



regions' 6, 7, 8, & 9 stem jobs

2014-2024

november 2016



stem occupations by group

region 6

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	
Management Occupations	5,510	5,625	0.2	39.52	82,198				
Farmers, Ranchers, and Other Agricultural Managers	3,100	3,095	0.0	N.A.	N.A.	HS	> 5	N	B3 B9 B2 SY1 B7 R4
Managers, All Other	470	450	-0.4	34.47	71,694	BA	< 5	N	
Business and Financial Operations Occupations	1,905	2,010	0.6	26.32	54,736				
Business Operations Specialists, All Other	575	595	0.3	27.53	57,257	BA	N	N	
Healthcare Practitioners and Technical Occupations	2,045	2,345	1.5	31.82	66,183				
Registered Nurses	750	880	1.7	25.56	53,166	BA	N	N	SO6 B2 SO1 B9 B3 B7 SO5
Licensed Practical and Licensed Vocational Nurses	365	410	1.2	20.12	41,847	PS	N	N	B2 B9 B3 B7 SO1 SO5
Food Preparation and Serving Related Occupations	3,305	3,560	0.8	9.72	20,209				
First-Line Supervisors of Food Preparation and Serving Workers	240	265	1.0	13.18	27,423	HS	< 5	N	B9 B2 SO1 SO5 R3 B6
Cooks, Institution and Cafeteria	255	280	1.0	11.17	23,232	NE	N	S	R4 B2 B3 B6 B7 SO5

region 7

Total, All Occupations	117,670	126,200	0.7	19.12	39,763				
Management Occupations	10,600	11,015	0.4	40.04	83,294				
Financial Managers	330	355	0.8	49.41	102,775	BA	> 5	N	C1 B3 B2 B7 SY1 B9 B10
Farmers, Ranchers, and Other Agricultural Managers	5,590	5,685	0.2	N.A.	N.A.	HS	> 5	N	B3 B9 B2 SY1 B7 R4
Medical and Health Services Managers	315	360	1.4	39.04	81,194	BA	< 5	N	B7 B9 B2 B3 SY1
Managers, All Other	595	595	-0.1	40.32	83,873	BA	< 5	N	
Business and Financial Operations Occupations	4,055	4,475	1.0	27.24	56,668				
Management Analysts	210	255	2.1	31.34	65,181	BA	< 5	N	B2 B7 B9 B3 C1
Business Operations Specialists, All Other	825	855	0.4	28.28	58,828	BA	N	N	
Accountants and Auditors	585	675	1.5	28.93	60,164	BA	N	N	B2 B5 B7 B10 B9
Architecture and Engineering Occupations	1,450	1,470	0.1	33.08	68,802				
Industrial Engineers	300	300	0.0	35.75	74,368	BA	N	N	B7 B2 C1 B3 B10
Mechanical Engineers	460	460	-0.1	34.78	72,349	BA	N	N	C1 B3 B2 SY1 B5 B7
Healthcare Practitioners and Technical Occupations	5,705	6,535	1.5	30.96	64,393				
Registered Nurses	2,100	2,465	1.7	25.88	53,823	BA	N	N	SO6 B2 SO1 B9 B3 B7 SO5
Licensed Practical and Licensed Vocational Nurses	595	645	0.9	18.40	38,262	PS	N	N	B2 B9 B3 B7 SO1 SO5
Healthcare Support Occupations	3,460	4,130	1.9	13.43	27,936				
Medical Assistants	280	325	1.6	14.07	29,260	PS	N	N	B2 B9 SO6 B6 B7
Food Preparation and Serving Related Occupations	8,985	9,645	0.7	9.55	19,871				
First-Line Supervisors of Food Preparation and Serving Workers	550	605	1.0	14.33	29,814	HS	< 5	N	B9 B2 SO1 SO5 R3 B6
Cooks, Institution and Cafeteria	555	565	0.1	11.37	23,658	NE	N	S	R4 B2 B3 B6 B7 SO5
Construction and Extraction Occupations	4,675	5,215	1.2	19.83	41,239				
Electricians	435	500	1.6	21.23	44,155	HS	N	A	T11 T9 B2 B3 T5 T8
Plumbers, Pipefitters, and Steamfitters	430	475	1.0	19.39	40,322	HS	N	A	SO1 R4 B3 T5 B2 SY1 B6 B9
Installation, Maintenance, and Repair Occupations	4,790	5,250	1.0	20.18	41,974				
Automotive Service Technicians and Mechanics	665	725	0.9	17.36	36,104	PS	N	S	T1 T9 T11 T2 T8
Production Occupations	14,525	14,605	0.1	17.04	35,435				
Computer-Controlled Machine Tool Operators, Metal and Plastic	315	385	2.2	17.91	37,251	HS	N	M	B6 T5 B3 T8 T4
Welders, Cutters, Solderers, and Brazers	875	905	0.3	18.47	38,411	HS	N	M	B3 B2 B6 SY1 T4 T5

region 8

Total, All Occupations	39,625	42,175	0.6	17.83	37,082				
Management Occupations	4,990	5,035	0.1	37.75	78,529				
Farmers, Ranchers, & Other Agricultural Managers	3,075	3,035	-0.1	N.A.	N.A.	HS	> 5	N	B3 B9 B2 SY1 B7 R4
Managers, All Other	520	500	-0.4	28.73	59,761	BA	< 5	N	
Business & Financial Operations Occupations	1,575	1,700	0.8	28.52	59,323				
Healthcare Practitioners & Technical Occupations	1,755	1,990	1.3	26.35	54,814				
Registered Nurses	720	820	1.4	25.01	52,019	BA	N	N	SO6 B2 SO1 B9 B3 B7 SO5

