



regions' 1, 2, 3-4, & 5 stem jobs

2014-2024

november 2016



stem occupations by group

region 1

Occupational Title	Employment ^[1]			\$ ^[2]		Career Preparation ^[3]			Top Skills ^[4] (L-R in order of significance)
	2014 Estimated	2024 Projected	Annual Growth Rate (%)	2016 Mean Wage	2016 Mean Salary	Educ	Work Exp	Job Training	
Total, All Occupations	126,490	136,880	0.8	18.47	38,412				
Management Occupations	13,275	13,705	0.3	38.17	79,384				
General & Operations Managers	1,555	1,725	1.1	35.88	74,633	BA	> 5	N	B2 B7 B9 B3 B6
Financial Managers	420	470	1.2	47.25	98,276	BA	> 5	N	C1 B3 B2 B7 SY1 B9 B10
Farmers, Ranchers, & Other Agricultural Managers	7,245	7,215	0.0	N.A.	N.A.	HS	> 5	N	B3 B9 B2 SY1 B7 R4
Medical & Health Services Managers	300	350	1.7	36.32	75,555	BA	< 5	N	B7 B9 B2 B3 SY1
Managers, All Other	1,065	1,035	-0.2	29.25	60,840	BA	< 5	N	
Business & Financial Operations Occupations	5,000	5,515	1.0	26.82	55,795				
Business Operations Specialists, All Other	1,030	1,065	0.3	23.91	49,728	BA	N	N	
Accountants & Auditors	840	945	1.3	28.30	58,865	BA	N	N	B2 B5 B7 B10 B9
Computer & Mathematical Occupations	2,350	2,800	1.9	30.27	62,952				
Computer Systems Analysts	465	580	2.6	33.17	68,996	BA	N	N	B3 B2 B7 B9 SY2
Software Developers, Applications	365	455	2.5	35.92	74,715	BA	N	N	C1 T7 SY2 SY1 SY3
Software Developers, Systems Software	460	570	2.4	41.83	87,008	BA	N	N	B3 B2 T7 B7 C1
Computer User Support Specialists	420	490	1.7	20.53	42,701	SC	N	N	B2 B9 B7 B3 B10
Healthcare Practitioners & Technical Occupations	5,690	6,585	1.6	30.66	63,765				
Registered Nurses	2,220	2,635	1.9	24.64	51,244	BA	N	N	SO6 B2 SO1 B9 B3 B7 SO5
Emergency Medical Technicians & Paramedics	315	370	1.9	13.24	27,540	PS	N	N	B3 SO5 B2 SO6 B9
Licensed Practical & Licensed Vocational Nurses	540	610	1.3	19.64	40,847	PS	N	N	B2 B9 B3 B7 SO1 SO5
Healthcare Support Occupations	3,610	4,165	1.5	13.07	27,184				
Dental Assistants	245	270	1.0	16.92	35,192	PS	N	N	B9 B2 B7 SO5 B3
Food Preparation & Serving Related Occupations	9,100	9,865	0.8	9.72	20,215				
First-Line Supervisors of Food Preparation & Serving Wkrs	415	465	1.1	14.20	29,540	HS	< 5	N	B9 B2 SO1 SO5 R3 B6
Cooks, Institution & Cafeteria	815	845	0.4	11.43	23,766	NE	N	S	R4 B2 B3 B6 B7 SO5
Construction & Extraction Occupations	5,500	6,205	1.3	20.45	42,539				
Electricians	450	525	1.8	23.15	48,153	HS	N	A	T11 T9 B2 B3 T5 T8
Installation, Maintenance, & Repair Occupations	5,175	5,845	1.3	18.98	39,482				
Automotive Service Technicians & Mechanics	655	730	1.1	17.65	36,707	PS	N	S	T1 T9 T11 T2 T8
Farm Equipment Mechanics & Service Technicians	350	395	1.3	19.69	40,951	HS	N	L	T9 T1 T11 T8 B3 T4 T5
Production Occupations	14,075	14,775	0.5	16.45	34,212				
Computer-Controlled Machine Tool Operators, Metal & Plastic	820	990	2.1	17.09	35,551	HS	N	M	B6 T5 B3 T8 T4

