



# TORQ Analysis of Occupational Health and Safety Technicians to Fire Inspectors

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Occupational Health and Safety Technicians	29-9012.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Fire Inspectors	33-2021.01	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS													
Grand TORQ:												94	
Ability TORQ				Skills TORQ				Knowledge TORQ					
Level				93	Level				96	Level			94
Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add					
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt		
Inductive Reasoning	60	10	75	Writing	79	6	86	Design	62	18	82		
Near Vision	57	7	72	Active Learning	75	2	77	Law and Government	75	7	87		
Problem Sensitivity	59	4	97					Building and Construction	69	5	85		
Written Comprehension	59	6	62										
Deductive Reasoning	55	5	62										
Written Expression	57	4	65										
Flexibility of Closure	51	5	50										
Oral Expression	60	1	81										
LEVEL and IMPT (IMPORTANCE) refer to the Target Fire Inspectors. GAP refers to level difference between Occupational Health and Safety Technicians and Fire Inspectors.													

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Occupational Health and Safety Technicians	Fire Inspectors	Importance
Problem Sensitivity	 55	 59	 97
Oral Comprehension	 59	 59	 81



Oral Expression	59	60	81
Inductive Reasoning	50	60	75
Near Vision	50	57	72
Written Expression	53	57	65
Speech Clarity	53	53	65
Written Comprehension	53	59	62
Deductive Reasoning	50	55	62
Speech Recognition	42	39	56
Information Ordering	48	46	53
Flexibility of Closure	46	51	50
Selective Attention	44	44	50

## Skill Level Comparison - Abilities with importance scores over 69

Description	Occupational Health and Safety Technicians	Fire Inspectors	Importance
Writing	73	79	86
Active Learning	73	75	77

## Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Occupational Health and Safety Technicians	Fire Inspectors	Importance
Law and Government	68	75	87
Building and Construction	64	69	85
Design	44	62	82

## Experience &amp; Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Occupational Health and Safety Technicians	Fire Inspectors	Description	Occupational Health and Safety Technicians	Fire Inspectors
10+ years	0%	6%	Doctoral	0%	0%
8-10 years	0%	7%	Professional Degree	0%	0%
6-8 years	4%	4%	Post-Masters Cert	0%	0%
4-6 years	16%	11%	Master's Degree	0%	0%
2-4 years	50%	13%	Post-Bachelor Cert	8%	0%
1-2 years	20%	2%	Bachelors	29%	13%
6-12 months	8%	15%	AA or Equiv	33%	16%

0-1 months	0%	8%	Some College	16%	33%
1-3 months	0%	1%	Post-Secondary Certificate	4%	23%
0-1 month	0%	29%	High School Diploma or GED	8%	11%
None	0%		No HSD or GED	0%	0%

Occupational Health and Safety Technicians	Fire Inspectors
<b>Most Common Educational/Training Requirement:</b>	
	Work experience in a related occupation
<b>Job Zone Comparison</b>	
-	3 - Job Zone Three: Medium Preparation Needed
	Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.
	Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.
	Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

### Tasks

Occupational Health and Safety Technicians	Fire Inspectors
Core Tasks	Core Tasks
<p>Generalized Work Activities:</p> <ul style="list-style-type: none"> <li>• Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.</li> <li>• Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.</li> <li>• Establishing and Maintaining Interpersonal Relationships - Developing constructive and cooperative working relationships with others, and maintaining them over time.</li> <li>• Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.</li> <li>• Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.</li> <li>• Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.</li> <li>• Training and Teaching Others - Identifying the educational needs of others, developing formal educational or training programs or classes, and teaching or instructing others.</li> </ul>	<p>Generalized Work Activities:</p> <ul style="list-style-type: none"> <li>• Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.</li> <li>• Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.</li> <li>• Performing for or Working Directly with the Public - Performing for people or dealing directly with the public. This includes serving customers in restaurants and stores, and receiving clients or guests.</li> <li>• Documenting/Recording Information - Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.</li> <li>• Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.</li> </ul>
Specific Tasks	Specific Tasks
	<p>Occupation Specific Tasks:</p> <ul style="list-style-type: none"> <li>• Arrange for the replacement of defective fire fighting equipment and for repair of fire alarm and sprinkler systems, making minor repairs such as servicing fire extinguishers when feasible.</li> <li>• Attend training classes to maintain current</li> </ul>



## Occupation Specific Tasks:

- Conduct fire drills, and inspect fire suppression systems and portable fire systems to ensure that they are in working order.
- Conduct interviews to obtain information and evidence regarding communicable diseases or violations of health and sanitation regulations.
- Confer with school and state authorities and community groups to develop health standards and programs.
- Educate the public about health issues, and enforce health legislation in order to prevent disease, to promote health, and to help people understand health protection procedures and regulations.
- Evaluate situations where a worker has refused to work on the grounds that danger or potential harm exists, and determine how such situations should be handled.
- Examine credentials, licenses, or permits to ensure compliance with licensing requirements.
- Help direct rescue and firefighting operations in the event of a fire or an explosion.
- Maintain all required records and documentation.
- Maintain logbooks of daily activities, including areas visited and activities performed.
- Plan emergency response drills.
- Prepare and calibrate equipment used to collect and analyze samples.
- Prepare and review specifications and orders for the purchase of safety equipment, ensuring that proper features are present and that items conform to health and safety standards.
- Prepare documents to be used in legal proceedings, testifying in such proceedings when necessary.
- Provide consultation to organizations or agencies on the application of safety principles, practices, and techniques in the workplace.
- Report the results of environmental contaminant analyses, and recommend corrective measures to be applied.
- Review physicians' reports, and conduct worker studies in order to determine whether specific instances of disease or illness are job-related.
- Review records and reports concerning laboratory results, staffing, floor plans, fire inspections, and sanitation in order to gather information for the development and enforcement of safety activities.
- Supply, operate, and maintain personal protective equipment.
- Test workplaces for environmental hazards such as exposure to radiation, chemical and knowledge of fire prevention, safety, and firefighting procedures.
- Collect fees for permits and licenses.
- Conduct fire code compliance follow-ups to ensure that corrective actions have been taken in cases where violations were found.
- Conduct fire exit drills to monitor and evaluate evacuation procedures.
- Conduct inspections and acceptance testing of newly installed fire protection systems.
- Develop and coordinate fire prevention programs such as false alarm billing, fire inspection reporting, and hazardous materials management.
- Develop or review fire exit plans.
- Identify corrective actions necessary to bring properties into compliance with applicable fire codes, laws, regulations, and standards, and explain these measures to property owners or their representatives.
- Inspect and test fire protection or fire detection systems to verify that such systems are installed in accordance with appropriate laws, codes, ordinances, regulations, and standards.
- Inspect buildings to locate hazardous conditions and fire code violations such as accumulations of combustible material, electrical wiring problems, and inadequate or non-functional fire exits.
- Inspect liquefied petroleum installations, storage containers, and transportation and delivery systems for compliance with fire laws.
- Inspect properties that store, handle, and use hazardous materials to ensure compliance with laws, codes, and regulations, and issue hazardous materials permits to facilities found in compliance.
- Investigate causes of fires, collecting and preparing evidence and presenting it in court when necessary.
- Issue permits for public assemblies.
- Present and explain fire code requirements and fire prevention information to architects, contractors, attorneys, engineers, developers, fire service personnel, and the general public.
- Recommend changes to fire prevention, inspection, and fire code endorsement procedures.
- Review blueprints and plans for new or remodeled buildings to ensure the structures meet fire safety codes.
- Search for clues as to the cause of a fire, once the fire is completely extinguished.
- Serve court appearance summonses or condemnation notices on parties responsible for violations of fire codes, laws, and ordinances.
- Supervise staff, training them, planning their work, and evaluating their performance.
- Testify in court regarding fire code and fire safety issues.



biological hazards, and excessive noise.

- Verify that safety equipment such as hearing protection and respirators is available to employees, and monitor their use of such equipment to ensure proper fit and use.

#### Detailed Tasks

##### Detailed Work Activities:

- analyze effectiveness of safety systems or procedures
- collect samples for testing
- communicate technical information
- evaluate engineering data
- evaluate manufacturing or processing systems
- examine engineering documents for completeness or accuracy
- explain complex mathematical information
- follow safe waste disposal procedures
- perform safety inspections in industrial, manufacturing or repair setting
- prepare safety reports
- prepare technical reports or related documentation
- record test results, test procedures, or inspection data
- test air quality, noise, temperature, or radiation
- understand engineering data or reports
- use hazardous materials information
- use knowledge of materials testing procedures
- use pollution control techniques
- use scientific research methodology
- use technical information in manufacturing or industrial activities
- use technical regulations for engineering problems

- Write detailed reports of fire inspections performed, fire code violations observed, and corrective recommendations offered.

#### Detailed Tasks

##### Detailed Work Activities:

- collect fees
- communicate technical information
- conduct fire hazard inspections
- conduct training for personnel
- enforce laws, ordinances, or regulations
- explain government laws or regulations
- explain government rules or policies
- inspect buildings to detect violations of fire codes
- inspect facilities or equipment for regulatory compliance
- issue licenses or permits
- make presentations
- read maps
- recognize public safety hazards
- recommend action to ensure compliance
- review facts to determine if criminal act or statue violation is involved
- serve or issue summonses or subpoenas
- use emergency medical procedures
- use first aid procedures
- use knowledge of fire, building or other codes
- use oral or written communication techniques
- use public speaking techniques

## Labor Market Comparison

Maine Department of Labor.

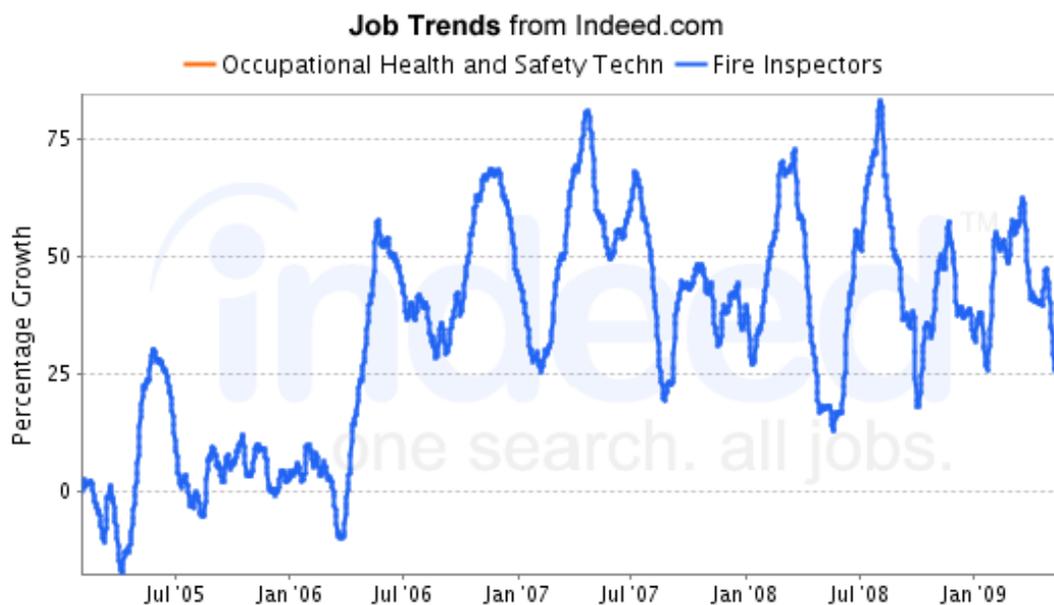
Description	Occupational Health and Safety Technicians	Fire Inspectors	Difference
Median Wage	\$ 39,170	\$ 37,800	\$(1,370)
10th Percentile Wage	\$ 27,180	\$ 29,930	\$ 2,750
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 48,450	\$ 41,410	\$(7,040)
90th Percentile Wage	\$ 56,320	\$ 48,620	\$(7,700)



Mean Wage	\$ 40,170	\$ 38,510	\$(1,660)
Total Employment - 2289	40	80	40
Employment Base - 2006	43	85	42
Projected Employment - 2298	46	88	42
Projected Job Growth - 2006-2298	7.0 %	3.5 %	-3.5 %
Projected Annual Openings - 2006-2298	1	2	1
Special			
Special Occupations:			

## National Job Posting Trends

Trend for Occupational Health and Safety Technicians and Fire Inspectors



Data from [Indeed](http://Indeed.com)

## Programs

### Related Programs

Fire Protection and Safety Tech./Technician

Fire Protection and Safety Technology/Technician. A program that prepares individuals to apply a knowledge of fire prevention and control skills to problems of reducing fire risk, loss limitation, supervising substance removal, conducting fire investigations, and advising on matters of safety procedures and fire prevention policy.

