on-the-job training
Molders and molding machine setters, operators, and tenders, metal and plastic	51-4070	137.5	116.3	-21.2	-15.4	—	16.6	\$28,800	—	—	—
Foundry mold and coremakers	51-4071	12.4	10.4	-2.0	-16.2	—	1.5	\$30,540	High school diploma	None	Moderate-term on-the-job training

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	2012	2022	Number	Percent							
								or equivalent			
Molding, coremaking, and casting machine setters, operators, and tenders, metal and plastic	51-4072	125.0	105.8	-19.2	-15.4	—	15.1	\$28,630	High school diploma or equivalent	None	Moderate-term on-the-job training
Multiple machine tool setters, operators, and tenders, metal and plastic	51-4081	85.9	74.5	-11.4	-13.2	—	16.6	\$33,960	High school diploma or equivalent	None	Moderate-term on-the-job training
Tool and die makers	51-4111	78.6	77.5	-1.1	-1.4	1.8	4.7	\$47,000	High school diploma or equivalent	None	Long-term on-the-job training
Welding, soldering, and brazing workers	51-4120	411.0	442.3	31.4	7.6	5.8	132.2	\$36,090	—	—	—
Welders, cutters, solderers, and brazers	51-4121	357.4	378.2	20.8	5.8	5.8	108.5	\$36,300	High school diploma or equivalent	None	Moderate-term on-the-job training
Welding, soldering, and brazing machine setters, operators, and tenders	51-4122	53.5	64.1	10.6	19.8	5.8	23.7	\$34,720	High school diploma or equivalent	None	Moderate-term on-the-job training
Miscellaneous metal	51-419	108.5	105.5	-3.0	-2.8	5.6	19.5	\$32,700	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
workers and plastic workers	0										
Heat treating equipment setters, operators, and tenders, metal and plastic	51-4191	22.0	21.6	-0.4	-1.9	—	4.2	\$34,010	High school diploma or equivalent	None	Moderate-term on-the-job training
Layout workers, metal and plastic	51-4192	12.7	12.3	-0.4	-3.0	—	2.4	\$42,050	High school diploma or equivalent	None	Moderate-term on-the-job training
Plating and coating machine setters, operators, and tenders, metal and plastic	51-4193	35.0	31.9	-3.0	-8.6	0.4	6.7	\$29,720	High school diploma or equivalent	None	Moderate-term on-the-job training
Tool grinders, filers, and sharpeners	51-4194	12.6	12.6	0.1	0.4	4.1	2.5	\$34,300	High school diploma or equivalent	None	Moderate-term on-the-job training
Metal workers and plastic workers, all other	51-4199	26.3	27.1	0.8	2.9	20.5	3.6	\$31,060	High school diploma or equivalent	None	Moderate-term on-the-job training
Printing workers	51-5100	276.0	261.5	-14.5	-5.3	3.3	51.9	\$34,100	—	—	—
Prepress technicians and workers	51-5111	42.7	37.2	-5.5	-12.9	3.6	10.9	\$37,260	Postsecondary non-degree award	None	None

