



regions' 10, 12, & 13 stem jobs

2014-2024

november 2016



stem occupations by group

region 10

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	284,420	312,855	1.0	22.01	45,776															
Management Occupations	25,860	27,440	0.6	44.70	92,981															
Computer & Information Systems Managers	770	850	1.1	58.35	121,368	BA	> 5	N	B7	B2	B3	C1	B6	B10						
Financial Managers	1,065	1,195	1.2	53.25	110,751	BA	> 5	N	C1	B3	B2	B7	SY1	B9	B10					
Industrial Production Managers	600	640	0.7	45.81	95,277	BA	> 5	N	B3	B6	B9	R3	R4							
Farmers, Ranchers, & Other Agricultural Managers	11,505	11,760	0.2	32.21	67,003	HS	> 5	N	B3	B9	B2	SY1	B7	R4						
Construction Managers	585	615	0.5	34.07	70,868	BA	N	M	B2	B3	B9	C1	SO1	R3	B7	R4				
Architectural & Engineering Managers	680	710	0.4	58.84	122,379	BA	> 5	N	B7	B3	B2	C1	SO1	SY1	B9	R4				
Medical & Health Services Managers	1,040	1,205	1.6	40.52	84,287	BA	< 5	N	B7	B9	B2	B3	SY1							
Managers, All Other	1,565	1,620	0.4	43.21	89,882	BA	< 5	N												
Business & Financial Operations Occupations	12,740	14,185	1.1	30.29	62,999															
Cost Estimators	360	400	1.1	27.66	57,543	BA	N	N	B5	B3	B9	B2	SY1							
Business Operations Specialists, All Other	3,355	3,635	0.8	29.84	62,059	BA	N	N												
Accountants & Auditors	1,895	2,195	1.6	31.45	65,409	BA	N	N	B2	B5	B7	B10	B9							
Financial Analysts	395	445	1.1	35.22	73,253	BA	N	N	B3	B7	B10	B2	C1							
Computer & Mathematical Occupations	8,930	10,200	1.4	35.92	74,721															
Computer Systems Analysts	725	895	2.3	37.00	76,961	BA	N	N	B3	B2	B7	B9	SY2							
Information Security Analysts	325	370	1.4	38.91	80,936	BA	< 5	N	B7	B3	C1	B9	B2	B10						
Computer Programmers	490	475	-0.2	31.84	66,237	BA	N	N	T7	B7	C1	B3	B2	T8						
Software Developers, Applications	2,115	2,595	2.2	38.76	80,614	BA	N	N	C1	T7	SY2	SY1	SY3							
Software Developers, Systems Software	1,260	1,340	0.7	N.A.	N.A.	BA	N	N	B3	B2	T7	B7	C1							
Database Administrators	250	280	1.4	37.18	77,332	BA	< 5	N	C1	B3	B6	B1	B2	B7						
Network & Computer Systems Administrators	860	925	0.8	36.12	75,122	BA	N	N	B3	B7	SY2	C1	SY1	B6	SY3					
Computer Network Architects	560	600	0.7	43.97	91,465	BA	> 5	N	B2	T6	SY2	B1	C1							
Computer User Support Specialists	715	815	1.4	21.12	43,932	SC	N	N	B2	B9	B7	B3	B10							
Computer Network Support Specialists	715	785	1.0	25.80	53,660	AS	N	N	B3	B2	SY1	B7	B1	C1	B6	B9				
Computer Occupations, All Other	490	560	1.4	33.57	69,830	BA	N	N												
Architecture & Engineering Occupations	4,805	5,180	0.8	34.47	71,702															
Civil Engineers	350	400	1.4	35.41	73,650	BA	N	N	B3	B7	B2	C1	B5	T6	B9	SY2				
Electrical Engineers	725	790	0.8	41.46	86,240	BA	N	N	B2	C1	B3	B7	B10							
Industrial Engineers	450	490	0.9	38.07	79,185	BA	N	N	B7	B2	C1	B3	B10							
Mechanical Engineers	465	495	0.8	39.32	81,777	BA	N	N	B2	B3	B5	B7	B10							
Engineers, All Other	785	865	1.0	33.24	69,138	BA	N	N												
Electrical & Electronics Engineering Technicians	415	435	0.4	29.51	61,382	AS	N	N	B7	C1	B3	B2	B6	B9	T11					
Engineering Technicians, Ex Drafters, All Other	310	330	0.6	26.15	54,386	AS	N	N												
Life, Physical, & Social Science Occupations	2,685	2,965	1.0	27.14	56,443															
Medical Scientists, Ex Epidemiologists	810	885	1.0	N.A.	N.A.	DP	N	N	B8	B3	B7	C1	B9							
Life, Physical, & Social Science Technicians, All Other	160	180	0.9	24.77	51,517	AS	N	N												
Education, Training, & Library Occupations	22,570	24,945	1.1	28.90	60,112															