region 2

Total, All Occupations	62,750	67,085	0.7	17.94	37,307				
Management Occupations	6,960	7,105	0.2	35.35	73,531				
Farmers, Ranchers, & Other Agricultural Managers	4,155	4,140	0.0	N.A.	N.A.	HS	> 5	N	B3 B9 B2 SY1 B7 R4
Managers, All Other	585	570	-0.3	41.29	85,875	BA	< 5	N	
Business & Financial Operations Occupations	2,015	2,185	0.8	26.94	56,028				
Business Operations Specialists, All Other	530	545	0.3	26.65	55,428	BA	N	N	
Accountants & Auditors	350	395	1.3	27.29	56,761	BA	N	N	B2 B5 B7 B10 B9
Healthcare Practitioners & Technical Occupations	2,975	3,400	1.4	31.02	64,513				
Registered Nurses	1,110	1,290	1.6	24.98	51,954	BA	N	N	SO6 B2 SO1 B9 B3 B7 SO5
Licensed Practical & Licensed Vocational Nurses	280	300	0.7	18.89	39,284	PS	N	N	B2 B9 B3 B7 SO1 SO5
Food Preparation & Serving Related Occupations	4,235	4,585	0.8	9.57	19,906				
First-Line Supervisors of Food Preparation & Serving Workers	285	320	1.4	12.84	26,710	HS	< 5	N	B9 B2 SO1 SO5 R3 B6
Cooks, Institution & Cafeteria	255	290	1.4	11.51	23,931	NE	N	S	R4 B2 B3 B6 B7 SO5
Installation, Maintenance, & Repair Occupations	2,685	2,970	1.1	20.37	42,367				
Automotive Service Technicians & Mechanics	380	410	0.8	16.89	35,125	PS	N	S	T1 T9 T11 T2 T8
Production Occupations	8,015	8,520	0.6	16.43	34,168				
Welders, Cutters, Solderers, & Brazers	910	975	0.7	17.13	35,624	HS	N	M	B3 B2 B6 SY1 T4 T5

stem occupations by group

region 3-4

Occupational Title	Employment ^[1]			\$ ^[2]		Career Preparation ^[3]			Top Skills ^[4]										
	2014 Estimated	2024 Projected	Annual Growth Rate (%)	2016 Mean Wage	2016 Mean Salary	Educ	Work Exp	Job Training	(L-R in order of significance)										
Total, All Occupations	95,590	101,425	0.6	17.79	37,010														
Management Occupations	11,400	11,585	0.2	36.91	76,766														
Financial Managers	380	420	1.1	40.20	83,625	BA	> 5	N											
Farmers, Ranchers, & Other Agricultural Managers	6,300	6,230	-0.1	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4					
Managers, All Other	1,005	970	-0.3	29.08	60,485	BA	< 5	N											
Business & Financial Operations Occupations	3,075	3,290	0.7	25.51	53,056														
Business Operations Specialists, All Other	805	805	0.0	19.66	40,896	BA	N	N											
Accountants & Auditors	485	550	1.4	24.57	51,102	BA	N	N	B2	B5	B7	B10	B9						
Healthcare Practitioners & Technical Occupations	3,885	4,375	1.3	31.10	64,698														
Registered Nurses	1,450	1,655	1.4	24.26	50,469	BA	N	N	SO6	B2	SO1	B9	B3	B7	SO5				
Licensed Practical & Licensed Vocational Nurses	295	300	0.2	18.00	37,432	PS	N	N	B2	B9	B3	B7	SO1	SO5					
Food Preparation & Serving Related Occupations	6,305	6,675	0.6	9.32	19,380														
First-Line Supervisors of Food Preparation & Serving Wkrs	380	415	0.9	13.84	28,783	HS	< 5	N	B9	B2	SO1	SO5	R3	B6					
Cooks, Institution & Cafeteria	565	600	0.6	10.61	22,065	NE	N	S	R4	B2	B3	B6	B7	SO5					
Construction & Extraction Occupations	4,260	4,765	1.2	18.93	39,371														
Electricians	355	430	2.0	21.04	43,770	HS	N	A	T11	T9	B2	B3	T5	T8					
Installation, Maintenance, & Repair Occupations	4,280	4,820	1.3	19.83	41,255														
Automotive Service Technicians & Mechanics	570	625	1.0	18.41	38,285	PS	N	S	T1	T9	T11	T2	T8						
Farm Equipment Mechanics & Service Technicians	400	435	0.9	19.52	40,610	HS	N	L	T9	T1	T11	T8	B3	T4	T5				
Production Occupations	11,485	11,795	0.3	15.99	33,249														
Computer-Controlled Machine Tool Operators, Metal & Plastic	175	220	2.6	15.23	31,671	HS	N	M	B6	T5	B3	T8	T4						
Welders, Cutters, Solderers, & Brazers	650	695	0.7	16.87	35,082	HS	N	M	B3	B2	B6	SY1	T4	T5					