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Printing press operators	51-5112	178.4	171.4	-7.0	-3.9	3.1	31.4	\$34,690	High school diploma or equivalent	None	Moderate-term on-the-job training
Print binding and finishing workers	51-5113	54.9	52.9	-2.0	-3.7	3.9	9.6	\$29,750	High school diploma or equivalent	None	Short-term on-the-job training
Textile, apparel, and furnishings workers	51-6000	657.5	610.6	-47.0	-7.1	12.1	134.6	\$22,000	—	—	—
Laundry and dry-cleaning workers	51-6011	210.7	231.2	20.5	9.7	4.9	82.9	\$19,930	Less than high school	None	Short-term on-the-job training
Pressers, textile, garment, and related materials	51-6021	54.3	55.7	1.4	2.6	1.9	6.9	\$19,670	Less than high school	None	Short-term on-the-job training
Sewing machine operators	51-6031	161.4	119.7	-41.7	-25.8	12.0	7.7	\$21,270	Less than high school	None	Short-term on-the-job training
Shoe and leather workers	51-6040	12.1	9.7	-2.4	-20.1	24.0	2.0	\$24,050	—	—	—
Shoe and leather workers and repairers	51-6041	8.7	7.4	-1.2	-14.0	33.6	1.4	\$23,950	High school diploma or equivalent	None	Moderate-term on-the-job training
Shoe machine operators and tenders	51-6042	3.5	2.3	-1.2	-35.3	—	0.6	\$24,310	High school diploma or equivalent	None	Short-term on-the-job training
Tailors,	51-	61.0	59.1	-1.9	-3.1	48.6	6.5	\$25,390	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
dressmakers, and sewers	6050										
Sewers, hand	51-6051	11.1	10.0	-1.0	-9.3	48.5	1.2	\$22,820	Less than high school	None	Moderate-term on-the-job training
Tailors, dressmakers, and custom sewers	51-6052	49.9	49.0	-0.9	-1.8	48.7	5.3	\$26,280	Less than high school	None	Moderate-term on-the-job training
Textile machine setters, operators, and tenders	51-6060	76.3	58.3	-17.9	-23.5	1.1	12.3	\$25,520	—	—	—
Textile bleaching and dyeing machine operators and tenders	51-6061	11.4	8.6	-2.7	-24.0	—	1.8	\$24,210	High school diploma or equivalent	None	Short-term on-the-job training
Textile cutting machine setters, operators, and tenders	51-6062	15.5	11.3	-4.2	-27.1	—	2.5	\$24,050	High school diploma or equivalent	None	Moderate-term on-the-job training
Textile knitting and weaving machine setters, operators, and tenders	51-6063	21.9	16.5	-5.4	-24.5	3.7	3.5	\$26,540	High school diploma or equivalent	None	Moderate-term on-the-job training
Textile winding, twisting, and drawing out machine setters, operators, and tenders	51-6064	27.5	21.8	-5.6	-20.5	—	4.4	\$25,850	High school diploma or equivalent	None	Moderate-term on-the-job training
Miscellaneous textile,	51-609	81.8	76.9	-4.9	-5.9	19.0	16.2	\$30,220	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
apparel, and furnishings workers	0										
Extruding and forming machine setters, operators, and tenders, synthetic and glass fibers	51-6091	18.0	15.8	-2.2	-12.2	1.6	2.9	\$32,430	High school diploma or equivalent	None	Moderate-term on-the-job training
Fabric and apparel patternmakers	51-6092	6.5	4.9	-1.6	-25.0	—	1.0	\$38,650	High school diploma or equivalent	None	Moderate-term on-the-job training
Upholsterers	51-6093	40.9	41.2	0.3	0.7	31.7	11.3	\$29,930	High school diploma or equivalent	None	Moderate-term on-the-job training
Textile, apparel, and furnishings workers, all other	51-6099	16.4	15.0	-1.3	-8.2	13.7	1.0	\$25,930	High school diploma or equivalent	None	Short-term on-the-job training
Woodworkers	51-7000	222.3	239.0	16.7	7.5	9.2	46.3	\$28,440	—	—	—
Cabinetmakers and bench carpenters	51-7011	86.2	89.7	3.5	4.1	9.3	10.4	\$30,980	High school diploma or equivalent	None	Moderate-term on-the-job training
Furniture finishers	51-7021	14.8	15.3	0.5	3.3	7.6	2.8	\$28,500	High school diploma or equivalent	None	Short-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Model makers and patternmakers, wood	51-7030	2.0	2.1	0.1	3.5	—	0.4	\$32,890	—	—	—
Model makers, wood	51-7031	1.3	1.3	0.1	5.5	—	0.3	\$28,800	High school diploma or equivalent	None	Moderate-term on-the-job training
Patternmakers, wood	51-7032	0.8	0.8	0.0	0.2	—	0.1	\$39,840	High school diploma or equivalent	None	Moderate-term on-the-job training
Woodworking machine setters, operators, and tenders	51-7040	101.7	113.4	11.7	11.5	1.8	26.1	\$26,730	—	—	—
Sawing machine setters, operators, and tenders, wood	51-7041	40.2	45.7	5.4	13.5	3.5	16.6	\$26,190	High school diploma or equivalent	None	Short-term on-the-job training
Woodworking machine setters, operators, and tenders, except sawing	51-7042	61.5	67.7	6.3	10.2	0.8	9.6	\$27,030	High school diploma or equivalent	None	Short-term on-the-job training
Woodworkers all other	51-7099	17.5	18.4	0.9	5.0	53.5	6.6	\$27,360	High school diploma or equivalent	None	Moderate-term on-the-job training
Plant and system operators	51-8000	314.2	311.8	-2.4	-0.8	—	118.0	\$53,820	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Power plant operators, distributors, and dispatchers	51-8010	60.7	56.0	-4.6	-7.6	—	18.8	\$68,230	—	—	—
Nuclear power reactor operators	51-8011	7.2	7.2	0.0	0.5	—	2.3	\$74,990	High school diploma or equivalent	None	Long-term on-the-job training
Power distributors and dispatchers	51-8012	11.7	11.6	-0.1	-0.9	—	3.6	\$71,690	High school diploma or equivalent	None	Long-term on-the-job training
Power plant operators	51-8013	41.8	37.2	-4.5	-10.8	—	12.9	\$66,130	High school diploma or equivalent	None	Long-term on-the-job training
Stationary engineers and boiler operators	51-8021	37.9	39.0	1.2	3.1	—	12.7	\$53,560	High school diploma or equivalent	None	Long-term on-the-job training
Water and wastewater treatment plant and system operators	51-8031	111.0	119.6	8.6	7.7	—	47.5	\$42,760	High school diploma or equivalent	None	Long-term on-the-job training
Miscellaneous plant and system operators	51-8090	104.7	97.2	-7.5	-7.2	—	38.9	\$57,980	—	—	—
Chemical plant and system operators	51-8091	38.3	33.9	-4.4	-11.5	—	14.2	\$54,390	High school diploma or equivalent	None	Long-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
	2012	2022	Number	Percent						
Gas plant operators 51-8092	12.5	11.4	-1.1	-8.8	—	4.7	\$61,140	High school diploma or equivalent	None	Long-term on-the-job training
Petroleum pump system operators, refinery operators, and gaugers 51-8093	41.9	39.8	-2.1	-5.1	—	15.5	\$61,850	High school diploma or equivalent	None	Long-term on-the-job training
Plant and system operators, all other 51-8099	11.9	12.0	0.1	0.7	—	4.5	\$53,130	High school diploma or equivalent	None	Long-term on-the-job training
Other production occupations 51-9000	2,476.9	2,527.1	50.2	2.0	2.5	655.1	\$29,330	—	—	—
Chemical processing machine setters, operators, and tenders 51-9010	97.7	91.8	-5.9	-6.0	0.2	34.0	\$43,280	—	—	—
Chemical equipment operators and tenders 51-9011	56.4	51.7	-4.7	-8.3	0.2	19.7	\$47,100	High school diploma or equivalent	None	Moderate-term on-the-job training
Separating, filtering, clarifying, precipitating, and still machine setters, operators, and tenders 51-9012	41.3	40.1	-1.2	-2.9	0.2	14.4	\$38,570	High school diploma or equivalent	None	Moderate-term on-the-job training