Health Specialties Teachers, Postsecondary	1,810	2,185	2.1	N.A.	N.A.	DP	< 5	N	B7	B9	SO2	B3	B2	C1	B4	B10				
Arts, Design, Entertainment, Sports, & Media Occupations	4,270	4,585	0.7	21.71	45,159															
Graphic Designers	440	470	0.7	28.06	58,368	BA	N	N	B2	T6	B9	B10	B3	B7						
Healthcare Practitioners & Technical Occupations	15,575	17,935	1.5	33.47	69,625															
Pharmacists	740	800	0.8	50.53	105,098	DP	N	N	B7	B2	B3	SO2	B6	SO5	B9	B10				
Family & General Practitioners	350	385	1.0	112.46	233,924	DP	N	I	B3	B2	SY1	B7	B10							
Physicians & Surgeons, All Other	505	545	0.8	99.88	207,747	DP	N	I												
Occupational Therapists	195	255	3.1	34.41	71,571	MA	N	N	B6	SO5	B2	B3	SY1	B7	SO6	B9				
Physical Therapists	280	360	2.9	35.77	74,409	DP	N	N	B2	B9	B7	B3	SO6	R4						
Respiratory Therapists	260	295	1.3	25.12	52,253	AS	N	N	B2	B3	B6	B9	B1	B7	SO5	SO6				
Speech-Language Pathologists	255	320	2.5	31.71	65,955	MA	N	N	B2	B3	B4	B7	SO5	SO6	B9					
Registered Nurses	5,980	6,915	1.6	28.15	58,558	BA	N	N	SO6	B2	SO1	B9	B3	B7	SO5	SO6				
Nurse Practitioners	270	345	2.8	45.17	93,953	MA	N	N	B2	B7	B8	B9	B3	B6	SO6					
Health Diagnosing & Treating Practitioners, All Other	395	445	1.1	34.79	72,353	MA	N	N												
Medical & Clinical Laboratory Technologists	280	320	1.4	27.19	56,545	BA	N	N	B2	B3	B7	B8	T5							
Medical & Clinical Laboratory Technicians	315	370	1.6	21.36	44,424	AS	N	N	B2	B7	B3	B9	B8							
Dental Hygienists	380	435	1.4	32.17	66,922	AS	N	N	B9	B2	B3	SY1	B6	SO5	SO6					
Radiologic Technologists	415	445	0.7	23.06	47,971	AS	N	N	B2	B9	B7	SO6	B10							
Emergency Medical Technicians & Paramedics	365	460	2.6	14.87	30,937	PS	N	N	B3	SO5	B2	SO6	B9							
Pharmacy Technicians	695	805	1.6	15.35	31,925	HS	N	M	B2	B7	B9	B3	SO5	SO6						
Licensed Practical & Licensed Vocational Nurses	765	855	1.2	19.84	41,263	PS	N	N	B2	B9	B3	B7	SO1	SO5						
Medical Records & Health Information Technicians	430	475	1.2	21.67	45,066	PS	N	N	B7	B2	B3	B9	B10							
Opticians, Dispensing	170	215	2.6	13.65	28,384	HS	N	L	B9	B2	B7	B3	SO5							
Healthcare Support Occupations	7,175	8,640	2.0	14.61	30,394															
Physical Therapist Assistants	125	175	4.0	20.29	42,213	AS	N	N	B2	B6	SO6	B9	SO5							
Dental Assistants	505	585	1.6	19.94	41,482	PS	N	N	B9	B2	B7	SO5	B3							
Medical Assistants	745	890	2.0	16.17	33,628	PS	N	N	B2	B9	SO6	B6	B7							
Food Preparation & Serving Related Occupations	21,530	23,750	1.0	9.78	20,334															
First-Line Supervisors of Food Preparation & Serving Wkrs	1,265	1,435	1.3	13.43	27,934	HS	< 5	N	B9	B2	SO1	SO5	R3	B6						
Cooks, Institution & Cafeteria	1,215	1,315	0.8	12.37	25,722	NE	N	S	R4	B2	B3	B6	B7	SO5						
Construction & Extraction Occupations	11,800	13,465	1.4	21.71	45,164															
Electricians	1,325	1,615	2.2	28.06	58,362	HS	N	A	T11	T9	B2	B3	T5	T8						
Plumbers, Pipefitters, & Steamfitters	1,150	1,320	1.5	23.95	49,821	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9				
Production Occupations	20,670	21,375	0.3	18.87	39,255															
Electrical & Electronic Equipment Assemblers	725	755	0.4	N.A.	N.A.	HS	N	M	B7	SY1	B6	T5	B2	SO1	B3					
Food Batchmakers	345	355	0.3	23.60	49,091	HS	N	M	B6	T4	B3	T5	B7							
Computer-Controlled Machine Tool Operators, Metal & Plastic	245	295	2.2	19.86	41,310	HS	N	M	T5	B6	B7	T8	T4							
Welders, Cutters, Solderers, & Brazers	805	850	0.6	18.85	39,205	HS	N	M	B3	T4	B6	B7	B2	SY1	T5	B9				
Power Plant Operators	320	295	-0.8	30.80	64,059	HS	N	L	T5	B3	T4	B9	B2	T8						
Water & Wastewater Treatment Plant & System Operators	255	275	0.8	24.17	50,271	HS	N	L	T4	T5	B6	T8	B2	T1	B7	T11				