stem occupations by group

region 9

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	160,615	173,920	0.8	19.27	40,072				
Management Occupations	14,700	15,680	0.7	43.02	89,483				
Financial Managers	470	530	1.3	48.83	101,572	BA	> 5	N	C1 B3 B2 B7 SY1 B9 B10
Industrial Production Managers	315	325	0.3	40.79	84,838	BA	> 5	N	SO1 B2 B6 R3 R4
Farmers, Ranchers, & Other Agricultural Managers	6,980	7,175	0.3	N.A.	N.A.	HS	> 5	N	B3 B9 B2 SY1 B7 R4
Medical & Health Services Managers	400	490	2.3	41.82	86,992	BA	< 5	N	B7 B9 B2 B3 SY1
Managers, All Other	1,185	1,310	1.0	36.80	76,545	BA	< 5	N	
Business & Financial Operations Occupations	5,175	5,700	1.0	27.80	57,832				
Cost Estimators	230	260	1.3	31.07	64,616	BA	N	N	B5 B3 B9 B2 SY1
Accountants & Auditors	825	945	1.4	29.93	62,246	BA	N	N	B2 B5 B7 B10 B9
Computer & Mathematical Occupations	2,235	2,575	1.5	30.67	63,785				
Computer Systems Analysts	280	350	2.7	38.15	79,355	BA	N	N	B3 B2 B7 B9 SY2
Computer User Support Specialists	390	460	1.7	18.65	38,797	SC	N	N	B2 B9 B7 B3 B10
Architecture & Engineering Occupations	2,135	2,285	0.7	34.87	72,539				
Civil Engineers	180	205	1.4	35.97	74,812	BA	N	N	C1 B3 SY1 B5 T6 B7
Industrial Engineers	350	375	0.7	36.14	75,170	BA	N	N	B7 B2 C1 B3 B10
Mechanical Engineers	380	415	0.9	42.97	89,384	BA	N	N	C1 B3 B2 SY1 B5 B7
Healthcare Practitioners & Technical Occupations	7,205	8,425	1.7	35.15	73,109				
Physical Therapists	220	280	2.7	37.50	78,008	DP	N	N	B2 B9 B7 B3 SO6 R4
Speech-Language Pathologists	200	260	2.8	37.09	77,151	MA	N	N	B2 B3 B4 B7 SO5 SO6 B9
Registered Nurses	2,555	3,000	1.8	26.26	54,618	BA	N	N	SO6 B2 SO1 B9 B3 B7 SO5
Medical & Clinical Laboratory Technicians	190	230	2.4	17.27	35,919	AS	N	N	B2 B3 B7 B8 T5 B9
Dental Hygienists	315	355	1.3	33.57	69,817	AS	N	N	B2 B9 B3 B7 SO6
Pharmacy Technicians	410	460	1.2	12.85	26,720	HS	N	M	B2 B7 B9 B3 SO5 SO6
Licensed Practical & Licensed Vocational Nurses	405	470	1.5	18.76	39,018	PS	N	N	B2 B9 B3 B7 SO1 SO5
Healthcare Support Occupations	4,005	4,790	2.0	13.34	27,747				
Dental Assistants	255	290	1.4	16.24	33,789	PS	N	N	B9 B2 B7 SO5 B3
Medical Assistants	515	615	1.9	13.62	28,321	PS	N	N	B2 B9 SO6 B6 B7
Food Preparation & Serving Related Occupations	13,645	14,830	0.9	9.55	19,856				
First-Line Supervisors of Food Preparation & Serving Wkrs	755	840	1.1	13.21	27,475	HS	< 5	N	B9 B2 SO1 SO5 R3 B6
Cooks, Institution & Cafeteria	570	615	0.8	11.20	23,287	NE	N	S	R4 B2 B3 B6 B7 SO5
Construction & Extraction Occupations	7,745	8,805	1.4	21.09	43,871				
Electricians	810	950	1.7	28.06	58,372	HS	N	A	T11 T9 B2 B3 T5 T8
Plumbers, Pipefitters, & Steamfitters	780	885	1.4	23.70	49,292	HS	N	A	SO1 R4 B3 T5 B2 SY1 B6 B9
Installation, Maintenance, & Repair Occupations	6,875	7,505	0.9	20.82	43,309				
Automotive Service Technicians & Mechanics	1,015	1,105	0.9	17.87	37,177	PS	N	S	T1 T9 T11 T2 T8
Installation, Maintenance, & Repair Wkrs, All Other	340	370	0.9	21.86	45,474	HS	N	M	
Production Occupations	17,180	17,480	0.2	16.01	33,292				
Food Batchmakers	550	535	-0.3	14.11	29,344	HS	N	M	T4 B6 B7 T5 B2 B9
Computer-Controlled Machine Tool Operators, Metal & Plastic	365	455	2.6	17.14	35,645	HS	N	M	B6 T5 B3 T8 T4
Welders, Cutters, Solderers, & Brazers	725	800	1.0	18.03	37,507	HS	N	M	B3 B2 B6 SY1 T4 T5
Chemical Plant & System Operators	225	240	0.7	N.A.	N.A.	HS	N	L	T5 T4 B6 T8 B3



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.