



STEM Occupations and Salary Information

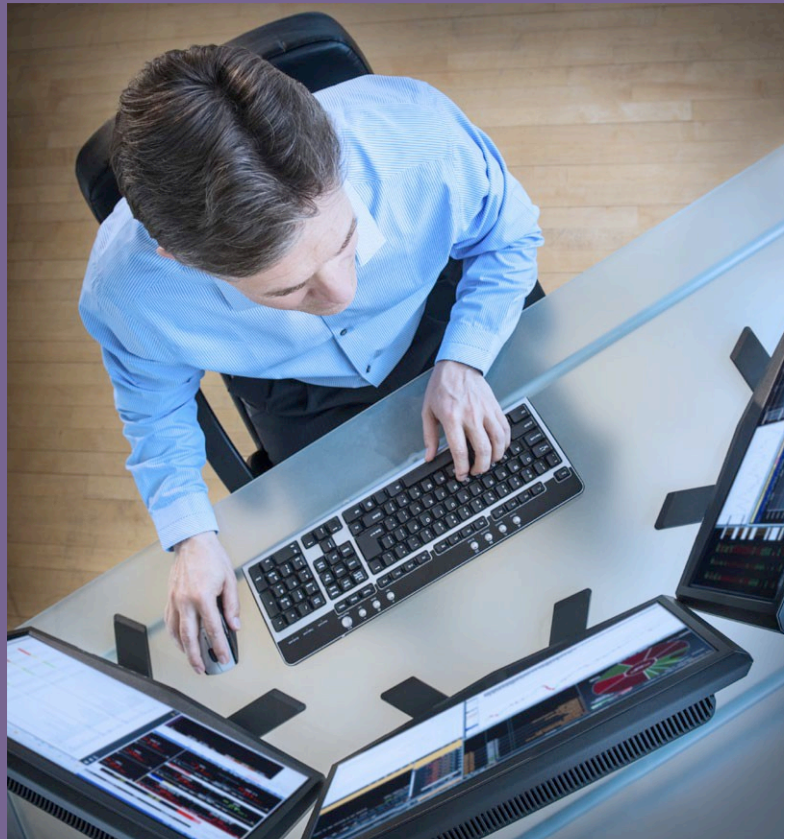


Table 1: STEM occupations, by occupational group

Management	Electrical and electronics engineering technicians	Forensic science technicians
Architectural and engineering managers	Electrical engineers	Forest and conservation technicians
Computer and information systems managers	Electro-mechanical technicians	Foresters
Natural sciences managers	Electronics engineers, except computer	Geological and petroleum technicians
Computer and mathematics	Environmental engineering technicians	Geoscientists, except hydrologists and geographers
Actuaries	Environmental engineers	Hydrologists
Computer and information research scientists	Health and safety engineers, except mining safety engineers and inspectors	Life, physical, and social science technicians, all other
Computer network architects	Industrial engineering technicians	Materials scientists
Computer network support specialists	Industrial engineers	Medical scientists, except epidemiologists
Computer programmers	Marine engineers and naval architects	Microbiologists
Computer systems analysts	Materials engineers	Nuclear technicians
Computer user support specialists	Mechanical drafters	Physicists
Database administrators	Mechanical engineering technicians	Soil and plant scientists
Information security analysts	Mechanical engineers	Zoologists and wildlife biologists
Mathematical technicians	Mining and geological engineers, including mining safety engineers	Biological scientists, all other
Mathematicians	Nuclear engineers	Life scientists, all other
Network and computer systems administrators	Petroleum engineers	Physical scientists, all other
Operations research analysts Software developers, applications Software developers, systems software	Surveying and mapping technicians	Education, training, and library
Statisticians	Drafters, all other	Agricultural sciences teachers, postsecondary
Web developers	Engineering technicians, except drafters, all other	Architecture teachers, postsecondary
Computer occupations, all other	Engineers, all other	Atmospheric, earth, marine, and space sciences teachers, postsecondary
Mathematical science occupations, all other	Life, physical, and social sciences	Biological science teachers, postsecondary
Architecture and engineering	Agricultural and food science technicians	Chemistry teachers, postsecondary
Aerospace engineering and operations technicians	Animal scientists	Computer science teachers, postsecondary
Aerospace engineers	Astronomers	Engineering teachers, postsecondary
Agricultural engineers	Atmospheric and space scientists	Environmental science teachers, postsecondary
Architectural and civil drafters	Biochemists and biophysicists	Forestry and conservation science teachers, postsecondary
Biomedical engineers	Biological technicians	Mathematical science teachers, postsecondary
Chemical engineers	Chemical technicians	Physics teachers, postsecondary
Civil engineering technicians	Chemists	Sales and related
Civil engineers	Conservation scientists	Sales engineers
Computer hardware engineers	Environmental science and protection technicians, including health	Sales representatives, wholesale and manufacturing, technical and scientific products
Electrical and electronics drafters	Environmental scientists and specialists, including health	
	Epidemiologists	
	Food scientists and technologists	