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(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Crushing, grinding, polishing, mixing, and blending workers	51-9020	181.8	176.8	-5.0	-2.7	2.3	51.3	\$32,290	—	—	—
Crushing, grinding, and polishing machine setters, operators, and tenders	51-9021	30.2	29.5	-0.7	-2.3	2.3	8.5	\$31,830	High school diploma or equivalent	None	Moderate-term on-the-job training
Grinding and polishing workers, hand	51-9022	31.5	31.0	-0.5	-1.7	2.3	8.9	\$27,890	Less than high school	None	Moderate-term on-the-job training
Mixing and blending machine setters, operators, and tenders	51-9023	120.1	116.4	-3.7	-3.1	2.3	33.9	\$33,840	High school diploma or equivalent	None	Moderate-term on-the-job training
Cutting workers	51-9030	72.6	65.5	-7.1	-9.7	3.0	12.2	\$30,000	—	—	—
Cutters and trimmers, hand	51-9031	14.2	12.1	-2.2	-15.3	3.0	2.4	\$24,530	Less than high school	None	Short-term on-the-job training
Cutting and slicing machine setters, operators, and tenders	51-9032	58.3	53.4	-4.9	-8.4	3.0	9.8	\$31,430	High school diploma or equivalent	None	Short-term on-the-job training
Extruding, forming, pressing, and compacting machine setters, operators, and tenders	51-9041	70.6	68.3	-2.2	-3.2	—	19.2	\$31,310	High school diploma or equivalent	None	Moderate-term on-the-job training