No information on schools for the program

Fire Science/Firefighting



Fire Science/Fire-fighting. A program that prepares individuals to perform the duties of fire fighters. Includes instruction in fire-fighting equipment operation and maintenance, principles of fire science and combustible substances, methods of controlling different types of fires, hazardous material handling and control, fire rescue procedures, public relations and applicable laws and regulations.

Institution	Address	City	URL
Southern Maine Community College	2 Fort Road	South Portland	<a href="http://www.smccME.edu">www.smccME.edu</a>
Southern Maine Community College	2 Fort Road	South Portland	<a href="http://www.smccME.edu">www.smccME.edu</a>

#### Fire Services Administration

Fire Services Administration. A program that prepares individuals to structure, manage, direct and control fire departments, fire prevention services, fire inspection and investigation offices and ancillary rescue services.

No information on schools for the program

### Maine Statewide Promotion Opportunities for Occupational Health and Safety Technicians

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
29-9012.00	Occupational Health and Safety Technicians	100		40	\$39,170.00	\$0.00	7%	1	
29-9011.00	Occupational Health and Safety Specialists	94	5	220	\$62,720.00	\$23,550.00	-2%	4	
17-2111.01	Industrial Safety and Health Engineers	93	4	90	\$49,940.00	\$10,770.00	3%	3	
17-2081.00	Environmental Engineers	92	5	390	\$62,340.00	\$23,170.00	10%	16	
13-1061.00	Emergency Management Specialists	91	4	90	\$41,790.00	\$2,620.00	16%	2	
17-2111.03	Product Safety Engineers	91	5	90	\$49,940.00	\$10,770.00	3%	3	
17-2111.02	Fire-Prevention and Protection Engineers	89	4	90	\$49,940.00	\$10,770.00	3%	3	
25-2032.00	Vocational Education Teachers, Secondary School	89	4	240	\$46,260.00	\$7,090.00	-9%	7	
13-1032.00	Insurance Appraisers, Auto Damage	88	3	40	\$49,950.00	\$10,780.00	5%	1	



11-9121.00	Natural Sciences Managers	87	5	180	\$79,810.00	\$40,640.00	8%	5	
11-9131.00	Postmasters and Mail Superintendents	87	3	420	\$55,200.00	\$16,030.00	-5%	10	
13-1031.01	Claims Examiners, Property and Casualty Insurance	87	3	1,570	\$49,360.00	\$10,190.00	3%	44	★
13-2021.02	Appraisers, Real Estate	87	4	390	\$41,840.00	\$2,670.00	8%	20	★
19-2041.00	Environmental Scientists and Specialists, Including Health	87	5	680	\$46,890.00	\$7,720.00	9%	24	
25-1193.00	Recreation and Fitness Studies Teachers, Postsecondary	87	5	60	\$53,100.00	\$13,930.00	8%	2	

Special Occupations:

### Top Industries for Fire Inspectors

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Local government, excluding education and hospitals	939300	79.38%	10,959	12,311	12.34%
State government, excluding education and hospitals	929200	9.55%	1,319	1,294	-1.87%
Investigation, guard, and armored car services	561610	1.22%	168	201	19.67%
Colleges, universities, and professional schools, public and private	611300	1.21%	167	187	11.87%
Plumbing, heating, and air-conditioning contractors	238220	0.45%	63	71	12.93%

### Top Industries for Occupational Health and Safety Technicians

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Local government, excluding education and hospitals	939300	16.38%	1,715	1,926	12.34%
Colleges, universities, and professional schools, public and private	611300	9.98%	1,045	1,169	11.87%
Management, scientific, and technical consulting services	541600	9.61%	1,006	1,795	78.52%



General medical and surgical hospitals, public and private	622100	9.16%	959	1,062	10.71%
State government, excluding education and hospitals	929200	6.20%	649	636	-1.87%
Employment services	561300	4.80%	503	636	26.56%
Support activities for mining	213100	4.15%	435	409	-5.93%
Electric power generation, transmission and distribution	221100	3.01%	315	290	-8.03%
Federal government, excluding postal service	919999	2.19%	229	216	-5.46%
Management of companies and enterprises	551100	1.65%	173	199	15.28%
Research and development in the physical, engineering, and life sciences	541710	1.65%	173	184	6.68%
Office administrative services	561100	1.23%	128	163	26.79%
Aerospace product and parts manufacturing	336400	0.83%	87	89	1.85%
Semiconductor and other electronic component manufacturing	334400	0.70%	73	64	-12.60%
Animal slaughtering and processing	311600	0.67%	70	80	14.12%



# TORQ Analysis of Occupational Health and Safety Technicians to Occupational Health and Safety Specialists

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Occupational Health and Safety Technicians	29-9012.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Occupational Health and Safety Specialists	29-9011.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS					
Grand TORQ:					94
Ability TORQ		Skills TORQ		Knowledge TORQ	
Level		94	Level		95
			Level		93

Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Problem Sensitivity	66	11	81	Writing	82	9	77	Chemistry	67	8	71
Visualization	46	16	50	Judgment and Decision Making	72	9	72	Communications and Media	48	5	71
Deductive Reasoning	60	10	68	Critical Thinking	71	3	78				
Speech Recognition	51	9	75	Time Management	65	3	74				
Inductive Reasoning	57	7	72	Technology Design	59	3	73				
Written Expression	60	7	65	Speaking	82	3	72				
Originality	50	8	56	Science	66	2	75				
Oral Expression	64	5	72								
Speed of Closure	41	7	50								
Auditory Attention	41	7	50								
Far Vision	51	5	59								
Flexibility of Closure	50	4	62								
Category Flexibility	50	4	59								
Oral Comprehension	62	3	75								
Perceptual Speed	44	3	62								
Written Comprehension	55	2	72								
Speech Clarity	55	2	72								



Information Ordering	50	2	62
Fluency of Ideas	46	2	56
Selective Attention	46	2	56
Mathematical Reasoning	37	2	50
Near Vision	51	1	62

LEVEL and IMPT (IMPORTANCE) refer to the Target Occupational Health and Safety Specialists. GAP refers to level difference between Occupational Health and Safety Technicians and Occupational Health and Safety Specialists.

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Occupational Health and Safety Technicians	Occupational Health and Safety Specialists	Importance
Problem Sensitivity	55	66	81
Oral Comprehension	59	62	75
Speech Recognition	42	51	75
Written Comprehension	53	55	72
Oral Expression	59	64	72
Inductive Reasoning	50	57	72
Speech Clarity	53	55	72
Deductive Reasoning	50	60	68
Written Expression	53	60	65
Information Ordering	48	50	62
Flexibility of Closure	46	50	62
Perceptual Speed	41	44	62
Near Vision	50	51	62
Category Flexibility	46	50	59
Far Vision	46	51	59
Fluency of Ideas	44	46	56
Originality	42	50	56
Selective Attention	44	46	56
Mathematical Reasoning	35	37	50
Speed of Closure	34	41	50
Visualization	30	46	50
Auditory Attention	34	41	50
Skill Level Comparison - Abilities with importance scores over 69			
Description	Occupational Health and Safety Technicians	Occupational Health and Safety Specialists	Importance
Critical Thinking	68	71	78
Writing	73	82	77



Science	64	66	75
Time Management	62	65	74
Technology Design	56	59	73
Speaking	79	82	72
Judgment and Decision Making	63	72	72
Knowledge Level Comparison - Knowledge with importance scores over 69			
Description	Occupational Health and Safety Technicians	Occupational Health and Safety Specialists	Importance
Chemistry	59	67	71
Communications and Media	43	48	71

Experience & Education Comparison					
Related Work Experience Comparison			Required Education Level Comparison		
Description	Occupational Health and Safety Technicians	Occupational Health and Safety Specialists	Description	Occupational Health and Safety Technicians	Occupational Health and Safety Specialists
10+ years	0%	3%	Doctoral	0%	0%
8-10 years	0%	3%	Professional Degree	0%	3%
6-8 years	4%	3%	Post-Masters Cert	0%	0%
4-6 years	16%	16%	Master's Degree	0%	12%
2-4 years	50%	25%	Post-Bachelor Cert	8%	3%
1-2 years	20%	19%	Bachelors	29%	70%
6-12 months	8%	9%	AA or Equiv	33%	6%
3-6 months	0%	6%	Some College	16%	3%
1-3 months	0%	0%	Post-Secondary Certificate	4%	0%
0-1 month	0%	0%	High School Diploma or GED	8%	0%
None	0%	12%	No HSD or GED	0%	0%
Occupational Health and Safety Technicians			Occupational Health and Safety Specialists		
Most Common Educational/Training Requirement:					
Bachelor's degree					
Job Zone Comparison					
-			5 - Job Zone Five: Extensive Preparation Needed		
<p>Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.</p> <p>A bachelor's degree is the minimum formal education required for these occupations. However, many also require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).</p>					



Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.

## Tasks

### Occupational Health and Safety Technicians

#### Core Tasks

##### Generalized Work Activities:

- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.
- Establishing and Maintaining Interpersonal Relationships - Developing constructive and cooperative working relationships with others, and maintaining them over time.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.
- Training and Teaching Others - Identifying the educational needs of others, developing formal educational or training programs or classes, and teaching or instructing others.

#### Specific Tasks

##### Occupation Specific Tasks:

- Conduct fire drills, and inspect fire suppression systems and portable fire systems to ensure that they are in working order.
- Conduct interviews to obtain information and evidence regarding communicable diseases or violations of health and sanitation regulations.
- Confer with school and state authorities and community groups to develop health standards and programs.
- Educate the public about health issues, and enforce health legislation in order to prevent disease, to promote health, and to help people understand health protection procedures and regulations.
- Evaluate situations where a worker has refused to work on the grounds that danger or potential harm exists, and determine how

### Occupational Health and Safety Specialists

#### Core Tasks

##### Generalized Work Activities:

- Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Provide Consultation and Advice to Others - Providing guidance and expert advice to management or other groups on technical, systems-, or process-related topics.
- Establishing and Maintaining Interpersonal Relationships - Developing constructive and cooperative working relationships with others, and maintaining them over time.
- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.

#### Specific Tasks

##### Occupation Specific Tasks:

- Collaborate with engineers and physicians to institute control and remedial measures for hazardous and potentially hazardous conditions or equipment.
- Collect samples of dust, gases, vapors, and other potentially toxic materials for analysis.
- Collect samples of hazardous materials, or arrange for sample collection.
- Conduct audits at hazardous waste sites or industrial sites, and participate in hazardous waste site investigations.
- Conduct safety training and education programs, and demonstrate the use of safety equipment.
- Coordinate "right-to-know" programs regarding hazardous chemicals and other substances.
- Develop and maintain hygiene programs such as noise surveys, continuous atmosphere monitoring, ventilation surveys, and asbestos management plans.
- Develop and maintain medical monitoring



such situations should be handled.

- Examine credentials, licenses, or permits to ensure compliance with licensing requirements.
- Help direct rescue and firefighting operations in the event of a fire or an explosion.
- Maintain all required records and documentation.
- Maintain logbooks of daily activities, including areas visited and activities performed.
- Plan emergency response drills.
- Prepare and calibrate equipment used to collect and analyze samples.
- Prepare and review specifications and orders for the purchase of safety equipment, ensuring that proper features are present and that items conform to health and safety standards.
- Prepare documents to be used in legal proceedings, testifying in such proceedings when necessary.
- Provide consultation to organizations or agencies on the application of safety principles, practices, and techniques in the workplace.
- Report the results of environmental contaminant analyses, and recommend corrective measures to be applied.
- Review physicians' reports, and conduct worker studies in order to determine whether specific instances of disease or illness are job-related.
- Review records and reports concerning laboratory results, staffing, floor plans, fire inspections, and sanitation in order to gather information for the development and enforcement of safety activities.
- Supply, operate, and maintain personal protective equipment.
- Test workplaces for environmental hazards such as exposure to radiation, chemical and biological hazards, and excessive noise.
- Verify that safety equipment such as hearing protection and respirators is available to employees, and monitor their use of such equipment to ensure proper fit and use.

