EXAMINATION BLUEPRINT
OHST5

Domain 1
Fundamental Math and Science and Business Calculations/Analysis • 9.7%

Knowledge of:

1. Fundamental mathematics (e.g., algebra, ratios, geometry, trigonometry)
2. Fundamental statistics (e.g., mean, median, confidence intervals, distributions, probabilities, sample sizes)
3. Fundamental biology concepts (e.g., anatomy, physiology, basic medical terms, cells, genetic mutations, DNA)
4. Fundamental physics concepts (e.g., force calculations, gravity, energy conversions, acceleration, load distribution, leverage, pulley, friction)
5. Fundamental chemistry concepts (e.g., pH and balancing equations, organic and inorganic, reactivity, corrosive properties, compatibility, periodic table)
6. Basic business financial terminology (e.g., interest rates, loss rates, return on investment, depreciation, opportunity costs, budget, present and future value)
7. Basic concepts related to economic effects of losses (e.g., cost per person, incident, mile, or unit; direct and indirect costs)
8. Benchmarking procedures and standards (e.g., key performance indicators, standard deviation, industry comparisons)
9. Qualitative data collection and analysis (e.g., perception surveys, focus groups)
10. Quantitative measures to track and report performance (e.g., number of audits planned versus completed; training planned versus completed)

Skill to:

1. Calculate performance metrics (e.g., incidence rates, injury rates, key performance indicators)

Domain 2
Safety, Health, and Environmental Programs & Risk Management • 18.3%

Knowledge of:

1. Incident investigation practices or processes
2. Job hazard analysis (e.g., PHA)
3. Differences between leading and lagging indicators and appropriate use of each
4. Audit processes and practices (e.g., follow checklist or flow chart, interview, document findings, verification follow up)
5. Interview techniques for conducting investigations or process improvement
6. When to consult with equipment manufacturers, suppliers, or subject matter experts
7. Relevant international safety, health, environmental and security standards, guidelines, and best practices (e.g., ISO standards)
8. Processes for continuous improvement (e.g., six sigma, lean management systems, streamlining work, product substitution, sustainability, reducing waste)
9. Basic concepts of process safety management
10. Basic concepts of hazardous waste management
11. Globally Harmonized System of Classification and Labeling of Chemicals (GHS) (e.g., labels, safety data sheets, pictograms, signal words)
12. Behavior-based safety principles
13. Fundamental elements of risk analysis techniques (e.g., root cause analysis; requirements of matrix/gap analysis methods)
14. Fundamental risk management concepts (e.g., risk transfer, insure, loss control)

Skill to:

1. Assess external and internal risks to facilities (e.g., property, systems, processes, equipment, and employees)

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Domain 3

Hazard Identification and Control • 31.4%

Knowledge of:

1. Hazardous materials management requirements (e.g., storage, labeling, compatibility, disposal, spill response)
2. Hazards and controls associated with hazardous energy sources
3. Hazards and controls associated with working in hot or cold environments (e.g., heat stress, cold stress)
4. Hierarchy of controls (e.g., elimination, substitution, engineering, administrative, personal protective equipment [PPE])
5. Safety systems/interlocks (e.g., electrical systems, critical support systems, robotics)
6. Hazards and controls associated with working around pressurized systems (e.g., steam systems, hydraulic systems)
7. Unique workplace hazards (e.g., combustible dust, spray booths, dip tanks)
8. Confined space requirements (e.g., identification, permits, entry, rescue)
9. Hazards and controls associated with working at heights or on elevated work platforms (e.g., fall prevention and protection methods; aerial lift, scaffolding, lifts; ladders)
10. Hazards and controls associated with walking/working surfaces (e.g., slips, trips, and falls; stairways)
11. The requirements for operating and inspecting material handling equipment/trucks, including forklifts (e.g., checklists, certifications, competencies, pedestrian safety, battery charging stations)
12. Hazards and controls associated with hand and power tools (e.g., hammers, grinders)
13. Hazards and controls associated with working around moving parts and pinch points (e.g., machine guarding, pulleys)
14. Hazards and controls associated with housekeeping (e.g., materials storage, clutter, staging, fire hazards)
15. Hazards and controls associated with hot work (e.g., welding, burning, cutting, grinding)
16. Safety operations associated with cranes and lifting devices (e.g., pre-operation inspection, checking manufacturer use standards, chain fall, load ratings)
17. Safety procedures associated with hoisting and rigging (e.g., inspection of rigging equipment, load limitations of rigging, use of tag lines)
18. Personal protective equipment (PPE), including types, selection, proper use, storage, maintenance, and inspection
19. Electrical safe work practices (e.g., arc flash protection, temporary power cord safety, ground fault circuit interrupter [GFCI])
20. Hazards and controls associated with excavations (e.g., depth, distance, barricades, spoil pile location, basic soil classifications, access and egress)
21. Safety practices associated with motor vehicle operation (e.g., seat belts, loading docks, chocking of wheels, defensive driving)
22. Safety practices associated with heavy equipment operation (e.g., front-end loaders, backhoes, excavators)
23. Hazards and controls associated with compressed gas storage and use (e.g., fuel gas, oxygen storage, ammonia tanks, liquefied petroleum gas cylinders)
24. Hazards and controls associated with radiation (e.g., types of radiation, half-life calculations, time-distance and shielding, inverse square law, waste disposal)
25. Hazards and controls associated with using technology while working (e.g., distraction caused by use of personal electronic devices, proximity alarm systems, alarm fatigue)
26. Basic components of technical drawings (e.g., units of measurement)
27. Basic components of process flow diagrams (e.g., legend icons)
28. Fundamental building design and construction (e.g., blueprints, ventilation, lighting, layout, flooring, noise, floor load ratings, occupancy ratings)