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(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Furnace, kiln, oven, drier, and kettle operators and tenders	51-9051	20.5	19.6	-0.9	-4.3	1.0	4.8	\$35,530	High school diploma or equivalent	None	Moderate-term on-the-job training
Inspectors, testers, sorters, samplers, and weighers	51-9061	464.3	490.0	25.7	5.5	1.6	127.7	\$34,460	High school diploma or equivalent	None	Moderate-term on-the-job training
Jewelers and precious stone and metal workers	51-9071	32.7	29.5	-3.2	-9.8	32.6	6.7	\$35,350	High school diploma or equivalent	None	Long-term on-the-job training
Medical, dental, and ophthalmic laboratory technicians	51-9080	82.9	88.5	5.6	6.7	4.4	33.6	\$33,070	—	—	—
Dental laboratory technicians	51-9081	39.0	40.0	1.0	2.6	4.3	14.2	\$36,090	High school diploma or equivalent	None	Moderate-term on-the-job training
Medical appliance technicians	51-9082	12.9	13.8	0.8	6.4	4.3	5.2	\$36,100	High school diploma or equivalent	None	Long-term on-the-job training
Ophthalmic laboratory technicians	51-9083	31.0	34.7	3.7	12.1	4.4	14.2	\$28,590	High school diploma or equivalent	None	Moderate-term on-the-job training
Packaging and filling machine	51-9111	369.2	371.4	2.3	0.6	0.1	89.3	\$25,860	High school diploma	None	Moderate-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

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	2012	2022	Number	Percent							
operators and tenders								or equivalent			
Painting workers	51-9120	149.7	155.2	5.5	3.7	3.9	32.8	\$32,850	—	—	—
Coating, painting, and spraying machine setters, operators, and tenders	51-9121	83.8	84.2	0.4	0.5	3.9	15.7	\$30,530	High school diploma or equivalent	None	Moderate-term on-the-job training
Painters, transportation equipment	51-9122	48.9	54.0	5.1	10.4	3.8	14.0	\$39,600	High school diploma or equivalent	None	Moderate-term on-the-job training
Painting, coating, and decorating workers	51-9123	17.0	17.0	0.0	0.2	3.8	3.1	\$27,790	Less than high school	None	Moderate-term on-the-job training
Semiconductor processors	51-9141	21.3	15.5	-5.8	-27.1	—	5.0	\$33,020	Associate's degree	None	Moderate-term on-the-job training
Photographic process workers and processing machine operators	51-9151	47.1	47.2	0.1	0.2	4.1	13.9	\$23,120	High school diploma or equivalent	None	Short-term on-the-job training
Miscellaneous production workers	51-9190	866.8	907.8	41.1	4.7	3.0	224.5	\$25,290	—	—	—
Adhesive bonding machine operators and tenders	51-9191	16.8	16.9	0.1	0.6	—	4.1	\$29,830	High school diploma or equivalent	None	Moderate-term on-the-job training
Cleaning, washing, and	51-919	16.0	15.9	-0.1	-0.6	1.5	3.8	\$26,210	Less than high	None	Moderate-term on-the-