#### Detailed Tasks

##### Detailed Work Activities:

- analyze effectiveness of safety systems or procedures
- collect samples for testing
- communicate technical information
- evaluate engineering data
- evaluate manufacturing or processing systems
- examine engineering documents for completeness or accuracy

programs for employees.

- Inspect and evaluate workplace environments, equipment, and practices, in order to ensure compliance with safety standards and government regulations.
- Inspect specified areas to ensure the presence of fire prevention equipment, safety equipment, and first-aid supplies.
- Investigate accidents to identify causes and to determine how such accidents might be prevented in the future.
- Investigate health-related complaints, and inspect facilities to ensure that they comply with public health legislation and regulations.
- Investigate the adequacy of ventilation, exhaust equipment, lighting, and other conditions that could affect employee health, comfort, or performance.
- Maintain and update emergency response plans and procedures.
- Maintain inventories of hazardous materials and hazardous wastes, using waste tracking systems to ensure that materials are handled properly.
- Order suspension of activities that pose threats to workers' health and safety.
- Perform laboratory analyses and physical inspections of samples in order to detect disease or to assess purity or cleanliness.
- Prepare hazardous, radioactive, and mixed waste samples for transportation and storage by treating, compacting, packaging, and labeling them.
- Provide new-employee health and safety orientations, and develop materials for these presentations.
- Recommend measures to help protect workers from potentially hazardous work methods, processes, or materials.

#### Detailed Tasks

##### Detailed Work Activities:

- analyze effectiveness of safety systems or procedures
- analyze medical data
- calibrate or adjust electronic equipment or instruments to specification
- collect clinical data
- collect samples for testing
- communicate technical information
- compile numerical or statistical data
- conduct evaluations of worker exposure to radiation or noise
- confer with engineering, technical or manufacturing personnel
- develop safety regulations
- evaluate manufacturing or processing systems
- follow safe waste disposal procedures
- inspect facilities or equipment for regulatory



- explain complex mathematical information
- follow safe waste disposal procedures
- perform safety inspections in industrial, manufacturing or repair setting
- prepare safety reports
- prepare technical reports or related documentation
- record test results, test procedures, or inspection data
- test air quality, noise, temperature, or radiation
- understand engineering data or reports
- use hazardous materials information
- use knowledge of materials testing procedures
- use pollution control techniques
- use scientific research methodology
- use technical information in manufacturing or industrial activities
- use technical regulations for engineering problems

compliance

- interpret employee's medical evaluations
- maintain dental or medical records
- make presentations on health or medical issues
- perform safety inspections in industrial, manufacturing or repair setting
- prepare safety reports
- prepare technical reports or related documentation
- recommend measures to ensure maximum employee protection
- set up or calibrate laboratory equipment
- test air quality, noise, temperature, or radiation
- understand engineering data or reports
- use chemical testing or analysis procedures
- use cost benefit analysis techniques
- use hazardous materials information
- use knowledge of investigation techniques
- use knowledge of materials testing procedures
- use pollution control techniques
- use scientific research methodology

#### Tools - Examples

- Gravimetric dust samplers
- Aerosol monitoring instruments
- Air sampling pumps
- Air flow monitors
- Anemometers
- Audiometers
- Barometers
- Chemical detection tubes
- Ultraviolet UV digital meters
- Colorimeters
- Compressed air guns
- Emergency shower stations
- Desktop computers
- Dissolved oxygen monitors
- Radiation monitoring instruments
- Protective ear muffs
- Emergency eye wash stations



- Fire extinguishers
- Flame ionization detectors
- Rotameters
- Wet test meters
- Gamma radiation survey meters
- Gas chromatographs GC
- Benzene detector tubes
- Combustible gas meters
- Geiger counters
- Safety goggles
- Handheld thermometers
- Personal protective suits
- Laboratory balances
- Volumetric flasks
- Smoke generating tubes
- Liquid leak testing equipment
- Luxmeters
- Manometers
- Humidity measurement equipment
- Multi gas detectors
- Notebook computers
- Laboratory transfer pipettes
- Peristaltic pumps
- Personal computers
- pH monitors
- Photometers
- Pressure measurement devices
- Psychrometers
- Self-contained breathing apparatus
- Respirators
- Protective safety shoes
- Sample vials



- Microliter syringes
- Chlorine monitors
- Soil testing kits
- X ray fluorescence XRF lead testing analyzers
- Spirometers
- Measuring tapes
- Mold sampling equipment
- Turbidity monitors
- Vibration measurement equipment

### Labor Market Comparison

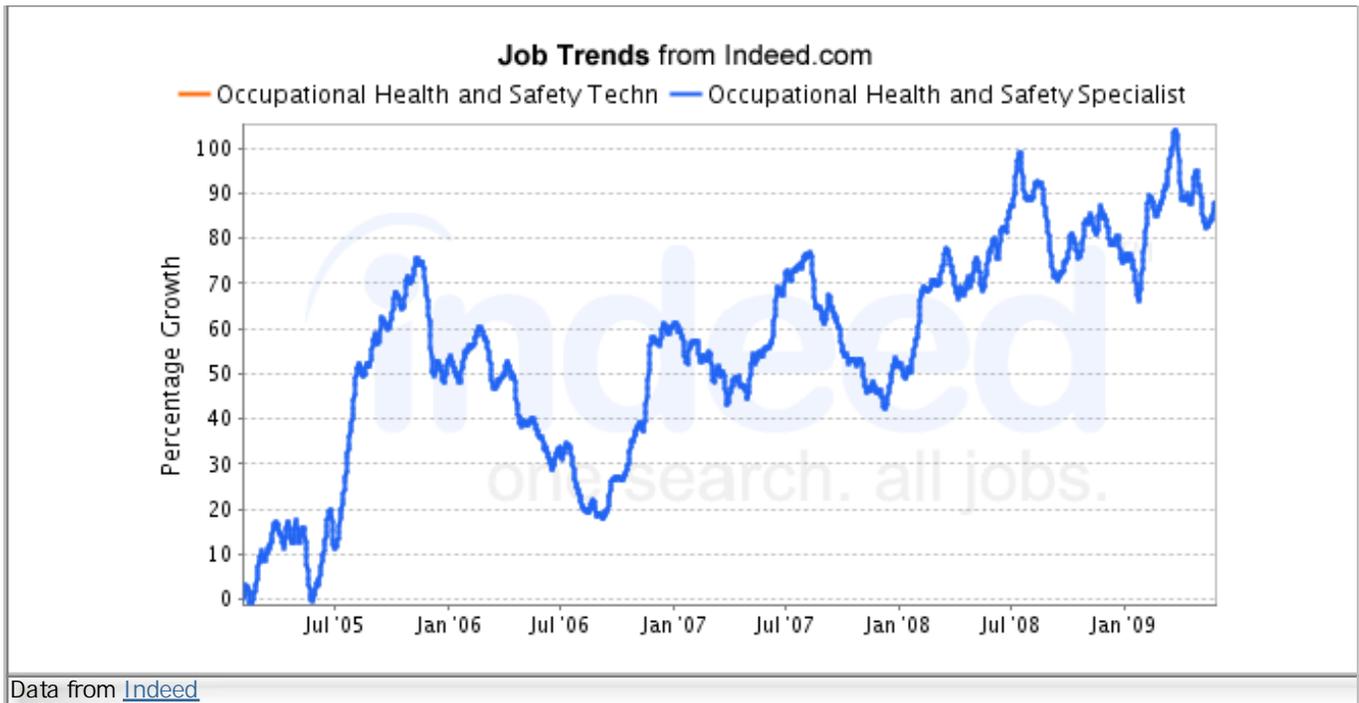
Maine Department of Labor.

Description	Occupational Health and Safety Technicians	Occupational Health and Safety Specialists	Difference
Median Wage	\$ 39,170	\$ 62,720	\$ 23,550
10th Percentile Wage	\$ 27,180	\$ 44,880	\$ 17,700
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 48,450	\$ 74,170	\$ 25,720
90th Percentile Wage	\$ 56,320	\$ 83,360	\$ 27,040
Mean Wage	\$ 40,170	\$ 63,210	\$ 23,040
Total Employment - 2289	40	220	180
Employment Base - 2006	43	233	190
Projected Employment - 2298	46	229	183
Projected Job Growth - 2006-2298	7.0 %	-1.7 %	-8.7 %
Projected Annual Openings - 2006-2298	1	4	3
Special			

Special Occupations:

### National Job Posting Trends

Trend for Occupational Health and Safety Technicians and Occupational Health and Safety Specialists



## Programs

### Related Programs

#### Diagnostic Medical Sonography

Diagnostic Medical Sonography/Sonographer and Ultrasound Technician. A program that prepares individuals, under the supervision of physicians, to utilize medical ultrasound techniques to gather sonographic data used to diagnose a variety of conditions and diseases. Includes instruction in obtaining, reviewing, and integrating patient histories and data; patient instruction and care; anatomic, physiologic and pathologic data recording; sonographic data processing; sonography equipment operation; and professional standards and ethics.

No information on schools for the program

#### Environmental Health

Environmental Health. A program that focuses on the application of environmental sciences, public health, the biomedical sciences, and environmental toxicology to the study of environmental factors affecting human health and related ecological issues, and prepares individuals to function as professional environmental health specialists. Includes instruction in epidemiology, biostatistics, toxicology, public policy analysis, public management, risk assessment, communications, environmental law and applications such as air quality, food protection, radiation protection, solid and hazardous waste management, water quality, noise abatement, housing quality, and environmental control of recreational areas.

Institution	Address	City	URL
University of Southern Maine	96 Falmouth St	Portland	<a href="http://www.usm.maine.edu">www.usm.maine.edu</a>

#### Health Aide

Health Aide. A program that prepares individuals to provide routine care and assistance to patients under the direct supervision of other health care professionals, and/or to perform routine maintenance and general assistance in health care facilities and laboratories.

No information on schools for the program

#### Health and Medical Assistants, Other



Allied Health and Medical Assisting Services, Other. Any instructional program in allied health and medical assisting services not listed above.

No information on schools for the program

#### Health and Medical Diagnostic and Treatment Servic

Allied Health Diagnostic, Intervention, and Treatment Professions, Other. Any instructional program in allied health diagnostic, intervention, and treatment professions not listed above.

Institution	Address	City	URL
University of Southern Maine	96 Falmouth St	Portland	<a href="http://www.usm.maine.edu">www.usm.maine.edu</a>

#### Health Professions and Related Sciences, Other

Health Professions and Related Clinical Sciences, Other. Any instructional program in the health professions and related clinical sciences not listed above.

Institution	Address	City	URL
Wasington County Community College	One College Drive	Calais	<a href="http://www.wccc.me.edu">www.wccc.me.edu</a>

#### Industrial Safety Technology/Technician

Industrial Safety Technology/Technician. A program that prepares individuals to apply basic engineering principles and technical skills to assist engineers and other professionals in implementing and enforcing industrial safety standards. Includes instruction in industrial processes, industrial hygiene, toxicology, ergonomics, system and process safety, safety performance measurement, human factors, human behavior, and applicable law and regulations.

No information on schools for the program

#### Occupational Health and Industrial Hygiene

Occupational Health and Industrial Hygiene. A program that prepares public health specialists to monitor and evaluate health and related safety standards in industrial, commercial, and government workplaces and facilities. Includes instruction in occupational health and safety standards and regulations; health-related aspects of various occupations and work environments; health hazard testing and evaluation; test equipment operation and maintenance; industrial toxicology; worker health and safety education; and the analysis and testing of job-related equipment, behavior practices, and protective devices and procedures.

No information on schools for the program

#### Occupational Safety and Health Tech./Technician

Occupational Safety and Health Technology/Technician. A program that prepares individuals to apply basic engineering principles and technical skills in support of engineers and other professionals engaged in maintaining job-related health and safety standards. Includes instruction in safety engineering principles, inspection and monitoring procedures, testing and sampling procedures, laboratory techniques, applications to specific work environments, and report preparation.

