

STEM OCCUPATIONS BY GROUP

REGION 14 Occupational Title	Employment ^[1]			\$ ^[2]		Career Preparation ^[3]			Top Skills ^[4] (L-R in order of significance)						
	2012 Est	2022 Proj	Annual Growth Rate (%)	2014 Mean Wage	2014 Mean Salary	Educ	Work Exp	Job Training							
Total, All Occupations	33,595	36,250	0.8	16.44	34,194										
Management Occupations	4,760	4,665	-0.2	33.00	68,638										
Farmers, Ranchers, & Other Agricultural Managers	2,885	2,690	-0.7	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4	
Healthcare Practitioners & Technical Occupations	1,295	1,520	1.7	25.89	53,860										
Licensed Practical & Licensed Vocational Nurses	270	335	2.4	18.86	39,223	PS	N	N	B2	B9	B3	B7	SO1	SO5	
Registered Nurses	455	520	1.3	24.05	50,022	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5

REGION 15

Total, All Occupations	65,575	70,875	0.8	16.98	35,312											
Management Occupations	7,965	7,685	-0.3	36.24	75,387											
Farmers, Ranchers, & Other Agricultural Managers	4,945	4,525	-0.8	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4		
Business & Financial Operations Occupations	2,365	2,575	0.9	25.12	52,241											
Accountants & Auditors	350	375	0.7	24.28	50,507	BA	N	N	B2	B5	B7	B10	B9			
Healthcare Practitioners & Technical Occupations	2,585	3,000	1.6	28.00	58,239											
Registered Nurses	1,145	1,320	1.5	23.79	49,485	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5	
Food Preparation & Serving Related Occupations	4,085	4,415	0.8	9.20	19,133											
Cooks, Institution & Cafeteria	435	480	1.1	10.35	21,534	< HS	N	S	R4	B2	B3	B6	B7	SO5		
First-Line Supervisors of Food Preparation & Serving Workers	290	320	1.0	13.55	28,187	HS	< 5	N	B9	B2	SO1	SO5	R3	B6		
Construction & Extraction Occupations	2,765	3,315	2.0	18.80	39,098											
Plumbers, Pipefitters, & Steamfitters	260	315	2.1	21.98	45,713	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9
Installation, Maintenance, & Repair Occupations	2,955	3,220	0.9	18.56	38,602											
Automotive Service Technicians & Mechanics	280	295	0.5	16.24	33,774	HS	N	L	T1	T9	T11	T2	T8			
Production Occupations	7,505	7,950	0.6	14.90	30,993											
Welders, Cutters, Solderers, & Brazers	435	460	0.6	16.41	34,135	HS	N	M	B3	B2	B6	SY1	T4	T5		
Food Batchmakers	335	340	0.3	N.A.	N.A.	HS	N	M	T4	B6	B7	T5	B2	B9		

REGION 16

Total, All Occupations	60,415	65,815	0.9	17.60	36,599											
Management Occupations	5,485	5,320	-0.3	36.27	75,442											
Farmers, Ranchers, & Other Agricultural Managers	3,200	2,855	-1.1	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4		
Business & Financial Operations Occupations	1,900	2,060	0.8	25.35	52,732											
Accountants & Auditors	290	320	1.0	28.00	58,239	BA	N	N	B2	B5	B7	B10	B9			
Healthcare Practitioners & Technical Occupations	3,000	3,470	1.6	30.80	64,055											
Licensed Practical & Licensed Vocational Nurses	395	480	2.0	17.36	36,105	PS	N	N	B2	B9	B3	B7	SO1	SO5		
Registered Nurses	1,085	1,245	1.5	26.21	54,519	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5	
Healthcare Support Occupations	1,940	2,325	2.0	12.52	26,040											
Medical Assistants	230	275	2.0	13.99	29,091	PS	N	N	B2	B9	SO6	B6	B7			
Food Preparation & Serving Related Occupations	3,730	4,130	1.1	8.87	18,458											
First-Line Supervisors of Food Preparation & Serving Workers	255	290	1.2	12.58	26,173	HS	< 5	N	B9	B2	SO1	SO5	R3	B6		
Cooks, Institution & Cafeteria	280	310	1.1	10.79	22,438	< HS	N	S	R4	B2	B3	B6	B7	SO5		
Construction & Extraction Occupations	2,805	3,455	2.3	20.26	42,139											
Plumbers, Pipefitters, & Steamfitters	275	340	2.4	N.A.	N.A.	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9
Electricians	205	245	1.7	23.94	49,804	HS	N	A	T11	T9	B2	B3	T5	T8		
Installation, Maintenance, & Repair Occupations	3,080	3,400	1.0	19.19	39,910											
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	145	180	2.4	N.A.	N.A.	PS	N	L	T3	T11	T9	T1	T5			
Automotive Service Technicians & Mechanics	525	585	1.1	15.58	32,402	HS	N	L	T1	T9	T11	T2	T8			
Production Occupations	9,340	9,840	0.5	15.64	32,535											
Weld/Solder/Braze Machine Setters, Operators, & Tenders	190	240	2.6	19.71	40,988	HS	N	M	T5	B2	B3	B6	T4	B9		
Welders, Cutters, Solderers, & Brazers	415	455	1.0	17.54	36,483	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**: 2012-2022 Occupational Projections estimates based on 2012 annual industry employment data and 2013 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**: 2014 Iowa Wage Survey estimates (based on 2013 2nd quarter occupational wage data updated from 2014 2nd quarter using Employment Cost Index), Labor Market and Workforce Information Division, Iowa Workforce Development.

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 <http://iwin.iowaworkforce.org> to obtain the latest workforce data and trends including this document under the **Publications** tab. Published 10/2014.