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
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	2012	2022	Number	Percent							
metal pickling equipment operators and tenders	2							school		job training	
Cooling and freezing equipment operators and tenders	51-9193	8.3	8.3	0.1	1.0	—	2.0	\$28,200	High school diploma or equivalent	None	Moderate-term on-the-job training
Etchers and engravers	51-9194	9.7	9.3	-0.4	-3.8	10.9	2.3	\$28,390	High school diploma or equivalent	None	Moderate-term on-the-job training
Molders, shapers, and casters, except metal and plastic	51-9195	42.0	45.1	3.1	7.5	26.9	17.0	\$29,300	High school diploma or equivalent	None	Long-term on-the-job training
Paper goods machine setters, operators, and tenders	51-9196	95.0	87.5	-7.6	-8.0	—	8.5	\$34,690	High school diploma or equivalent	None	Moderate-term on-the-job training
Tire builders	51-9197	17.4	15.8	-1.5	-8.8	—	4.1	\$41,210	High school diploma or equivalent	None	Moderate-term on-the-job training
Helpers--production workers	51-9198	419.9	449.6	29.8	7.1	0.2	102.2	\$22,810	Less than high school	None	Short-term on-the-job training
Production workers, all other	51-9199	241.8	259.3	17.5	7.3	5.1	80.6	\$26,940	High school diploma or equivalent	None	Moderate-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
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	2012	2022	Number	Percent						
Transportation and material moving occupations 53-0000	9,245.7	10,036.4	790.6	8.6	4.0	2,992.1	\$28,960	—	—	—
Supervisors of transportation and material moving workers 53-1000	379.5	411.5	32.0	8.4	1.2	136.4	\$48,910	—	—	—
Aircraft cargo handling supervisors 53-1011	6.8	6.9	0.0	0.7	1.3	1.9	\$47,930	High school diploma or equivalent	Less than 5 years	None
First-line supervisors of helpers, laborers, and material movers, hand 53-1021	171.6	186.3	14.7	8.5	1.3	61.9	\$45,180	High school diploma or equivalent	Less than 5 years	None
First-line supervisors of transportation and material-moving machine and vehicle operators 53-1031	201.0	218.3	17.3	8.6	1.1	72.6	\$53,240	High school diploma or equivalent	Less than 5 years	None
Air transportation workers 53-2000	220.9	215.3	-5.6	-2.6	0.7	62.5	\$68,210	—	—	—
Aircraft pilots and flight engineers 53-2010	104.1	103.3	-0.8	-0.8	1.4	33.7	\$98,410	—	—	—
Airline pilots, copilots, and flight engineers 53-2011	66.4	62.1	-4.4	-6.6	—	19.2	\$114,200	Bachelor's degree	Less than 5 years	Moderate-term on-the-job training
Commercial pilots 53-201	37.6	41.2	3.6	9.4	4.0	14.4	\$73,280	High school	None	Moderate-term on-the-

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	2012	2022	Number	Percent							
	2							diploma or equivalent		job training	
Air traffic controllers and airfield operations specialists	53-2020	32.1	32.8	0.7	2.3	—	14.9	\$102,490	—	—	
Air traffic controllers	53-2021	25.0	25.4	0.4	1.4	—	11.4	\$122,530	Associate's degree	None	Long-term on-the-job training
Airfield operations specialists	53-2022	7.1	7.5	0.4	5.1	—	3.5	\$48,080	High school diploma or equivalent	None	Long-term on-the-job training
Flight attendants	53-2031	84.8	79.2	-5.5	-6.5	—	14.0	\$37,240	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training
Motor vehicle operators	53-3000	3,945.4	4,314.2	368.8	9.3	7.3	1,013.2	\$32,800	—	—	—
Ambulance drivers and attendants, except emergency medical technicians	53-3011	18.9	24.8	5.9	31.1	—	9.0	\$23,440	High school diploma or equivalent	None	Moderate-term on-the-job training
Bus drivers	53-3020	654.3	712.2	57.9	8.9	1.3	178.0	\$29,550	—	—	—
Bus drivers, transit and intercity	53-3021	170.6	187.4	16.8	9.8	1.4	48.1	\$36,600	High school diploma or equivalent	None	Moderate-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Bus drivers, school or special client	53-3022	483.6	524.8	41.1	8.5	1.3	129.9	\$28,080	High school diploma or equivalent	None	Short-term on-the-job training
Driver/sales workers and truck drivers	53-3030	2,975.1	3,236.5	261.4	8.8	7.2	737.2	\$34,550	—	—	—
Driver/sales workers	53-3031	432.0	468.8	36.8	8.5	7.3	105.9	\$22,670	High school diploma or equivalent	None	Short-term on-the-job training
Heavy and tractor-trailer truck drivers	53-3032	1,701.5	1,894.1	192.6	11.3	7.2	464.7	\$38,200	Postsecondary non-degree award	None	Short-term on-the-job training
Light truck or delivery services drivers	53-3033	841.6	873.6	32.0	3.8	7.2	166.6	\$29,390	High school diploma or equivalent	None	Short-term on-the-job training
Taxi drivers and chauffeurs	53-3041	233.0	269.1	36.2	15.5	26.1	63.7	\$22,820	Less than high school	None	Short-term on-the-job training
Motor vehicle operators, all other	53-3099	64.1	71.5	7.4	11.5	3.0	25.3	\$26,930	High school diploma or equivalent	None	Short-term on-the-job training
Rail transportation workers	53-4000	126.0	122.7	-3.3	-2.6	—	38.8	\$52,910	—	—	—
Locomotive engineers and operators	53-4010	44.9	42.9	-2.0	-4.5	—	13.6	\$50,860	—	—	—
Locomotive engineers	53-401	38.0	36.5	-1.5	-3.9	—	11.4	\$52,280	High school	Less than 5	Moderate-term on-the-