Institution	Address	City	URL
Central Maine Community College	1250 Turner St	Auburn	<a href="http://www.cmcc.edu">www.cmcc.edu</a>
Central Maine Community College	1250 Turner St	Auburn	<a href="http://www.cmcc.edu">www.cmcc.edu</a>

#### Orthoptics



Orthoptics/Orthoptist. A program that prepares individuals, under the supervision of ophthalmologists, to analyze, evaluate, and treat specific disorders of vision, eye movement, and eye alignment in children and adults. Includes instruction in eye anatomy, neuroanatomy, physiology, pharmacology, ophthalmic optics, diagnostic testing and measurement, orthoptic treatment therapy, systemic ocular diseases and disorders, principles of surgery, examination techniques, patient education, child psychology and development, learning disabilities, medical writing, and record-keeping.

No information on schools for the program

Quality Control and Safety Technologies/Technicians, Other

Quality Control and Safety Technologies/Technicians, Other. Any instructional program in quality control and safety technologies not listed above.

No information on schools for the program

### Maine Statewide Promotion Opportunities for Occupational Health and Safety Technicians

O* NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
29-9012.00	Occupational Health and Safety Technicians	100		40	\$39,170.00	\$0.00	7%	1	
29-9011.00	Occupational Health and Safety Specialists	94	5	220	\$62,720.00	\$23,550.00	-2%	4	
17-2111.01	Industrial Safety and Health Engineers	93	4	90	\$49,940.00	\$10,770.00	3%	3	
17-2081.00	Environmental Engineers	92	5	390	\$62,340.00	\$23,170.00	10%	16	
13-1061.00	Emergency Management Specialists	91	4	90	\$41,790.00	\$2,620.00	16%	2	
17-2111.03	Product Safety Engineers	91	5	90	\$49,940.00	\$10,770.00	3%	3	
17-2111.02	Fire-Prevention and Protection Engineers	89	4	90	\$49,940.00	\$10,770.00	3%	3	
25-2032.00	Vocational Education Teachers, Secondary School	89	4	240	\$46,260.00	\$7,090.00	-9%	7	
13-1032.00	Insurance Appraisers, Auto Damage	88	3	40	\$49,950.00	\$10,780.00	5%	1	
11-9121.00	Natural Sciences Managers	87	5	180	\$79,810.00	\$40,640.00	8%	5	



11-9131.00	Postmasters and Mail Superintendents	87	3	420	\$55,200.00	\$16,030.00	-5%	10	
13-1031.01	Claims Examiners, Property and Casualty Insurance	87	3	1,570	\$49,360.00	\$10,190.00	3%	44	★
13-2021.02	Appraisers, Real Estate	87	4	390	\$41,840.00	\$2,670.00	8%	20	★
19-2041.00	Environmental Scientists and Specialists, Including Health	87	5	680	\$46,890.00	\$7,720.00	9%	24	
25-1193.00	Recreation and Fitness Studies Teachers, Postsecondary	87	5	60	\$53,100.00	\$13,930.00	8%	2	

Special Occupations:

### Top Industries for Occupational Health and Safety Specialists

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Local government, excluding education and hospitals	939300	14.60%	6,599	7,413	12.34%
Federal government, excluding postal service	919999	14.55%	6,578	6,218	-5.47%
State government, excluding education and hospitals	929200	13.25%	5,991	5,879	-1.87%
General medical and surgical hospitals, public and private	622100	5.58%	2,521	2,791	10.71%
Management, scientific, and technical consulting services	541600	4.59%	2,074	3,702	78.52%
Colleges, universities, and professional schools, public and private	611300	3.84%	1,738	1,944	11.87%
Management of companies and enterprises	551100	2.53%	1,143	1,317	15.28%
Self-employed workers, primary job	000601	2.39%	1,082	1,153	6.54%
Support activities for mining	213100	1.72%	778	732	-5.93%
Research and development in the physical, engineering, and life sciences	541710	1.70%	768	820	6.69%
Aerospace product and parts manufacturing	336400	1.59%	717	731	1.84%
Electric power generation, transmission and distribution	221100	1.53%	690	635	-8.03%
Employment services	561300	1.30%	590	746	26.56%
Oil and gas extraction	211100	0.87%	392	385	-1.68%
Postal service	491100	0.82%	369	376	1.80%



### Top Industries for Occupational Health and Safety Technicians

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Local government, excluding education and hospitals	939300	16.38%	1,715	1,926	12.34%
Colleges, universities, and professional schools, public and private	611300	9.98%	1,045	1,169	11.87%
Management, scientific, and technical consulting services	541600	9.61%	1,006	1,795	78.52%
General medical and surgical hospitals, public and private	622100	9.16%	959	1,062	10.71%
State government, excluding education and hospitals	929200	6.20%	649	636	-1.87%
Employment services	561300	4.80%	503	636	26.56%
Support activities for mining	213100	4.15%	435	409	-5.93%
Electric power generation, transmission and distribution	221100	3.01%	315	290	-8.03%
Federal government, excluding postal service	919999	2.19%	229	216	-5.46%
Management of companies and enterprises	551100	1.65%	173	199	15.28%
Research and development in the physical, engineering, and life sciences	541710	1.65%	173	184	6.68%
Office administrative services	561100	1.23%	128	163	26.79%
Aerospace product and parts manufacturing	336400	0.83%	87	89	1.85%
Semiconductor and other electronic component manufacturing	334400	0.70%	73	64	-12.60%
Animal slaughtering and processing	311600	0.67%	70	80	14.12%



# TORO Analysis of Occupational Health and Safety Technicians to Environmental Engineers

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Occupational Health and Safety Technicians	29-9012.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Environmental Engineers	17-2081.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS					
Grand TORQ:					92
Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	 94	Level	 90	Level	 92

Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Deductive Reasoning	67	17	75	Programming	34	23	71	Mathematics	64	3	71
Oral Expression	73	14	81	Management of Financial Resources	56	15	70				
Oral Comprehension	73	14	78	Science	78	9	77				
Written Comprehension	67	14	75	Systems Analysis	57	9	70				
Written Expression	67	14	68	Mathematics	65	7	80				
Problem Sensitivity	66	11	78	Writing	78	5	76				
Inductive Reasoning	60	10	75	Active Learning	73	4	74				
Information Ordering	60	12	62	Critical Thinking	78	4	72				
Near Vision	57	7	65	Reading Comprehension	78	3	84				
Category Flexibility	53	7	50	Negotiation	62	3	80				
Selective Attention	48	4	53								

LEVEL and IMPT (IMPORTANCE) refer to the Target Environmental Engineers. GAP refers to level difference between Occupational Health and Safety Technicians and Environmental Engineers.

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Occupational Health and Safety Technicians	Environmental Engineers	Importance



Oral Expression	59	73	81
Oral Comprehension	59	73	78
Problem Sensitivity	55	66	78
Written Comprehension	53	67	75
Deductive Reasoning	50	67	75
Inductive Reasoning	50	60	75
Written Expression	53	67	68
Speech Recognition	42	42	68
Speech Clarity	53	41	68
Near Vision	50	57	65
Information Ordering	48	60	62
Selective Attention	44	48	53
Category Flexibility	46	53	50

## Skill Level Comparison - Abilities with importance scores over 69

Description	Occupational Health and Safety Technicians	Environmental Engineers	Importance
Reading Comprehension	75	78	84
Mathematics	58	65	80
Negotiation	59	62	80
Science	69	78	77
Writing	73	78	76
Active Learning	69	73	74
Critical Thinking	74	78	72
Programming	11	34	71
Systems Analysis	48	57	70
Management of Financial Resources	41	56	70

## Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Occupational Health and Safety Technicians	Environmental Engineers	Importance
Mathematics	61	64	71

## Experience &amp; Education Comparison

Related Work Experience Comparison

Required Education Level Comparison



Description	Occupational Health and Safety Technicians	Environmental Engineers	Description	Occupational Health and Safety Technicians	Environmental Engineers
10+ years	0%	16%	Doctoral	0%	0%
8-10 years	0%	0%	Professional Degree	0%	0%
6-8 years	4%	22%	Post-Masters Cert	0%	15%
4-6 years	16%	18%	Master's Degree	0%	42%
2-4 years	50%	29%	Post-Bachelor Cert	8%	0%
1-2 years	20%	7%	Bachelors	29%	22%
6-12 months	8%	0%	AA or Equiv	33%	0%
3-6 months	0%	0%	Some College	16%	17%
1-3 months	0%	0%	Post-Secondary Certificate	4%	0%
0-1 month	0%	0%	High School Diploma or GED	8%	0%
None	0%	6%	No HSD or GED	0%	0%

Occupational Health and Safety Technicians	Environmental Engineers
<b>Most Common Educational/Training Requirement:</b>	
	Bachelor's degree
<b>Job Zone Comparison</b>	
-	5 - Job Zone Five: Extensive Preparation Needed
	Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.
	A bachelor's degree is the minimum formal education required for these occupations. However, many also require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).
	Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.

## Tasks

Occupational Health and Safety Technicians	Environmental Engineers
Core Tasks	Core Tasks
<p>Generalized Work Activities:</p> <ul style="list-style-type: none"> <li>Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.</li> <li>Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.</li> <li>Establishing and Maintaining Interpersonal Relationships - Developing constructive and cooperative working relationships with others, and maintaining them over time.</li> <li>Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.</li> </ul>	<p>Generalized Work Activities:</p> <ul style="list-style-type: none"> <li>Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.</li> <li>Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.</li> <li>Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.</li> <li>Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.</li> <li>Communicating with Supervisors, Peers, or</li> </ul>



- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.
- Training and Teaching Others - Identifying the educational needs of others, developing formal educational or training programs or classes, and teaching or instructing others.

#### Specific Tasks

##### Occupation Specific Tasks:

- Conduct fire drills, and inspect fire suppression systems and portable fire systems to ensure that they are in working order.
- Conduct interviews to obtain information and evidence regarding communicable diseases or violations of health and sanitation regulations.
- Confer with school and state authorities and community groups to develop health standards and programs.
- Educate the public about health issues, and enforce health legislation in order to prevent disease, to promote health, and to help people understand health protection procedures and regulations.
- Evaluate situations where a worker has refused to work on the grounds that danger or potential harm exists, and determine how such situations should be handled.
- Examine credentials, licenses, or permits to ensure compliance with licensing requirements.
- Help direct rescue and firefighting operations in the event of a fire or an explosion.
- Maintain all required records and documentation.
- Maintain logbooks of daily activities, including areas visited and activities performed.
- Plan emergency response drills.
- Prepare and calibrate equipment used to collect and analyze samples.
- Prepare and review specifications and orders for the purchase of safety equipment, ensuring that proper features are present and that items conform to health and safety standards.
- Prepare documents to be used in legal proceedings, testifying in such proceedings when necessary.
- Provide consultation to organizations or agencies on the application of safety principles, practices, and techniques in the workplace.
- Report the results of environmental contaminant analyses, and recommend

Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

#### Specific Tasks

##### Occupation Specific Tasks:

- Advise corporations and government agencies of procedures to follow in cleaning up contaminated sites to protect people and the environment.
- Advise industries and government agencies about environmental policies and standards.
- Assess the existing or potential environmental impact of land use projects on air, water, and land.
- Assess, sort, characterize, and pack known and unknown materials.
- Assist in budget implementation, forecasts, and administration.
- Collaborate with environmental scientists, planners, hazardous waste technicians, engineers, and other specialists, and experts in law and business to address environmental problems.
- Coordinate and manage environmental protection programs and projects, assigning and evaluating work.
- Design systems, processes, and equipment for control, management, and remediation of water, air, and soil quality.
- Develop and present environmental compliance training or orientation sessions.
- Develop proposed project objectives and targets, and report to management on progress in attaining them.
- Develop site-specific health and safety protocols, such as spill contingency plans and methods for loading and transporting waste.
- Develop, implement, and manage plans and programs related to conservation and management of natural resources.
- Inform company employees and other interested parties of environmental issues.
- Inspect industrial and municipal facilities and programs to evaluate operational effectiveness and ensure compliance with environmental regulations.
- Maintain, write, and revise quality assurance documentation and procedures.
- Monitor progress of environmental improvement programs.
- Obtain, update, and maintain plans, permits, and standard operating procedures.
- Prepare hazardous waste manifests and land disposal restriction notifications.
- Prepare, review, and update environmental investigation and recommendation reports.
- Provide administrative support for projects by collecting data, providing project documentation, training staff, and



corrective measures to be applied.

