

stem occupations by group

region 14

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	33,270	35,020	0.5	17.10	35,575													
Management Occupations	4,525	4,530	0.0	33.06	68,758													
Farmers, Ranchers, & Other Agricultural Managers	2,755	2,700	-0.2	N.A.	N.A.	HS	> 5	N		B3	B9	B2	SY1	B7	R4			
Healthcare Practitioners & Technical Occupations	1,405	1,570	1.1	27.07	56,309													
Registered Nurses	475	535	1.3	25.16	52,340	BA	N	N		SO6	B2	SO1	B9	B3	B7	SO5		

region 15

Total, All Occupations	66,220	70,405	0.6	17.72	36,867													
Management Occupations	8,020	8,145	0.2	36.21	75,314													
Farmers, Ranchers, & Other Agricultural Managers	4,855	4,820	-0.1	N.A.	N.A.	HS	> 5	N		B3	B9	B2	SY1	B7	R4			
Business & Financial Operations Occupations	2,315	2,505	0.8	25.85	53,761													
Accountants & Auditors	340	385	1.5	31.67	65,864	BA	N	N		B2	B5	B7	B10	B9				
Healthcare Practitioners & Technical Occupations	2,795	3,140	1.2	29.62	61,606													
Registered Nurses	1,100	1,245	1.3	26.27	54,637	BA	N	N		SO6	B2	SO1	B9	B3	B7	SO5		
Food Preparation & Serving Related Occupations	4,410	4,710	0.7	9.34	19,434													
First-Line Supervisors of Food Preparation & Serving Wkrs	260	290	1.0	10.39	21,612	HS	< 5	N		B9	B2	SO1	SO5	R3	B6			
Cooks, Institution & Cafeteria	525	565	0.8	10.01	20,829	NE	N	S		R4	B2	B3	B6	B7	SO5			
Construction & Extraction Occupations	2,585	2,860	1.1	19.07	39,667													
Plumbers, Pipefitters, & Steamfitters	300	340	1.3	N.A.	N.A.	HS	N	A		SO1	R4	B3	T5	B2	SY1	B6	B9	
Installation, Maintenance, & Repair Occupations	2,900	3,205	1.1	19.23	39,991													
Automotive Service Technicians & Mechanics	305	330	0.7	13.70	28,505	PS	N	S		T1	T9	T11	T2	T8				
Production Occupations	8,035	8,255	0.3	15.02	31,240													
Food Batchmakers	350	365	0.4	N.A.	N.A.	HS	N	M		T4	B6	B7	T5	B2	B9			
Welders, Cutters, Solderers, & Brazers	455	485	0.5	14.60	30,361	HS	N	M		B3	B2	B6	SY1	T4	T5			

region 16

Total, All Occupations	61,940	65,985	0.7	18.32	38,105													
Management Occupations	5,500	5,660	0.3	38.73	80,548													
Farmers, Ranchers, & Other Agricultural Managers	3,210	3,255	0.1	50.91	105,894	HS	> 5	N		B3	B9	B2	SY1	B7	R4			
Business & Financial Operations Occupations	1,940	2,085	0.7	25.65	53,357													
Accountants & Auditors	265	285	0.9	27.12	56,412	BA	N	N		B2	B5	B7	B10	B9				
Healthcare Practitioners & Technical Occupations	2,885	3,285	1.4	34.15	71,037													
Licensed Practical & Licensed Vocational Nurses	325	355	0.9	17.67	36,762	PS	N	N		B2	B9	B3	B7	SO1	SO5			
Healthcare Support Occupations	2,140	2,500	1.7	13.09	27,218													
Medical Assistants	250	290	1.6	13.91	28,933	PS	N	N		B2	B9	SO6	B6	B7				
Food Preparation & Serving Related Occupations	3,780	4,020	0.6	9.32	19,380													
First-Line Supervisors of Food Preparation & Serving Wkrs	220	240	0.9	12.62	26,258	HS	< 5	N		B9	B2	SO1	SO5	R3	B6			
Installation, Maintenance, & Repair Occupations	2,990	3,280	1.0	20.93	43,540													
Automotive Service Technicians & Mechanics	305	335	0.8	17.32	36,033	PS	N	S		T1	T9	T11	T2	T8				
Production Occupations	8,760	8,945	0.2	16.32	33,950													
Welders, Cutters, Solderers, & Brazers	370	405	0.8	15.48	32,201	HS	N	M		B3	B2	B6	SY1	T4	T5			



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; < HS = 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.