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
	1							diploma or equivalent	years	job training	
Locomotive firers	53-4012	1.6	0.9	-0.7	-42.0	—	0.5	\$44,920	High school diploma or equivalent	None	Moderate-term on-the-job training
Rail yard engineers, dinkey operators, and hostlers	53-4013	5.3	5.4	0.1	2.4	—	1.7	\$41,230	High school diploma or equivalent	None	Moderate-term on-the-job training
Railroad brake, signal, and switch operators	53-4021	25.0	24.4	-0.7	-2.6	—	7.6	\$51,340	High school diploma or equivalent	None	Moderate-term on-the-job training
Railroad conductors and yardmasters	53-4031	43.8	42.5	-1.3	-2.9	—	13.3	\$54,700	High school diploma or equivalent	None	Moderate-term on-the-job training
Subway and streetcar operators	53-4041	9.0	9.6	0.6	6.5	—	3.3	\$62,730	High school diploma or equivalent	None	Moderate-term on-the-job training
Rail transportation workers, all other	53-4099	3.1	3.2	0.1	2.2	—	1.0	\$55,080	High school diploma or equivalent	None	Moderate-term on-the-job training
Water transportation workers	53-5000	81.6	92.4	10.9	13.3	5.1	48.1	\$48,980	—	—	—