- Review physicians' reports, and conduct worker studies in order to determine whether specific instances of disease or illness are job-related.
- Review records and reports concerning laboratory results, staffing, floor plans, fire inspections, and sanitation in order to gather information for the development and enforcement of safety activities.
- Supply, operate, and maintain personal protective equipment.
- Test workplaces for environmental hazards such as exposure to radiation, chemical and biological hazards, and excessive noise.
- Verify that safety equipment such as hearing protection and respirators is available to employees, and monitor their use of such equipment to ensure proper fit and use.

#### Detailed Tasks

##### Detailed Work Activities:

- analyze effectiveness of safety systems or procedures
- collect samples for testing
- communicate technical information
- evaluate engineering data
- evaluate manufacturing or processing systems
- examine engineering documents for completeness or accuracy
- explain complex mathematical information
- follow safe waste disposal procedures
- perform safety inspections in industrial, manufacturing or repair setting
- prepare safety reports
- prepare technical reports or related documentation
- record test results, test procedures, or inspection data
- test air quality, noise, temperature, or radiation
- understand engineering data or reports
- use hazardous materials information
- use knowledge of materials testing procedures
- use pollution control techniques
- use scientific research methodology
- use technical information in manufacturing or industrial activities
- use technical regulations for engineering problems

performing other general administrative duties.

- Provide environmental engineering assistance in network analysis, regulatory analysis, and planning or reviewing database development.
- Provide technical-level support for environmental remediation and litigation projects, including remediation system design and determination of regulatory applicability.
- Request bids from suppliers or consultants.
- Serve as liaison with federal, state, and local agencies and officials on issues pertaining to solid and hazardous waste program requirements.
- Serve on teams conducting multimedia inspections at complex facilities, providing assistance with planning, quality assurance, safety inspection protocols, and sampling.

#### Detailed Tasks

##### Detailed Work Activities:

- adhere to safety procedures
- advise clients or customers
- advise clients regarding engineering problems
- advise governmental or industrial personnel
- analyze ecosystem data
- analyze engineering design problems
- analyze engineering test data
- analyze project proposal to determine feasibility, cost, or time
- analyze scientific research data or investigative findings
- analyze technical data, designs, or preliminary specifications
- analyze test data
- calculate engineering specifications
- collect scientific or technical data
- communicate technical information
- compile numerical or statistical data
- confer with engineering, technical or manufacturing personnel
- confer with scientists
- coordinate engineering project activities
- create mathematical or statistical diagrams or charts
- delegate authority for engineering activities
- design control systems
- design engineered systems
- design waste recovery methods



- develop or maintain databases
- develop plans for programs or projects
- develop policies, procedures, methods, or standards
- develop tables depicting data
- direct and coordinate activities of workers or staff
- direct and coordinate scientific research or investigative studies
- direct personnel in support of engineering activities
- draw prototypes, plans, or maps to scale
- estimate cost for engineering projects
- estimate time needed for project
- evaluate costs of engineering projects
- evaluate engineering data
- examine engineering documents for completeness or accuracy
- explain complex mathematical information
- follow safe waste disposal procedures
- interpret aerial photographs
- judge soil conditions
- lead teams in engineering projects
- operate land or site surveying instruments
- plan construction of structures or facilities
- plan scientific research or investigative studies
- plan testing of engineering methods
- prepare environmental impact or related environmental reports
- prepare reports
- prepare safety reports
- prepare technical reports or related documentation
- provide analytical assessment of engineering data
- read maps
- read technical drawings
- resolve engineering or science problems
- supervise pollution control workers
- test air quality, noise, temperature, or radiation
- test equipment as part of engineering projects or processes
- understand construction specifications
- understand engineering data or reports
- understand government construction contracting regulations
- use building or land use regulations
- use computer aided drafting or design software for design, drafting, modeling, or other engineering tasks
- use computers to enter, access or retrieve data
- use drafting or mechanical drawing techniques



- use field notes in technical drawings
- use government regulations
- use hazardous disposal techniques
- use hazardous materials information
- use intuitive judgment for engineering analyses
- use knowledge of investigation techniques
- use knowledge of regulations in surveying or construction activities
- use land surveying techniques
- use library or online Internet research techniques
- use mathematical or statistical methods to identify or analyze problems
- use pollution control techniques
- use project management techniques
- use quantitative research methods
- use relational database software
- use research methodology procedures within manufacturing or commerce
- use scientific research methodology
- use spreadsheet software
- use technical regulations for engineering problems
- use word processing or desktop publishing software
- work as a team member
- write business project or bid proposals

#### Tools - Examples

- Sampling trains
- Sampling pumps
- Air velocity meters
- Anaerobic growth chambers
- Atomic absorption AA spectrometers
- Mercury/hybrid atomizers
- Stem augers
- Headspace autosamplers
- Chemostats
- Interferometric refractometers
- Centrifuges
- Surface area analyzers
- Fluorescence detectors
- Liquid chromatography detectors
- Colorimeters



- Conductivity meters
- Drill rigs
- Universal fractionators
- Desktop computers
- Soil modulus failure testing devices
- Respirometers
- Dissolved oxygen meters
- Electron capture detectors ECD
- Particle counters
- Environmental probe systems
- Supercritical fluid extractors
- Particulate filters
- Flame emission detectors
- Flow meters
- Epifluorescence microscopes
- Air incubators
- Freeze dryers
- Fume hoods
- Gas chromatographs GC
- Multi gas detector tubes
- Gas meters
- Global positioning system GPS devices
- Capillary electrophoresis systems
- Ion chromatographs
- Argon ionization detectors
- Glove box systems
- Balances
- Ovens
- Microwave digestion instruments
- Liquid scintillation counters
- Mass spectrometers
- Electric pumps



- Soil carbon-nitrogen CN analyzers
- Notebook computers
- Current meters
- Water level gauges
- Shakers
- Organic carbon analyzers
- Ozonators
- California bearing ratio CBR testing devices
- Consolidometers
- pH meters
- Charge-coupled device CCD cameras
- Laser photometers
- Scanning potentiostats
- Graphite furnaces
- Mud rotary drills
- Whole air canisters
- Biological oxidizers
- Seismographs
- Direct shear testing devices
- Combustible gas meters
- Geoprobes
- Atomic absorption AA spectrophotometers
- Autoclaves
- Thermal conductivity detectors
- Thermocouples
- Automatic titrators
- Water purification systems
- Sample concentrators
- Liquid ring pumps
- Multi-parameter water quality monitoring instruments
- Stormwater samplers



## Labor Market Comparison

Maine Department of Labor.

Description	Occupational Health and Safety Technicians	Environmental Engineers	Difference
Median Wage	\$ 39,170	\$ 62,340	\$ 23,170
10th Percentile Wage	\$ 27,180	\$ 41,940	\$ 14,760
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 48,450	\$ 76,680	\$ 28,230
90th Percentile Wage	\$ 56,320	\$ 93,850	\$ 37,530
Mean Wage	\$ 40,170	\$ 65,020	\$ 24,850
Total Employment - 2289	40	390	350
Employment Base - 2006	43	391	348
Projected Employment - 2298	46	429	383
Projected Job Growth - 2006-2298	7.0 %	9.7 %	2.7 %
Projected Annual Openings - 2006-2298	1	16	15
Special			

Special Occupations:

## National Job Posting Trends

Trend for Occupational Health and Safety Technicians and Environmental Engineers



Data from [Indeed](http://Indeed.com)

**Programs****Related Programs****Engineering Physics**

Engineering Physics. A program with a general focus on the general application of mathematical and scientific principles of physics to the analysis and evaluation of engineering problems. Includes instruction in high- and low-temperature phenomena, computational physics, superconductivity, applied thermodynamics, molecular and particle physics applications, and space science research.

Institution	Address	City	URL
University of Maine		Orono	<a href="http://www.umaine.edu/">www.umaine.edu/</a>
University of Maine		Orono	<a href="http://www.umaine.edu/">www.umaine.edu/</a>

**Engineering Science**

Engineering Science. A program with a general focuses on the general application of various combinations of mathematical and scientific principles to the analysis and evaluation of engineering problems, including applied research in human behavior, statistics, biology, chemistry, the earth and planetary sciences, atmospheric and meteorology, and computer applications.

No information on schools for the program

**Environmental/Environmental Health Engineering**

Environmental/Environmental Health Engineering. A program that prepares individuals to apply mathematical and scientific principles to the design, development and operational evaluation of systems for controlling contained living environments and for monitoring and controlling factors in the external natural environment, including pollution control, waste and hazardous material disposal, health and safety protection, conservation, life support, and requirements for protection of special materials and related work environments.

No information on schools for the program

**Maine Statewide Promotion Opportunities for Occupational Health and Safety Technicians**

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
29-9012.00	Occupational Health and Safety Technicians	100		40	\$39,170.00	\$0.00	7%	1	
29-9011.00	Occupational Health and Safety Specialists	94	5	220	\$62,720.00	\$23,550.00	-2%	4	
17-2111.01	Industrial Safety and Health Engineers	93	4	90	\$49,940.00	\$10,770.00	3%	3	
17-2081.00	Environmental Engineers	92	5	390	\$62,340.00	\$23,170.00	10%	16	



13-1061.00	Emergency Management Specialists	91	4	90	\$41,790.00	\$2,620.00	16%	2	
17-2111.03	Product Safety Engineers	91	5	90	\$49,940.00	\$10,770.00	3%	3	
17-2111.02	Fire-Prevention and Protection Engineers	89	4	90	\$49,940.00	\$10,770.00	3%	3	
25-2032.00	Vocational Education Teachers, Secondary School	89	4	240	\$46,260.00	\$7,090.00	-9%	7	
13-1032.00	Insurance Appraisers, Auto Damage	88	3	40	\$49,950.00	\$10,780.00	5%	1	
11-9121.00	Natural Sciences Managers	87	5	180	\$79,810.00	\$40,640.00	8%	5	
11-9131.00	Postmasters and Mail Superintendents	87	3	420	\$55,200.00	\$16,030.00	-5%	10	
13-1031.01	Claims Examiners, Property and Casualty Insurance	87	3	1,570	\$49,360.00	\$10,190.00	3%	44	★
13-2021.02	Appraisers, Real Estate	87	4	390	\$41,840.00	\$2,670.00	8%	20	★
19-2041.00	Environmental Scientists and Specialists, Including Health	87	5	680	\$46,890.00	\$7,720.00	9%	24	
25-1193.00	Recreation and Fitness Studies Teachers, Postsecondary	87	5	60	\$53,100.00	\$13,930.00	8%	2	

Special Occupations:

### Top Industries for Environmental Engineers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Management, scientific, and technical consulting services	541600	14.42%	7,838	13,992	78.52%
State government, excluding education and hospitals	929200	12.46%	6,772	6,646	-1.87%
Local government, excluding education and hospitals	939300	8.86%	4,816	5,410	12.34%



Federal government, excluding postal service	919999	7.84%	4,258	4,026	-5.47%
Remediation and other waste management services	562900	2.98%	1,619	2,356	45.48%
Self-employed workers, primary job	000601	2.66%	1,444	1,538	6.54%
Testing laboratories	541380	1.90%	1,034	1,273	23.12%
Management of companies and enterprises	551100	1.67%	908	1,047	15.28%
Waste treatment and disposal	562200	0.94%	512	643	25.61%
Iron and steel mills and ferroalloy manufacturing	331100	0.87%	473	318	-32.68%
Electric power generation, transmission and distribution	221100	0.67%	363	334	-8.03%
Aerospace product and parts manufacturing	336400	0.57%	308	314	1.84%
Colleges, universities, and professional schools, public and private	611300	0.49%	267	299	11.88%
Petroleum and coal products manufacturing	324100	0.47%	257	194	-24.51%
Pharmaceutical and medicine manufacturing	325400	0.43%	236	297	26.03%