stem occupations by group

region 12

Occupational Title	Employment ^[1]			\$ ^[2]		Career Preparation ^[3]			Top Skills ^[4]										
	2014 Estimated	2024 Projected	Annual Growth Rate (%)	Mean Wage	Mean Salary	Educ	Work Exp	Job Training	(L-R in order of significance)										
Total, All Occupations	88,495	95,150	0.8	19.03	39,583														
Management Occupations	8,815	9,235	0.5	41.17	85,641														
Financial Managers	275	305	1.1	48.93	101,779	BA	> 5	N											
Farmers, Ranchers, & Other Agricultural Managers	4,685	4,750	0.1	N.A.	N.A.	HS	> 5	N											
Managers, All Other	635	655	0.3	39.92	83,034	BA	< 5	N											
Business & Financial Operations Occupations	2,855	3,105	0.9	25.44	52,917														
Business Operations Specialists, All Other	600	615	0.3	23.54	48,971	BA	N	N											
Accountants & Auditors	510	580	1.4	28.12	58,485	BA	N	N											
Healthcare Practitioners & Technical Occupations	4,755	5,455	1.5	31.27	65,035														
Registered Nurses	1,850	2,145	1.6	24.63	51,220	BA	N	N											
Licensed Practical & Licensed Vocational Nurses	320	345	0.8	18.63	38,761	P	N	N											
Food Preparation & Serving Related Occupations	7,145	7,605	0.6	9.70	20,167														
First-Line Supervisors of Food Preparation & Serving Wkrs	485	520	0.8	12.79	26,605	HS	< 5	N											
Cooks, Institution & Cafeteria	430	475	1.0	11.29	23,481	NE	N	S											
Construction & Extraction Occupations	4,650	5,245	1.3	20.00	41,610														
Electricians	300	350	1.7	23.36	48,579	HS	N	A											
Plumbers, Pipefitters, & Steamfitters	470	535	1.4	22.26	46,292	HS	N	A											
Installation, Maintenance, & Repair Occupations	4,390	4,775	0.9	20.47	42,577														
Automotive Service Technicians & Mechanics	555	585	0.5	18.46	38,392	P	N	S											
Production Occupations	8,060	8,470	0.5	16.74	34,815														
Welders, Cutters, Solderers, & Brazers	545	595	0.9	19.39	40,328	HS	N	M											

region 13

Total, All Occupations	83,130	89,745	0.8	17.52	36,445														
Management Occupations	8,655	8,915	0.3	35.37	73,570														
Farmers, Ranchers, and Other Agricultural Managers	5,130	5,165	0.1	N.A.	N.A.	HS	> 5	N											
Managers, All Other	610	590	-0.3	32.19	66,956	BA	< 5	N											
Business and Financial Operations Occupations	2,275	2,445	0.7	27.14	56,453														
Accountants and Auditors	355	410	1.4	31.56	65,638	BA	N	N											
Healthcare Practitioners and Technical Occupations	4,370	4,980	1.4	29.28	60,899														
Registered Nurses	1,480	1,715	1.6	27.13	56,421	BA	N	N											
Licensed Practical and Licensed Vocational Nurses	535	575	0.7	19.08	39,682	PS	N	N											
Installation, Maintenance, and Repair Occupations	3,695	4,095	1.1	19.53	40,614														
Automotive Service Technicians and Mechanics	505	540	0.7	21.42	44,559	PS	N	S											
Farm Equipment Mechanics and Service Technicians	260	280	0.8	17.40	36,188	HS	N	L											
Production Occupations	6,670	7,095	0.6	15.36	31,949														
Welders, Cutters, Solderers, and Brazers	415	445	0.7	16.23	33,753	HS	N	M											



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); 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.