

Domain 1

Advanced Science and Math • 7.4%

Knowledge of:

1. Core concepts in anatomy and physiology
2. Core concepts in chemistry (organic and general chemistry)
3. Core concepts in physics
4. Mathematics (e.g., geometry, algebra, trigonometry)
5. Statistics for interpreting data (e.g., mean, median, mode, confidence intervals, probabilities, pareto analysis)
6. Core research methodology concepts

Skill to:

1. Calculate required containment volumes and hazardous materials storage requirements
2. Calculate statistics from data sources

Domain 2

Management Systems • 19.5%

Knowledge of:

1. Benchmarks and performance standards
2. How to measure, analyze, and improve organizational culture
3. Incident investigation techniques
4. Management of change techniques
5. System safety techniques (e.g., root cause, job safety analysis, fault tree analysis)
6. The elements of business continuity and contingency plans
7. Types of leading and lagging safety, health, environmental, and security performance indicators
8. Safety, health, and environmental management and audit systems (e.g., ANSI/AIHA Z10, ISO 14000 series, OHSAS 18000 series, ISO 19011)
9. Applicable requirements for health plans, programs, and policies
10. Applicable requirements for safety plans, programs, and policies
11. Documentation retention or management principles (e.g., incident investigation, training records, exposure records, maintenance records, environmental management system, audit results)
12. Budgeting, finance, and economic analysis techniques and principles (e.g., timelines, budget development, milestones, resourcing, financing risk management options)
13. Management leadership techniques (e.g., management theories, leadership theories, motivation, discipline, communication styles)
14. Project management concepts and techniques (e.g., RACI charts, project timelines, budgets)

Skill to:

1. Analyze and/or interpret sampling data (e.g., exposure, release concentrations)
2. Apply management principles of authority, responsibility, and accountability
3. Compare management systems with benchmarks
4. Conduct root cause analyses
5. Develop and implement environmental, safety, and health management systems
6. Evaluate and analyze survey data
7. Perform gap analyses
8. Demonstrate business need via financial calculations (e.g., ROI, engineering economy, financial engineering)

Domain 3

Risk Management • 10.3%

Knowledge of:

1. Analysis required to support risk management options
2. Behavior modification techniques
3. Hazard analysis methods
4. The costs and benefits of risk analysis
5. The risk assessment process

Skill to:

1. Apply risk-based decision-making tools for prioritizing risk management options
2. Calculate metrics for organizational risk
3. Conduct job safety analyses and task analyses
4. Explain risk management options and concepts to decision makers, stakeholders, and the public

Domain 4

Advanced Safety Concepts • 22.9%

Knowledge of:

1. Administrative controls (e.g., job rotation, chemical substitution)
2. Chemical process safety management (e.g., pressure relief systems, chemical compatibility, management of change, materials of construction, process flow diagrams)
3. Common workplace hazards (e.g., electrical, falls, confined spaces, lockout/tagout, working around water, caught in, struck by, excavation, welding, hot work, cold and heat stress, combustibles, laser, and others)
4. Engineering controls (e.g., ventilation, guarding, isolation)
5. Facility life safety features (e.g., public space safety, floor loading, occupancy loads)
6. Fleet safety principles (e.g., driver and equipment safety, maintenance, surveillance equipment)
7. Hazardous materials management (e.g., labels, storage, and handling)
8. Insurance/risk transfer principles
9. Multi-employer worksite issues (e.g., contractors, temporary or seasonal employees)
10. Personal protective equipment
11. Principles of safety through design or inherently safer designs (e.g., designing out hazards during design phase)
12. Sources of information on hazards and risk management options (e.g., subject matter experts, relevant best practices, published literature, safety data sheets)
13. The safety design criteria for consumer and industrial products (e.g., UL, NFPA, NIOSH)
14. Tools and equipment safety (e.g., hand tools, ladders, grinders, cranes and other mobile equipment, robotics)
15. Unique workplace hazards (e.g., nanoparticles, combustible dust)

Skill to:

1. Calibrate, use, and maintain data logging, monitoring, and measurement equipment
2. Identify relevant labels, signs, and warnings
3. Interpret plans, specifications, technical drawings, and process flow diagrams

Domain 5

Emergency Preparedness, Fire Prevention, and Security • 9.1%

Knowledge of:

1. Emergency/crisis/disaster response planning (e.g., for nuclear incidents, natural disasters, terrorist attacks, chemical spills, fires)
2. Fire prevention and protection systems
3. Fire suppression systems
4. Incident (e.g., emergency, crisis, disaster) management
5. Transport and security of hazardous materials
6. Workplace violence and harassment recognition and prevention techniques

Domain 6

Occupational Health and Ergonomics • 8.0%

Knowledge of:

1. Basic toxicology principles (e.g., symptoms of an exposure, LD50, mutagens, teratogens)
2. Ergonomics and human factors principles (e.g., visual acuity, body mechanics, patient lifting, vibration, anthropometrics)
3. How to recognize occupational exposures (e.g., hazardous chemicals, radiation, noise, biological agents, heat/cold, infectious diseases, nanoparticles, indoor air quality)
4. How to evaluate occupational exposures (e.g., hazardous chemicals, radiation, noise, biological agents, heat/cold, infectious diseases, ventilation, nanoparticles, indoor air quality), including techniques for measurement, sampling, and analysis
5. How to control occupational exposures (e.g., hazardous chemicals, radiation, noise, biological agents, heat/cold, ventilation, nanoparticles, infectious diseases, indoor air quality)
6. Epidemiology Fundamentals
7. Occupational exposure limits (e.g., hazardous chemicals, radiation, noise, biological agents, heat)

Domain 7

Environmental Management Systems • 6.3%

Knowledge of:

1. Environmental protection and pollution prevention methods (e.g., air pollution, water pollution, soil pollution, containment)
2. Hazardous waste management practices (e.g., segregation and separation, containment, disposal)
3. How released hazardous materials migrate through the air, surface water, soil, and water table
4. Sustainability principles

Domain 8

Training/Education • 9.1%

Knowledge of:

1. Education and training methods and techniques
2. Training requirements
3. Methods for determining the effectiveness of training programs (e.g., determine if trainees are applying training on the job)
4. Effective presentation techniques

Skill to:

1. Perform training needs assessments
2. Develop training programs (e.g., presentation skills, tools)
3. Conduct training
4. Assess training competency
5. Develop training assessment instruments (e.g., written tests, skill assessments) to assess training competency

Domain 9

Law and Ethics • 7.4%

Knowledge of:

1. Legal issues (e.g., tort, negligence, civil, criminal, contracts, disability terminology)
2. Protecting confidential information (e.g., privacy, trade secrets)
3. Standards development processes
4. Ethics related to conducting audits
5. Relationship between labor and management
6. BCSP Code of Ethics

Skill to:

1. Interpret laws, regulations, and consensus codes and standards
2. Apply concepts of BCSP Code of Ethics