Source: 2010 Standard Occupational Classification (SOC) System, SOC Policy Committee recommendation to the Office of Management and Budget. Healthcare occupations are not included.

Outlook

BLS projects overall STEM employment, as defined in this article, to grow about 13 percent between 2012 and 2022. This is faster than the 11-percent rate of growth projected for all occupations over the decade.

But projected employment growth varies by occupation. Knowing which occupations are projected to have the most job openings and fastest growth may help you narrow your career options.

Most job openings. An occupation's projected job openings result from two factors: the creation of new jobs and the need to replace workers who retire or otherwise permanently leave. Occupations with more job openings usually offer more employment opportunities.

As table 2 shows, many of these STEM occupations are related to technology. For example, BLS projects applications software developers to have more than 200,000 job openings between 2012 and 2022.

Table 2: Selected STEM occupations with many job openings, projected 2012–22

Occupation	Job openings, projected 2012–22	Employment		Median annual wage, May 2013	Typical entry-level education ¹
		2012	Projected 2022		
Software developers, applications	218,500	613,000	752,900	\$92,660	Bachelor's degree
Computer systems analysts	209,600	520,600	648,400	81,190	Bachelor's degree
Computer user support specialists ²	196,900	547,700	658,500	46,620	Some college, no degree
Software developers, systems software	134,700	405,000	487,800	101,410	Bachelor's degree
Civil engineers	120,100	272,900	326,600	80,770	Bachelor's degree
Computer programmers	118,100	343,700	372,100	76,140	Bachelor's degree
Sales representatives, wholesale and manufacturing, technical and scientific products ²	111,800	382,300	419,500	74,520	Bachelor's degree
Network and computer systems administrators	100,500	366,400	409,400	74,000	Bachelor's degree
Mechanical engineers	99,700	258,100	269,700	82,100	Bachelor's degree
Computer and information systems managers ³	97,100	332,700	383,600	123,950	Bachelor's degree
Industrial engineers	75,400	223,300	233,400	80,300	Bachelor's degree
Architectural and engineering managers ³	60,600	193,800	206,900	128,170	Bachelor's degree
Web developers	50,700	141,400	169,900	63,160	Associate's degree
Electrical engineers	44,100	166,100	174,000	89,180	Bachelor's degree
Computer network architects ³	43,500	143,400	164,300	95,380	Bachelor's degree

¹ Unless otherwise specified, occupations typically require neither work experience in a related occupation nor on-the-job training to obtain competency.

² In addition to the education specified, this occupation typically requires moderate-term on-the-job training for workers to obtain competency.

³ In addition to the education specified, this occupation typically requires 5 years or more of work experience in a related occupation.

Source: U.S. Bureau of Labor Statistics, Employment Projections program (employment, projections, and education data) and Occupational Employment Statistics survey (wage data).

Fastest growing. Nearly all STEM occupations discussed in this article are projected to grow between 2012 and 2022, according to BLS. And many STEM occupations are projected to grow faster than the average for all occupations. Some of these occupations are in technology; others are related to math and engineering. (See table 3.)

Between 2012 and 2022, BLS projects the fastest growing occupations to have many job openings relative to their employment size. But that doesn't necessarily mean that these occupations have high employment. Some occupations, such as biomedical engineers and

mathematicians, have small employment levels and are projected to remain small, despite fast growth.

Occupations with both high employment and fast growth usually offer better opportunities than small occupations with slow growth. High-employment, fast-growth occupations include computer systems analysts, applications software developers, and systems software developers.