### Top Industries for Occupational Health and Safety Technicians

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Local government, excluding education and hospitals	939300	16.38%	1,715	1,926	12.34%
Colleges, universities, and professional schools, public and private	611300	9.98%	1,045	1,169	11.87%
Management, scientific, and technical consulting services	541600	9.61%	1,006	1,795	78.52%
General medical and surgical hospitals, public and private	622100	9.16%	959	1,062	10.71%
State government, excluding education and hospitals	929200	6.20%	649	636	-1.87%
Employment services	561300	4.80%	503	636	26.56%
Support activities for mining	213100	4.15%	435	409	-5.93%
Electric power generation, transmission and distribution	221100	3.01%	315	290	-8.03%
Federal government, excluding postal service	919999	2.19%	229	216	-5.46%
Management of companies and enterprises	551100	1.65%	173	199	15.28%
Research and development in the physical, engineering, and life sciences	541710	1.65%	173	184	6.68%
Office administrative services	561100	1.23%	128	163	26.79%
Aerospace product and parts manufacturing	336400	0.83%	87	89	1.85%
Semiconductor and other electronic component manufacturing	334400	0.70%	73	64	-12.60%



Animal slaughtering and processing	311600	0.67%	70	80	14.12%
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# TORQ Analysis of Occupational Health and Safety Technicians to Industrial Safety and Health Engineers

## ANALYSIS INPUT

Transfer	Title	O*NET	Filters		
From Title:	Occupational Health and Safety Technicians	29-9012.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Industrial Safety and Health Engineers	17-2111.01	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

## TORQ RESULTS

Grand TORQ:

93

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	94	Level	94	Level	91

Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Originality	55	13	68	Negotiation	75	17	76	Administration and Management	67	15	80
Speech Recognition	53	11	68	Persuasion	85	11	73	English Language	75	5	83
Inductive Reasoning	60	10	72	Systems Analysis	64	9	69	Law and Government	61	5	79
Deductive Reasoning	59	9	72	Active Learning	76	7	80				
Number Facility	50	11	50	Mathematics	63	5	88				
Written Expression	60	7	75	Complex Problem Solving	73	6	70				
Problem Sensitivity	62	7	75	Social Perceptiveness	69	4	70				
Fluency of Ideas	51	7	65	Critical Thinking	71	3	83				
Written Comprehension	59	6	68	Reading Comprehension	77	2	87				
Mathematical Reasoning	42	7	53	Writing	71	2	87				
Hearing Sensitivity	41	7	50								
Information Ordering	53	5	65								
Category Flexibility	51	5	62								
Oral Expression	62	3	75								
Perceptual Speed	44	3	50								
Oral Comprehension	60	1	75								



LEVEL and IMPT (IMPORTANCE) refer to the Target Industrial Safety and Health Engineers. GAP refers to level difference between Occupational Health and Safety Technicians and Industrial Safety and Health Engineers.

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Occupational Health and Safety Technicians	Industrial Safety and Health Engineers	Importance
Oral Comprehension	59	60	75
Oral Expression	59	62	75
Written Expression	53	60	75
Problem Sensitivity	55	62	75
Deductive Reasoning	50	59	72
Inductive Reasoning	50	60	72
Speech Clarity	53	48	72
Written Comprehension	53	59	68
Originality	42	55	68
Speech Recognition	42	53	68
Fluency of Ideas	44	51	65
Information Ordering	48	53	65
Near Vision	50	50	65
Category Flexibility	46	51	62
Selective Attention	44	42	56
Far Vision	46	44	56
Mathematical Reasoning	35	42	53
Flexibility of Closure	46	44	53
Number Facility	39	50	50
Perceptual Speed	41	44	50
Hearing Sensitivity	34	41	50
Skill Level Comparison - Abilities with importance scores over 69			
Description	Occupational Health and Safety Technicians	Industrial Safety and Health Engineers	Importance
Mathematics	58	63	88
Reading Comprehension	75	77	87
Writing	69	71	87
Critical Thinking	68	71	83
Active Learning	69	76	80
Negotiation	58	75	76



Persuasion	74	85	73
Social Perceptiveness	65	69	70
Complex Problem Solving	67	73	70
Systems Analysis	55	64	69
Knowledge Level Comparison - Knowledge with importance scores over 69			
Description	Occupational Health and Safety Technicians	Industrial Safety and Health Engineers	Importance
English Language	70	75	83
Administration and Management	52	67	80
Law and Government	56	61	79

### Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Occupational Health and Safety Technicians	Industrial Safety and Health Engineers	Description	Occupational Health and Safety Technicians	Industrial Safety and Health Engineers
10+ years	0%	5%	Doctoral	0%	0%
8-10 years	0%	2%	Professional Degree	0%	2%
6-8 years	4%	2%	Post-Masters Cert	0%	0%
4-6 years	16%	18%	Master's Degree	0%	5%
2-4 years	50%	42%	Post-Bachelor Cert	8%	13%
1-2 years	20%	10%	Bachelors	29%	78%
6-12 months	8%	2%	AA or Equiv	33%	0%
3-6 months	0%	5%	Some College	16%	0%
1-3 months	0%	0%	Post-Secondary Certificate	4%	0%
0-1 month	0%	0%	High School Diploma or GED	8%	0%
None	0%	10%	No HSD or GED	0%	0%
Occupational Health and Safety Technicians			Industrial Safety and Health Engineers		
Most Common Educational/Training Requirement:					
Bachelor's degree					
Job Zone Comparison					
-			4 - Job Zone Four: Considerable Preparation Needed		
			A minimum of two to four years of work-related skill, knowledge, or experience is needed for these occupations. For example, an accountant must complete four years of college and work for several years in accounting to be considered qualified.		
			Most of these occupations require a four - year bachelor's degree, but some do not.		
			Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.		

### Tasks



## Occupational Health and Safety Technicians

## Core Tasks

## Generalized Work Activities:

- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.
- Establishing and Maintaining Interpersonal Relationships - Developing constructive and cooperative working relationships with others, and maintaining them over time.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.
- Training and Teaching Others - Identifying the educational needs of others, developing formal educational or training programs or classes, and teaching or instructing others.

## Specific Tasks

## Occupation Specific Tasks:

- Conduct fire drills, and inspect fire suppression systems and portable fire systems to ensure that they are in working order.
- Conduct interviews to obtain information and evidence regarding communicable diseases or violations of health and sanitation regulations.
- Confer with school and state authorities and community groups to develop health standards and programs.
- Educate the public about health issues, and enforce health legislation in order to prevent disease, to promote health, and to help people understand health protection procedures and regulations.
- Evaluate situations where a worker has refused to work on the grounds that danger or potential harm exists, and determine how such situations should be handled.
- Examine credentials, licenses, or permits to ensure compliance with licensing requirements.
- Help direct rescue and firefighting operations in the event of a fire or an explosion.

## Industrial Safety and Health Engineers

## Core Tasks

## Generalized Work Activities:

- Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.
- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Communicating with Persons Outside Organization - Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or e-mail.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

## Specific Tasks

## Occupation Specific Tasks:

- Advise architects, builders, and other construction personnel on fire prevention equipment and techniques, and on fire code and standard interpretation and compliance.
- Attend workshops, seminars, or conferences to present or obtain information regarding fire prevention and protection.
- Conduct research on fire retardants and the fire safety of materials and devices.
- Consult with authorities to discuss safety regulations and to recommend changes as necessary.
- Design fire detection equipment, alarm systems, and fire extinguishing devices and systems.
- Determine causes of fires, and ways in which they could have been prevented.
- Develop plans for the prevention of destruction by fire, wind, and water.
- Develop training materials, and conduct training sessions on fire protection.
- Direct the purchase, modification, installation, maintenance, and operation of fire protection systems.
- Evaluate fire department performance and



- Maintain all required records and documentation.
- Maintain logbooks of daily activities, including areas visited and activities performed.
- Plan emergency response drills.
- Prepare and calibrate equipment used to collect and analyze samples.
- Prepare and review specifications and orders for the purchase of safety equipment, ensuring that proper features are present and that items conform to health and safety standards.
- Prepare documents to be used in legal proceedings, testifying in such proceedings when necessary.
- Provide consultation to organizations or agencies on the application of safety principles, practices, and techniques in the workplace.
- Report the results of environmental contaminant analyses, and recommend corrective measures to be applied.
- Review physicians' reports, and conduct worker studies in order to determine whether specific instances of disease or illness are job-related.
- Review records and reports concerning laboratory results, staffing, floor plans, fire inspections, and sanitation in order to gather information for the development and enforcement of safety activities.
- Supply, operate, and maintain personal protective equipment.
- Test workplaces for environmental hazards such as exposure to radiation, chemical and biological hazards, and excessive noise.
- Verify that safety equipment such as hearing protection and respirators is available to employees, and monitor their use of such equipment to ensure proper fit and use.

#### Detailed Tasks

#### Detailed Work Activities:

- analyze effectiveness of safety systems or procedures
- collect samples for testing
- communicate technical information
- evaluate engineering data
- evaluate manufacturing or processing systems
- examine engineering documents for completeness or accuracy
- explain complex mathematical information
- follow safe waste disposal procedures
- perform safety inspections in industrial, manufacturing or repair setting
- prepare safety reports
- prepare technical reports or related documentation

the laws and regulations affecting fire prevention or fire safety.

- Inspect buildings or building designs to determine fire protection system requirements and potential problems in areas such as water supplies, exit locations, and construction materials.
- Prepare and write reports detailing specific fire prevention and protection issues such as work performed and proposed review schedules.
- Study the relationships between ignition sources and materials to determine how fires start.

#### Detailed Tasks

#### Detailed Work Activities:

- adhere to safety procedures
- advise clients regarding engineering problems
- analyze effectiveness of safety systems or procedures
- analyze technical data, designs, or preliminary specifications
- communicate technical information
- conduct fire hazard inspections
- conduct training for personnel
- design electronic equipment
- determine fire causes
- direct and coordinate fire prevention and suppression activities
- evaluate engineering data
- evaluate governmental regulations or laws
- evaluate manufacturing or processing systems
- explain complex mathematical information
- follow safe waste disposal procedures
- inspect facilities or equipment for regulatory compliance
- make presentations
- perform safety inspections in industrial, manufacturing or repair setting
- prepare technical reports or related documentation
- read blueprints
- read schematics
- read technical drawings
- recommend action to ensure compliance
- record test results, test procedures, or inspection data
- resolve engineering or science problems
- test equipment as part of engineering projects or processes
- understand engineering data or reports
- use chemical testing or analysis procedures
- use drafting or mechanical drawing techniques



## Documentation

- record test results, test procedures, or inspection data
- test air quality, noise, temperature, or radiation
- understand engineering data or reports
- use hazardous materials information
- use knowledge of materials testing procedures
- use pollution control techniques
- use scientific research methodology
- use technical information in manufacturing or industrial activities
- use technical regulations for engineering problems

- use government regulations
- use hazardous materials information
- use intuitive judgment for engineering analyses
- use pollution control techniques
- use scientific research methodology
- use technical information in manufacturing or industrial activities
- use technical regulations for engineering problems
- write product performance requirements

## Tools - Examples

- Accelerometers
- Noise monitoring equipment
- Microbial contaminant measurement devices
- Aerosol sampling devices
- High-flow air sampling pumps
- Velometers
- Heart rate monitors
- Desktop computers
- Digital video recorders
- Digital cameras
- Digital dynamometers
- Magnetic field meters
- Electromyograph processing systems
- Force gauges
- Sorbent tubes
- Heat stress monitors
- Light meters
- Notebook computers
- Volatile organic compound VOC measurement devices
- Portable oxygen consumption meters
- Personal digital assistants PDA
- Discriminative reaction time apparatus
- Potentiometers
- Force platforms



- Radio frequency signal analyzers
- Three-dimensional laser scanners
- Acoustic calibrators
- Respiratory flow rate meters
- Strain gauges
- Sorbent dosimeters
- Temperature probes
- Anthropometers
- Torsionmeters
- Vibration analysis devices

### Labor Market Comparison

Maine Department of Labor.