region 5

Total, All Occupations	50,555	53,240	0.5	19.03	39,589														
Management Occupations	6,275	6,340	0.1	34.87	72,527														
Farmers, Ranchers, & Other Agricultural Managers	3,695	3,660	-0.1	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4					
Managers, All Other	565	545	-0.4	30.13	62,677	BA	< 5	N											
Healthcare Practitioners & Technical Occupations	2,625	2,975	1.3	30.10	62,604														
Registered Nurses	1,055	1,220	1.6	24.39	50,724	BA	N	N	SO6	B2	SO1	B9	B3	B7	SO5				
Licensed Practical & Licensed Vocational Nurses	260	285	1.0	17.84	37,105	PS	N	N	B2	B9	B3	B7	SO1	SO5					
Food Preparation & Serving Related Occupations	3,055	3,255	0.7	9.76	20,297														
First-Line Supervisors of Food Preparation & Serving Wkrs	235	255	0.9	16.89	35,130	HS	< 5	N	B9	B2	SO1	SO5	R3	B6					
Cooks, Institution & Cafeteria	410	455	1.1	11.26	23,428	NE	N	S	R4	B2	B3	B6	B7	SO5					
Construction & Extraction Occupations	2,530	2,825	1.2	19.37	40,295														
Electricians	300	360	2.0	19.09	39,708	HS	N	A	T11	T9	B2	B3	T5	T8					
Installation, Maintenance, & Repair Occupations	2,430	2,590	0.7	21.11	43,919														
Automotive Service Technicians & Mechanics	295	310	0.5	20.56	42,772	PS	N	S	T1	T9	T11	T2	T8						
Industrial Machinery Mechanics	255	310	2.0	21.02	43,720	HS	N	L	T9	T1	T5	T11	T8						



Legend/Methodology/Selection Criteria:

The acronym STEM, as used in this publication, is a combined occupational group made up of occupations (residual or undefined occupations were not included) from existing and/or established occupational groups adopted from the Office of Management and Budget's (OMB) Standard Occupational Classification (SOC) Manual. The Occupational Information Network (O*NET) and Iowa Workforce Development determined those occupations having a preponderance of tools and skills from Science, Technology, Engineering, and/or Mathematics.