Wages

BLS data show that workers in the STEM occupations discussed in this article earned a

Table 3: Selected STEM occupations with fast employment growth, projected 2012–22

Occupation	Employment growth, projected 2012–22 (percent)	Employment		Median annual wage, May 2013	Typical entry-level education ¹
		2012	Projected 2022		
Information security analysts ²	37%	75,100	102,500	\$88,590	Bachelor's degree
Operations research analysts	27	73,200	92,700	74,630	Bachelor's degree
Statisticians	27	27,600	34,900	79,290	Master's degree
Biomedical engineers	27	19,400	24,600	88,670	Bachelor's degree
Actuaries ³	26	24,300	30,600	94,340	Bachelor's degree
Petroleum engineers	26	38,500	48,400	132,320	Bachelor's degree
Computer systems analysts	25	520,600	648,400	81,190	Bachelor's degree
Software developers, applications	23	613,000	752,900	92,660	Bachelor's degree
Mathematicians	23	3,500	4,300	102,440	Master's degree
Software developers, systems software	20	405,000	487,800	101,410	Bachelor's degree
Computer user support specialists ⁴	20	547,700	658,500	46,620	Some college, no degree
Web developers	20	141,400	169,900	63,160	Associate's degree
Civil engineers	20	272,900	326,600	80,770	Bachelor's degree
Biological science teachers, postsecondary	20	61,400	73,400	75,740	Doctoral or professional degree
Environmental science and protection technicians, including health	19	32,800	38,900	41,700	Associate's degree

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² In addition to the education specified, this occupation typically requires less than 5 years of work experience in a related occupation.

³ In addition to the education specified, this occupation typically requires long-term on-the-job training for workers to obtain competency.

⁴ In addition to the education specified, this occupation typically requires moderate-term on-the-job training for workers to obtain competency.

Source: U.S. Bureau of Labor Statistics, Employment Projections program (employment, projections, and education data) and Occupational Employment Statistics survey (wage data).

median annual wage of nearly \$76,000—more than double the \$35,080 median wage for all workers in May 2013. Many of the top-paying occupations are related to engineering. (See table 4.)

Rewards and challenges

STEM work, like that of most jobs, is both rewarding and challenging. You might work on an interesting project that yields meaningful results, for example—but, to complete it, you might need to repeat an experiment many times or navigate complex government regulations.

Rewards

Many STEM workers find their jobs intellectually stimulating. They enjoy collaborating with people who share their enthusiasm and working with cutting-edge technology. “STEM offers a cooperative, innovative, and exciting work environment that is unparalleled,” says Aimee Kennedy, vice president for education and STEM learning at Battelle Memorial Institute in Columbus, Ohio.

Depending on the occupation, STEM work may be creative and produce tangible results. For example, a biologist might make a discovery in the laboratory and publish that

Table 4: Median annual wages in selected STEM occupations, May 2013

Occupation	Median annual wage, May 2013	Employment		Typical entry-level education ¹
		2012	Projected 2022	
Petroleum engineers	\$132,320	38,500	48,400	Bachelor's degree
Architectural and engineering managers ²	128,170	193,800	206,900	Bachelor's degree
Computer and information systems managers ²	123,950	332,700	383,600	Bachelor's degree
Natural sciences managers ²	116,840	51,600	54,500	Bachelor's degree
Astronomers	110,450	2,700	2,900	Doctoral or professional degree
Physicists	110,110	20,600	22,700	Doctoral or professional degree
Computer and information research scientists	106,290	26,700	30,800	Doctoral or professional degree
Computer hardware engineers	104,250	83,300	89,400	Bachelor's degree
Aerospace engineers	103,870	83,000	89,100	Bachelor's degree
Mathematicians	102,440	3,500	4,300	Master's degree
Nuclear engineers	101,600	20,400	22,300	Bachelor's degree
Software developers, systems software	101,410	405,000	487,800	Bachelor's degree
Chemical engineers	95,730	33,300	34,800	Bachelor's degree
Computer network architects ²	95,380	143,400	164,300	Bachelor's degree
Engineering teachers, postsecondary	94,460	42,500	47,500	Doctoral or professional degree

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Source: U.S. Bureau of Labor Statistics, Employment Projections program (employment, projections, and education data) and Occupational Employment Statistics survey (wage data).