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Sailors and marine oilers	53-5011	31.9	36.9	5.0	15.5	—	19.3	\$38,190	Less than high school	None	Moderate-term on-the-job training
Ship and boat captains and operators	53-5020	38.8	43.9	5.1	13.1	10.7	23.1	\$62,640	—	—	—
Captains, mates, and pilots of water vessels	53-5021	35.4	40.2	4.9	13.8	10.8	21.3	\$66,150	Bachelor's degree	None	None
Motorboat operators	53-5022	3.4	3.6	0.2	5.7	9.6	1.8	\$35,190	High school diploma or equivalent	None	Short-term on-the-job training
Ship engineers	53-5031	10.8	11.7	0.8	7.8	—	5.7	\$70,890	Bachelor's degree	None	None
Other transportation workers	53-6000	334.6	371.8	37.2	11.1	0.6	161.4	\$21,600	—	—	—
Bridge and lock tenders	53-6011	3.6	3.6	-0.1	-2.0	—	1.4	\$45,940	High school diploma or equivalent	None	Short-term on-the-job training
Parking lot attendants	53-6021	128.3	137.6	9.3	7.3	0.1	70.9	\$19,540	Less than high school	None	Short-term on-the-job training
Automotive and watercraft service attendants	53-6031	109.5	129.3	19.8	18.1	0.9	51.2	\$20,140	Less than high school	None	Short-term on-the-job training
Traffic technicians	53-6041	6.6	7.3	0.8	11.7	—	3.4	\$38,380	High school diploma or equivalent	None	Moderate-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code		Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation
		2012	2022	Number	Percent						
Transportation inspectors	53-6051	26.2	29.1	2.9	11.2	4.0	11.7	\$63,680	High school diploma or equivalent	None	Moderate-term on-the-job training
Transportation attendants, except flight attendants	53-6061	23.3	25.9	2.6	11.0	—	6.4	\$21,490	High school diploma or equivalent	None	Short-term on-the-job training
Transportation workers, all other	53-6099	37.1	39.0	1.9	5.1	—	16.5	\$30,870	High school diploma or equivalent	None	Short-term on-the-job training
Material moving workers	53-7000	4,157.8	4,508.5	350.7	8.4	1.8	1,531.7	\$24,230	—	—	—
Conveyor operators and tenders	53-7011	39.1	40.5	1.3	3.4	—	12.4	\$29,610	Less than high school	None	Short-term on-the-job training
Crane and tower operators	53-7021	43.8	51.2	7.4	16.8	0.8	22.4	\$47,290	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training
Dredge, excavating, and loading machine operators	53-7030	55.9	64.4	8.5	15.1	11.0	12.9	\$38,960	—	—	—
Dredge operators	53-7031	2.0	2.2	0.3	13.3	10.8	0.4	\$37,170	Less than high school	None	Short-term on-the-job training
Excavating and loading machine and dragline operators	53-7032	50.7	58.9	8.2	16.2	11.0	12.3	\$38,290	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
Loading machine operators, underground mining	53-7033	3.3	3.3	0.0	-0.6	11.4	0.3	\$48,420	Less than high school	None	Short-term on-the-job training
Hoist and winch operators	53-7041	3.1	3.2	0.1	2.7	—	1.0	\$39,960	Less than high school	None	Short-term on-the-job training
Industrial truck and tractor operators	53-7051	508.6	495.0	-13.6	-2.7	1.0	116.8	\$30,220	Less than high school	None	Short-term on-the-job training
Laborers and material movers, hand	53-7060	3,295.6	3,615.6	320.0	9.7	1.4	1,287.1	\$22,770	—	—	—
Cleaners of vehicles and equipment	53-7061	325.2	361.2	35.9	11.1	5.1	126.3	\$19,850	Less than high school	None	Short-term on-the-job training
Laborers and freight, stock, and material movers, hand	53-7062	2,197.3	2,439.2	241.9	11.0	1.2	922.5	\$23,890	Less than high school	None	Short-term on-the-job training
Machine feeders and offbearers	53-7063	106.1	108.2	2.1	2.0	0.2	23.2	\$27,120	Less than high school	None	Short-term on-the-job training
Packers and packagers, hand	53-7064	666.9	707.0	40.1	6.0	0.3	215.0	\$19,910	Less than high school	None	Short-term on-the-job training
Pumping station operators	53-7070	34.3	37.9	3.7	10.7	8.8	15.7	\$46,240	—	—	—
Gas compressor and gas pumping station operators	53-7071	4.8	4.7	-0.1	-3.1	8.7	1.7	\$51,150	Less than high school	None	Moderate-term on-the-job training
Pump operators, except wellhead	53-7072	13.2	14.7	1.4	10.8	8.8	6.0	\$44,610	Less than high school	None	Moderate-term on-the-job training

**Table 1.7 Occupational employment and job openings data, projected 2012—22, and worker characteristics, 2012
(Numbers in thousands)**

2012 National Employment Matrix title and code	Employment		Employment change, 2012—22		Percent self employed, 2012	Job openings due to growth and replacement needs, 2012—22	Median annual wage, 2012 (1)	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency in the occupation	
	2012	2022	Number	Percent							
pumpers											
Wellhead pumpers	53-7073	16.2	18.6	2.4	14.8	8.8	8.0	\$45,690	Less than high school	Less than 5 years	Moderate-term on-the-job training
Refuse and recyclable material collectors	53-7081	133.2	154.9	21.6	16.2	10.2	49.3	\$32,930	Less than high school	None	Short-term on-the-job training
Mine shuttle car operators	53-7111	3.0	2.9	-0.1	-3.7	—	0.8	\$52,110	Less than high school	None	Short-term on-the-job training
Tank car, truck, and ship loaders	53-7121	12.5	12.8	0.3	2.7	—	3.9	\$44,100	Less than high school	None	Short-term on-the-job training
Material moving workers, all other	53-7199	28.7	30.2	1.5	5.3	2.6	9.4	\$37,320	Less than high school	None	Short-term on-the-job training

Notes:

Data is unavailable for values denoted with a "—".

Footnotes:

1 Data are from the Occupational Employment Statistics program, U.S. Department of Labor, U.S. Bureau of Labor Statistics.

Source: Employment Projections program, U.S. Department of Labor, U.S. Bureau of Labor Statistics

U.S. Bureau of Labor Statistics | Office of Occupational Statistics and Employment Projections, PSB Suite 2135, 2 Massachusetts Avenue, NE Washington, DC 20212-0001

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