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Median Wage	\$ 39,170	\$ 49,940	\$ 10,770
10th Percentile Wage	\$ 27,180	\$ 33,890	\$ 6,710
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Projected Employment - 2298	46	107	61
Projected Job Growth - 2006-2298	7.0 %	2.9 %	-4.1 %
Projected Annual Openings - 2006-2298	1	3	2
Special			

Special Occupations:

### National Job Posting Trends

Trend for Occupational Health and Safety Technicians and Industrial Safety and Health Engineers



## Programs

### Related Programs

#### Engineering, General

Engineering, General. A program that generally prepares individuals to apply mathematical and scientific principles to solve a wide variety of practical problems in industry, social organization, public works, and commerce.

Institution	Address	City	URL
Bates College	2 Andrews Road, 2 Lane Hall	Lewiston	<a href="http://www.bates.edu/">www.bates.edu/</a>
Bates College	2 Andrews Road, 2 Lane Hall	Lewiston	<a href="http://www.bates.edu/">www.bates.edu/</a>

#### Environmental/Environmental Health Engineering

Environmental/Environmental Health Engineering. A program that prepares individuals to apply mathematical and scientific principles to the design, development and operational evaluation of systems for controlling contained living environments and for monitoring and controlling factors in the external natural environment, including pollution control, waste and hazardous material disposal, health and safety protection, conservation, life support, and requirements for protection of special materials and related work environments.

No information on schools for the program

#### Occupational Safety and Health Tech./Technician

Occupational Safety and Health Technology/Technician. A program that prepares individuals to apply basic engineering principles and technical skills in support of engineers and other professionals engaged in maintaining job-related health and safety standards. Includes instruction in safety engineering principles, inspection and monitoring procedures, testing and sampling procedures, laboratory techniques, applications to specific work environments, and report preparation.

Institution	Address	City	URL
Central Maine Community College	1250 Turner St	Auburn	<a href="http://www.cmcc.edu">www.cmcc.edu</a>
Central Maine Community College	1250 Turner St	Auburn	<a href="http://www.cmcc.edu">www.cmcc.edu</a>



### Taxation

Taxation. A program that prepares individuals to provide tax advice and management services to individuals and corporations. Includes instruction in tax law and regulations, tax record systems, individual and corporate income taxation, tax planning, partnerships and fiduciary relationships, estates and trusts, property depreciation, capital gains and losses, dispositions, transfers, liquidity, valuation, and applications to specific tax problems.

Institution	Address	City	URL
Thomas College	180 W River Rd	Waterville	<a href="http://www.thomas.edu">www.thomas.edu</a>

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11-9121.00	Natural Sciences Managers	87	5	180	\$79,810.00	\$40,640.00	8%	5	



11-9131.00	Postmasters and Mail Superintendents	87	3	420	\$55,200.00	\$16,030.00	-5%	10	
13-1031.01	Claims Examiners, Property and Casualty Insurance	87	3	1,570	\$49,360.00	\$10,190.00	3%	44	★
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25-1193.00	Recreation and Fitness Studies Teachers, Postsecondary	87	5	60	\$53,100.00	\$13,930.00	8%	2	

Special Occupations:

### Top Industries for Industrial Safety and Health Engineers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Nonresidential building construction	236200	8.08%	2,051	2,298	12.05%
State government, excluding education and hospitals	929200	5.23%	1,327	1,302	-1.87%
Management, scientific, and technical consulting services	541600	5.05%	1,282	2,289	78.52%
Local government, excluding education and hospitals	939300	4.60%	1,166	1,310	12.34%
Basic chemical manufacturing	325100	3.61%	916	772	-15.67%
Management of companies and enterprises	551100	3.22%	818	943	15.28%
Support activities for mining	213100	3.13%	793	746	-5.93%
Research and development in the physical, engineering, and life sciences	541710	2.83%	718	766	6.69%
Pharmaceutical and medicine manufacturing	325400	2.49%	632	796	26.03%
Highway, street, and bridge construction	237300	2.45%	623	670	7.66%
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	325200	2.44%	620	498	-19.73%
Federal government, excluding postal service	919999	2.42%	613	580	-5.47%
Aerospace product and parts manufacturing	336400	2.37%	602	613	1.84%
Power and communication line and related structures construction	237130	1.79%	455	479	5.20%
General medical and surgical hospitals, public and private	622100	1.75%	443	491	10.71%



### Top Industries for Occupational Health and Safety Technicians

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Local government, excluding education and hospitals	939300	16.38%	1,715	1,926	12.34%
Colleges, universities, and professional schools, public and private	611300	9.98%	1,045	1,169	11.87%
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General medical and surgical hospitals, public and private	622100	9.16%	959	1,062	10.71%
State government, excluding education and hospitals	929200	6.20%	649	636	-1.87%
Employment services	561300	4.80%	503	636	26.56%
Support activities for mining	213100	4.15%	435	409	-5.93%
Electric power generation, transmission and distribution	221100	3.01%	315	290	-8.03%
Federal government, excluding postal service	919999	2.19%	229	216	-5.46%
Management of companies and enterprises	551100	1.65%	173	199	15.28%
Research and development in the physical, engineering, and life sciences	541710	1.65%	173	184	6.68%
Office administrative services	561100	1.23%	128	163	26.79%
Aerospace product and parts manufacturing	336400	0.83%	87	89	1.85%
Semiconductor and other electronic component manufacturing	334400	0.70%	73	64	-12.60%
Animal slaughtering and processing	311600	0.67%	70	80	14.12%



# TORQ Analysis of Occupational Health and Safety Technicians to Emergency Management Specialists

## ANALYSIS INPUT

Transfer	Title	O*NET	Filters		
From Title:	Occupational Health and Safety Technicians	29-9012.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Emergency Management Specialists	13-1061.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

## TORQ RESULTS

Grand TORQ:

91

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	94	Level	90	Level	89

Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Fluency of Ideas	62	18	65	Coordination	77	11	84	Law and Government	77	9	75
Speech Recognition	57	15	75	Judgment and Decision Making	68	5	72	Administration and Management	60	8	81
Originality	59	17	65	Service Orientation	66	2	73	English Language	78	8	77
Deductive Reasoning	60	10	72					Personnel and Human Resources	53	3	84
Near Vision	59	9	65								
Problem Sensitivity	62	7	78								
Speech Clarity	60	7	78								
Speed of Closure	44	10	53								
Written Expression	60	7	75								
Written Comprehension	60	7	72								
Inductive Reasoning	57	7	68								
Oral Expression	64	5	78								
Information Ordering	53	5	68								
Far Vision	51	5	56								
Category Flexibility	50	4	62								
Oral Comprehension	62	3	78								
Perceptual Speed	44	3	50								



LEVEL and IMPT (IMPORTANCE) refer to the Target Emergency Management Specialists. GAP refers to level difference between Occupational Health and Safety Technicians and Emergency Management Specialists.

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Occupational Health and Safety Technicians	Emergency Management Specialists	Importance
Oral Comprehension	59	62	78
Oral Expression	59	64	78
Problem Sensitivity	55	62	78
Speech Clarity	53	60	78
Written Expression	53	60	75
Speech Recognition	42	57	75
Written Comprehension	53	60	72
Deductive Reasoning	50	60	72
Inductive Reasoning	50	57	68
Information Ordering	48	53	68
Fluency of Ideas	44	62	65
Originality	42	59	65
Near Vision	50	59	65
Category Flexibility	46	50	62
Selective Attention	44	44	59
Far Vision	46	51	56
Speed of Closure	34	44	53
Flexibility of Closure	46	44	50
Perceptual Speed	41	44	50
Skill Level Comparison - Abilities with importance scores over 69			
Description	Occupational Health and Safety Technicians	Emergency Management Specialists	Importance
Coordination	66	77	84
Service Orientation	64	66	73
Judgment and Decision Making	63	68	72
Knowledge Level Comparison - Knowledge with importance scores over 69			
Description	Occupational Health and Safety Technicians	Emergency Management Specialists	Importance
Personnel and Human Resources	50	53	84
Administration and Management	52	60	81



English Language	70	78	77
Law and Government	68	77	75

### Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Occupational Health and Safety Technicians	Emergency Management Specialists	Description	Occupational Health and Safety Technicians	Emergency Management Specialists
10+ years	0%	15%	Doctoral	0%	0%
8-10 years	0%	10%	Professional Degree	0%	0%
6-8 years	4%	2%	Post-Masters Cert	0%	0%
4-6 years	16%	13%	Master's Degree	0%	2%
2-4 years	50%	30%	Post-Bachelor Cert	8%	6%
1-2 years	20%	4%	Bachelors	29%	43%
6-12 months	8%	15%	AA or Equiv	33%	3%
3-6 months	0%	1%	Some College	16%	31%
1-3 months	0%	0%	Post-Secondary Certificate	4%	1%
0-1 month	0%	0%	High School Diploma or GED	8%	7%
None	0%	7%	No HSD or GED	0%	3%

Occupational Health and Safety Technicians	Emergency Management Specialists
Most Common Educational/Training Requirement:	
	Work experience in a related occupation
Job Zone Comparison	
-	4 - Job Zone Four: Considerable Preparation Needed A minimum of two to four years of work-related skill, knowledge, or experience is needed for these occupations. For example, an accountant must complete four years of college and work for several years in accounting to be considered qualified. Most of these occupations require a four - year bachelor's degree, but some do not. Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

### Tasks

Occupational Health and Safety Technicians	Emergency Management Specialists
Core Tasks	Core Tasks
Generalized Work Activities:	Generalized Work Activities:
<ul style="list-style-type: none"> <li>Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.</li> <li>Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.</li> </ul>	<ul style="list-style-type: none"> <li>Communicating with Persons Outside Organization - Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or e-mail.</li> <li>Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates</li> </ul>



- Establishing and Maintaining Interpersonal Relationships - Developing constructive and cooperative working relationships with others, and maintaining them over time.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.
- Training and Teaching Others - Identifying the educational needs of others, developing formal educational or training programs or classes, and teaching or instructing others.

#### Specific Tasks

##### Occupation Specific Tasks:

- Conduct fire drills, and inspect fire suppression systems and portable fire systems to ensure that they are in working order.
- Conduct interviews to obtain information and evidence regarding communicable diseases or violations of health and sanitation regulations.
- Confer with school and state authorities and community groups to develop health standards and programs.
- Educate the public about health issues, and enforce health legislation in order to prevent disease, to promote health, and to help people understand health protection procedures and regulations.
- Evaluate situations where a worker has refused to work on the grounds that danger or potential harm exists, and determine how such situations should be handled.
- Examine credentials, licenses, or permits to ensure compliance with licensing requirements.
- Help direct rescue and firefighting operations in the event of a fire or an explosion.
- Maintain all required records and documentation.
- Maintain logbooks of daily activities, including areas visited and activities performed.
- Plan emergency response drills.
- Prepare and calibrate equipment used to collect and analyze samples.
- Prepare and review specifications and orders for the purchase of safety equipment, ensuring that proper features are present and that items conform to health and safety standards.
- Prepare documents to be used in legal proceedings, testifying in such proceedings

by telephone, in written form, e-mail, or in person.

- Establishing and Maintaining Interpersonal Relationships - Developing constructive and cooperative working relationships with others, and maintaining them over time.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.

#### Specific Tasks

##### Occupation Specific Tasks:

- Apply for federal funding for emergency management related needs; administer such grants and report on their progress.
- Attend meetings, conferences, and workshops related to emergency management in order to learn new information and to develop working relationships with other emergency management specialists.
- Collaborate with other officials in order to prepare and analyze damage assessments following disasters or emergencies.
- Conduct surveys to determine the types of emergency-related needs that will need to be addressed in disaster planning, or provide technical support to others conducting such surveys.
- Consult with officials of local and area governments, schools, hospitals, and other institutions in order to determine their needs and capabilities in the event of a natural disaster or other emergency.
- Coordinate disaster response or crisis management activities such as ordering evacuations, opening public shelters, and implementing special needs plans and programs.
- Design and administer emergency/disaster preparedness training courses that teach people how to effectively respond to major emergencies and disasters.
- Develop and implement training procedures and strategies for radiological protection, detection, and decontamination.
- Develop and maintain liaisons with municipalities, county departments, and similar entities in order to facilitate plan development, response effort coordination, and exchanges of personnel and equipment.
- Develop and perform tests and evaluations of emergency management plans in accordance with state and federal regulations.
- Develop instructional materials for the public, and make presentations to citizens' groups in order to provide information on emergency plans and their implementation process.



when necessary.

