

Health and Safety Engineers

SOC: 17-2111 • Career Profile Report

■ Key Facts

\$109,660

Median Salary

23,800

Employment

+4.0%

Growth Rate

■ Requirements & Salary Range

Education: Bachelor's degree

■ Automation Risk Assessment

Low Risk - 17.0% probability of being automated in the next 10-20 years.

This job is relatively safe from automation due to its creative, social, or complex problem-solving requirements.

■■ Work-Life Balance

7.2/10 - Good work-life balance

■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	8.2/10	Investigative	8.8/10
Artistic	6.4/10	Social	5.2/10
Enterprising	5.8/10	Conventional	6.6/10

■ Top Skills Required

Communication skills, Critical-thinking skills, Interpersonal skills, Observational skills, Problem-solving skills

✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

■ Challenges

- Burnout Risk
- Rapid Technological Change

■ What They Do

Health and Safety Engineers develop and implement **procedures and systems to protect people from illness and injury and to ensure compliance with safety regulations**. They analyze workplace hazards, design safety programs, and evaluate environmental and occupational risks. Their work is critical in engineering, manufacturing, construction, and environmental protection.

This career is well suited for individuals who enjoy engineering, problem-solving, and ensuring safety and compliance in the workplace.

What Do Health and Safety Engineers Do?

These professionals design, implement, and monitor safety programs, policies, and equipment.

Common responsibilities include:

- Conducting inspections and risk assessments of workplaces, processes, and equipment
- Developing safety protocols, policies, and training programs
- Investigating accidents and determining root causes
- Evaluating compliance with occupational safety and health regulations
- Collaborating with engineers, managers, and employees to implement safety improvements
- Preparing reports, documentation, and safety analyses
- Recommending engineering solutions to minimize hazards and risks

Key Areas of Health and Safety Engineering

Health and safety engineers may focus on specific hazards, industries, or safety systems:

- Occupational Safety: Identifying workplace hazards and implementing controls
- Environmental Health: Addressing environmental risks, pollution, and chemical safety
- Equipment and Process Safety: Designing safety features for machinery and industrial processes
- Training and Compliance: Educating employees and ensuring regulatory adherence
- Incident Investigation and Reporting: Analyzing accidents and recommending preventative measures

Skills and Abilities Needed

These professionals combine engineering knowledge, analytical skills, and safety expertise.

Core Professional Skills

Personal Qualities That Matter

Education and Career Pathway

This role typically requires formal education and engineering experience:

- Bachelor's Degree (minimum): Engineering, safety engineering, or related field
- Professional Experience: Work in engineering, manufacturing, or occupational safety roles
- Certification (optional but recommended): Safety, environmental, or engineering credentials
- Continuing Education: Staying updated on safety regulations, technology, and engineering practices
- Advanced Opportunities: Specialization in industrial safety, environmental engineering, or management

Where Do Health and Safety Engineers Work?

They are employed in organizations focused on safety, engineering, and environmental management:

- Manufacturing and Industrial Companies
- Construction and Engineering Firms
- Government and Regulatory Agencies

- Research and Safety Consulting Organizations

- Healthcare and Environmental Services

Work environments include offices, industrial sites, laboratories, and field locations.

Is This Career Difficult?

This career requires technical knowledge, analytical thinking, and attention to detail. Engineers must identify hazards, design safety solutions, and ensure compliance with complex regulations.

Who Should Consider This Career?

This career may be a strong fit if you:

- Enjoy engineering, problem-solving, and risk analysis
- Are detail-oriented and safety-conscious
- Have strong analytical and communication skills
- Can work independently and collaboratively
- Want a career that protects people and ensures safe working environments

How to Prepare Early

- Take courses in mathematics, physics, chemistry, and engineering
- Gain experience in safety, engineering, or industrial environments
- Develop skills in risk assessment, problem-solving, and technical analysis
- Explore programs in occupational health, safety engineering, or environmental engineering
- Participate in internships or training in safety and regulatory compliance

Health and safety engineers protect people and the environment by designing, implementing, and monitoring systems that reduce hazards, ensure compliance, and promote safe and healthy workplaces.

*Generated by StartRight • Data from U.S. Bureau of Labor Statistics & O*NET*

Source: <https://www.bls.gov/ooh/architecture-and-engineering/health-and-safety-engineers.htm>