[1] Employment includes: **Estimated** = Estimation of labor force by occupation (rounded); **Projected** = Projection of future labor force by occupation (rounded); and **Annual Growth Rate (%)** = Ten year growth rate (not shown) divided by ten. **[2] Mean (Average) Wage & Salary (\$)** = dividing the estimated total pay for an occupation by its weighted employment. Pay provided in wage (hourly) and salary (annual) formats; Missing pay data may be derived from calculation or proration of reported wage/salary data if available (i.e., legislator pay based on 4-months service, education and coaching pay based on 12-months service); Occupations with limited or no compensation data (which inhibits either wage or salary calculated derivations) are subsequently omitted from any methodological calculations. **[3] Career Preparation** determined by the U.S. Department of Labor's Bureau of Labor Statistics (BLS). Alternative employment pathways may exist as well as differing educational, training, or licensing requirements per state. Iowa requirements are used in this publication when available. Career Preparation areas/levels include: **Education** (typical education level needed to enter an occupation): DP = Doctoral or Professional degree; MA = Master's degree; BA = Bachelor's degree; AS = Associate's degree; PS = Postsecondary non-degree award; SC = Some college, no degree; HS = High school diploma or equivalent; < 5 = Less than high school; **Work Experience** (typical work experience level commonly considered necessary for entry into an occupation, or substitutable for formal types of training): > 5 = 5 years or more; < 5 = Less than 5 years; N = None; and **Job Training** (typical on-the-job training level needed to attain occupational competency): I = Internship/residency; A = Apprenticeship; L = Long-term on-the-job training; M = Moderate-term on-the-job training; S = Short-term on-the-job training; None = N. **[4] Top Skills** refers to the top five (or more if tied) most important skills for a particular occupation as identified by sampled workers' questionnaire responses conducted by occupational analysts of the U.S. Department of Labor's Occupational Information Network (O*NET). These include: **Basic Skills**: B1 = Active Learning; B2 = Active Listening; B3 = Critical Thinking; B4 = Learning Strategies; B5 = Mathematics; B6 = Monitoring; B7 = Reading Comprehension; B8 = Science; B9 = Speaking; B10 = Writing; **Complex Problem Solving Skills**: C1 = Complex Problem Solving; **Resource Management Skills**: R1 = Management of Financial Resources; R2 = Management of Material Resources; R3 = Management of Personnel Resources; R4 = Time Management; **Social Skills**: SO1 = Coordination; SO2 = Instructing; SO3 = Negotiation; SO4 = Persuasion; SO5 = Service Orientation; SO6 = Social Perceptiveness; **Systems Skills**: SY1 = Judgment and Decision Making; SY2 = Systems Analysis; SY3 = Systems Evaluation; and **Technical Skills**: T1 = Equipment Maintenance; T2 = Equipment Selection; T3 = Installation; T4 = Operation and Control; T5 = Operation Monitoring; T6 = Operations Analysis; T7 = Programming; T8 = Quality Control Analysis; T9 = Repairing; T10 = Technology Design; T11 = Troubleshooting. N.A. = Not Available.

Sources:

Education/Work Experience/Job Training: Bureau of Labor Statistics, U.S. Department of Labor; **Employment:** 2014-2024 Occupational Projections estimates based on 2014 annual industry employment data and 2015 2nd quarter occupational staffing pattern data, Labor Market and Workforce Information Division, Iowa Workforce Development; **Skills:** Occupational Information Network (O*NET), Employment and Training Administration, U.S. Department of Labor; **Wages:** 2016 Iowa Wage Survey estimates (based on 2015 2nd quarter occupational wage data updated to 2016 2nd quarter using Employment Cost Index), Labor Market and Workforce Information Division, Iowa Workforce Development. This workforce product was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The product was created by the recipient and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership. This product is copyrighted by the institution that created it. Internal use by an organization and/or personal use by an individual for non-commercial purposes is permissible. All other uses require the prior authorization of the copyright owner. This publication was produced by the Labor Market and Workforce Information Division of Iowa Workforce Development. Revisions and/or corrections made when necessary. Inquiries may be directed to Brent Paulson at 515.281.3439 or Brent.Paulson@iwd.iowa.gov. Visit www.iowalmi.gov to obtain the latest workforce data and trends including this document. Published 11/2016.