- Provide consultation to organizations or agencies on the application of safety principles, practices, and techniques in the workplace.
- Report the results of environmental contaminant analyses, and recommend corrective measures to be applied.
- Review physicians' reports, and conduct worker studies in order to determine whether specific instances of disease or illness are job-related.
- Review records and reports concerning laboratory results, staffing, floor plans, fire inspections, and sanitation in order to gather information for the development and enforcement of safety activities.
- Supply, operate, and maintain personal protective equipment.
- Test workplaces for environmental hazards such as exposure to radiation, chemical and biological hazards, and excessive noise.
- Verify that safety equipment such as hearing protection and respirators is available to employees, and monitor their use of such equipment to ensure proper fit and use.

#### Detailed Tasks

##### Detailed Work Activities:

- analyze effectiveness of safety systems or procedures
- collect samples for testing
- communicate technical information
- evaluate engineering data
- evaluate manufacturing or processing systems
- examine engineering documents for completeness or accuracy
- explain complex mathematical information
- follow safe waste disposal procedures
- perform safety inspections in industrial, manufacturing or repair setting
- prepare safety reports
- prepare technical reports or related documentation
- record test results, test procedures, or inspection data
- test air quality, noise, temperature, or radiation
- understand engineering data or reports
- use hazardous materials information
- use knowledge of materials testing procedures
- use pollution control techniques
- use scientific research methodology
- use technical information in manufacturing or industrial activities
- use technical regulations for engineering problems

- Inspect facilities and equipment such as emergency management centers and communications equipment in order to determine their operational and functional capabilities in emergency situations.
- Inventory and distribute nuclear, biological, and chemical detection and contamination equipment, providing instruction in its maintenance and use.
- Keep informed of activities or changes that could affect the likelihood of an emergency, as well as those that could affect response efforts and details of plan implementation.
- Keep informed of federal, state and local regulations affecting emergency plans, and ensure that plans adhere to these regulations.
- Maintain and update all resource materials associated with emergency preparedness plans.
- Prepare emergency situation status reports that describe response and recovery efforts, needs, and preliminary damage assessments.
- Prepare plans that outline operating procedures to be used in response to disasters/emergencies such as hurricanes, nuclear accidents, and terrorist attacks, and in recovery from these events.
- Propose alteration of emergency response procedures based on regulatory changes, technological changes, or knowledge gained from outcomes of previous emergency situations.
- Provide communities with assistance in applying for federal funding for emergency management facilities, radiological instrumentation, and other related items.
- Review emergency plans of individual organizations such as medical facilities in order to ensure their adequacy.
- Study emergency plans used elsewhere in order to gather information for plan development.
- Train local groups in the preparation of long-term plans that are compatible with federal and state plans.

#### Detailed Tasks

##### Detailed Work Activities:

- advise authorities in procedures for radiation incidents or hazards
- conduct training for personnel
- confer with other departmental heads to coordinate activities
- coordinate emergency requests or response units
- determine response needed to dispatch to emergency
- develop policies, procedures, methods, or standards
- direct and coordinate activities of workers or staff
- follow police or emergency radio regulations



problems

- oversee execution of organizational or program policies
- practice emergency firefighting or rescue preparedness procedures
- prepare long term or short term plans
- recognize public safety hazards
- use hazardous disposal techniques
- use hazardous materials information
- use rescue procedures

## Tools - Examples

- Emergency alert notification systems
- Desktop computers
- Hard hats
- Chemical protective clothing
- Chemical protective boots
- Laptop computers
- Personal computers
- Safety gloves
- Radiation detection meters
- Self-contained breathing equipment
- Protective hoods
- Two way radios

### Labor Market Comparison

Maine Department of Labor.

Description	Occupational Health and Safety Technicians	Emergency Management Specialists	Difference
Median Wage	\$ 39,170	\$ 41,790	\$ 2,620
10th Percentile Wage	\$ 27,180	\$ 29,080	\$ 1,900
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 48,450	\$ 60,970	\$ 12,520
90th Percentile Wage	\$ 56,320	\$ 77,270	\$ 20,950
Mean Wage	\$ 40,170	\$ 48,160	\$ 7,990
Total Employment - 2289	40	90	50
Employment Base - 2006	43	90	47
Projected Employment - 2298	46	104	58
Projected Job Growth - 2006-2298	7.0 %	15.6 %	8.6 %



Projected Annual Openings - 2006-2298	1	2	1
Special			
Special Occupations:			

## National Job Posting Trends

Trend for Occupational Health and Safety Technicians and Emergency Management Specialists



Data from [Indeed](http://Indeed.com)

## Programs

### Related Programs

Administrative Assistant/Secretarial Science, Gene

Administrative Assistant and Secretarial Science, General. A program that generally prepares individuals to perform the duties of administrative assistants and/or secretaries and stenographers. Includes instruction in business communications, principles of business law, word processing and data entry, office machines operation and maintenance, office procedures, public relations, secretarial accounting, filing systems and records management, and report preparation.

Institution	Address	City	URL
Central Maine Community College	1250 Turner St	Auburn	<a href="http://www.cmcc.edu">www.cmcc.edu</a>
Central Maine Community College	1250 Turner St	Auburn	<a href="http://www.cmcc.edu">www.cmcc.edu</a>
Eastern Maine Community College	354 Hogan Rd	Bangor	<a href="http://www.emcc.edu">www.emcc.edu</a>
Eastern Maine Community College	354 Hogan Rd	Bangor	<a href="http://www.emcc.edu">www.emcc.edu</a>
Beal College	99 Farm Road	Bangor	<a href="http://bealcollege.edu">bealcollege.edu</a>
Beal College	99 Farm Road	Bangor	<a href="http://bealcollege.edu">bealcollege.edu</a>
Andover College	901 Washington Ave	Portland	<a href="http://WWW.ANDOVERCOLLEGE.edu">WWW.ANDOVERCOLLEGE.edu</a>



Andover College

901 Washington Ave

Portland

[WWW.ANDOVERCOLLEGE.edu](http://WWW.ANDOVERCOLLEGE.edu)

## Community Organization and Advocacy

Community Organization and Advocacy. A program that focuses on the theories, principles, and practice of providing services to communities, organizing communities and neighborhoods for social action, serving as community liaisons to public agencies, and using community resources to furnish information, instruction, and assistance to all members of a community. May prepare individuals to apply such knowledge and skills in community service positions.

No information on schools for the program

## Executive Assistant/Secretary

Executive Assistant/Executive Secretary. A program that prepares individuals to perform the duties of special assistants and/or personal secretaries for business executives and top management. Includes instruction in business communications, principles of business law, public relations, scheduling and travel management, secretarial accounting, filing systems and records management, conference and meeting recording, report preparation, office equipment and procedures, office supervisory skills, and professional standards and legal requirements.

Institution	Address	City	URL
Kennebec Valley Community College	92 Western Ave	Fairfield	<a href="http://www.kvcc.me.edu">www.kvcc.me.edu</a>
Kennebec Valley Community College	92 Western Ave	Fairfield	<a href="http://www.kvcc.me.edu">www.kvcc.me.edu</a>
Northern Maine Community College	33 Edgemont Dr	Presque Isle	<a href="http://www.nmcc.edu">www.nmcc.edu</a>

## Public Administration

Public Administration. A program that prepares individuals to serve as managers in the executive arm of local, state, and federal government; and that focuses on the systematic study of executive organization and management. Includes instruction in the roles, development, and principles of public administration; the management of public policy; executive-legislative relations; public budgetary processes and financial management; administrative law; public personnel management; professional ethics; and research methods.

Institution	Address	City	URL
University of Maine at Augusta	46 University Dr	Augusta	<a href="http://www.uma.maine.edu/">www.uma.maine.edu/</a>
University of Maine at Augusta	46 University Dr	Augusta	<a href="http://www.uma.maine.edu/">www.uma.maine.edu/</a>
University of Maine at Fort Kent	23 University Drive	Fort Kent	<a href="http://www.umfk.maine.edu">www.umfk.maine.edu</a>
University of Maine		Orono	<a href="http://www.umaine.edu/">www.umaine.edu/</a>
University of Maine		Orono	<a href="http://www.umaine.edu/">www.umaine.edu/</a>
University of Maine		Orono	<a href="http://www.umaine.edu/">www.umaine.edu/</a>
University of Maine		Orono	<a href="http://www.umaine.edu/">www.umaine.edu/</a>

## Public Policy Analysis

Public Policy Analysis. A program that focuses on the systematic analysis of public policy issues and decision processes. Includes instruction in the role of economic and political factors in public decision-making and policy formulation; microeconomic analysis of policy issues; resource allocation and decision modeling; cost/benefit analysis; statistical methods; and applications to specific public policy topics.

Institution	Address	City	URL
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University of Southern Maine

96 Falmouth St

Portland

[www.usm.maine.edu](http://www.usm.maine.edu)**Maine Statewide Promotion Opportunities for Occupational Health and Safety Technicians**

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
29-9012.00	Occupational Health and Safety Technicians	100		40	\$39,170.00	\$0.00	7%	1	
29-9011.00	Occupational Health and Safety Specialists	94	5	220	\$62,720.00	\$23,550.00	-2%	4	
17-2111.01	Industrial Safety and Health Engineers	93	4	90	\$49,940.00	\$10,770.00	3%	3	
17-2081.00	Environmental Engineers	92	5	390	\$62,340.00	\$23,170.00	10%	16	
13-1061.00	Emergency Management Specialists	91	4	90	\$41,790.00	\$2,620.00	16%	2	
17-2111.03	Product Safety Engineers	91	5	90	\$49,940.00	\$10,770.00	3%	3	
17-2111.02	Fire-Prevention and Protection Engineers	89	4	90	\$49,940.00	\$10,770.00	3%	3	
25-2032.00	Vocational Education Teachers, Secondary School	89	4	240	\$46,260.00	\$7,090.00	-9%	7	
13-1032.00	Insurance Appraisers, Auto Damage	88	3	40	\$49,950.00	\$10,780.00	5%	1	
11-9121.00	Natural Sciences Managers	87	5	180	\$79,810.00	\$40,640.00	8%	5	
11-9131.00	Postmasters and Mail Superintendents	87	3	420	\$55,200.00	\$16,030.00	-5%	10	
13-1031.01	Claims Examiners, Property and Casualty Insurance	87	3	1,570	\$49,360.00	\$10,190.00	3%	44	★
13-2021.01	Assessors	87	3	390	\$41,840.00	\$2,670.00	8%	20	★



13-2021.02	Appraisers, Real Estate	87	4	390	\$41,840.00	\$2,670.00	8%	20	★
19-2041.00	Environmental Scientists and Specialists, Including Health	87	5	680	\$46,890.00	\$7,720.00	9%	24	

Special Occupations:

### Top Industries for Emergency Management Specialists

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Local government, excluding education and hospitals	939300	52.54%	6,161	6,921	12.34%
State government, excluding education and hospitals	929200	11.28%	1,323	1,298	-1.87%
General medical and surgical hospitals, public and private	622100	6.12%	718	795	10.71%
Community food and housing, and emergency and other relief services	624200	5.80%	681	788	15.80%
Electric power generation, transmission and distribution	221100	4.03%	473	435	-8.03%
Computer systems design and related services	541500	3.35%	393	530	35.02%
Management, scientific, and technical consulting services	541600	2.70%	316	564	78.52%
Colleges, universities, and professional schools, public and private	611300	1.58%	185	207	11.87%
Management of companies and enterprises	551100	1.01%	118	136	15.28%
Psychiatric and substance abuse hospitals, public and private	622200	0.80%	94	74	-21.36%
Other fabricated metal product manufacturing	332900	0.74%	87	77	-11.38%

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Animal slaughtering and processing	311600	0.67%	70	80	14.12%

## Industry & Occupational Data Sources

TORQ Results: The TORQ Scores is based upon an proprietary algorithm applied against Knowledge, Skills and Ability levels and importance derived from O\*NET 12.

ASK Analysis, Experience & Education Levels and Tasks: O\*Net 12

Labor Market Comparisons Occupational Projections data from Maine Department of Labor

National Posting Trends Indeed.com

Labor Pool & Promotions Opportunities: Occupational Projections data from Maine Department of Labor

Top Industries: Occupational Employment Statistics program (U.S. Bureau of Labor Statistics)