Domain 4

Health Hazards and Basic Industrial Hygiene • 14.3%

Knowledge of:

1. Basic concepts in ergonomics (e.g., proper lifting techniques, cumulative trauma disorders, neutral posture, workspace design)
2. Lighting requirements for job tasks (e.g., lighting measurements and conversions)
3. Occupational illnesses (e.g., bloodborne pathogens, tuberculosis, dermatitis, hearing loss, asbestosis, silicosis, flu)
4. Hazards and controls associated with noise (e.g., sound level calculations, hearing protection devices, engineering controls)
5. Respiratory hazards and controls (e.g., types of particulates and gases, cartridges and filters, types of respirators, pre-use requirements)
6. Common occupational injuries (e.g., carpal tunnel, amputation, electrocution/shock, repetitive injuries, sprains or strains, lacerations)
7. Acute and chronic occupational exposures and control methods (e.g., latency periods)
8. Hazards and controls associated with biological safety and containment (e.g., levels of lab containment, disposal, biosafety cabinets, ventilation, sharps management)
9. Stress-related conditions and responses (e.g., workplace violence, loss of consciousness)
10. Basic concepts of industrial hygiene sample and indicator media (e.g., colorimetric tubes, pH strips, cyclones)
11. Sampling equipment, applications, and limitations (e.g., light meters, sound level meters, gas meters, sample pumps, dosimeters)
12. Differences between passive and active sampling equipment
13. Principles of medical surveillance and their relevance to health hazards

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Domain 5

Emergency Preparedness, Fire Prevention, and Security • 7.4%

Knowledge of:

1. Techniques for conducting and evaluating the effectiveness of exercises and drills
2. Emergency equipment use, inspection, and required performance tests
3. Organizational and community response plans and integration (e.g., mutual aid agreements, business continuity and community plans, community right-to-know)
4. Disaster/emergency response/crisis planning
5. Emergency systems operations and limitations (e.g., critical equipment operation, types of sprinkler systems)
6. Appropriate selection and use of available emergency response equipment (e.g., fire extinguisher, respirators, decontamination)
7. Emergency response procedures or action plans (e.g., first aid, eye washes, safety showers, cardiopulmonary resuscitation [CPR], automated external defibrillator [AED], bloodborne pathogens, fire extinguishers, emergency exit and re-entry procedures)
8. Incident command system (e.g., roles, structure, importance of)
9. Agents that could be used in terrorist events, including chemical, biological, radiological, nuclear, and explosive agents

Skill to:

1. Participate in emergency response drills and exercises

Domain 6

Organizational Communication and Training/Education • 13.7%

Knowledge of:

1. Basic management principles of authority, responsibility, and accountability (e.g., chain of command, informal leadership)
2. Channels or methods to most appropriately communicate various types of information
3. Types of records that must be retained
4. Basic conflict resolution techniques
5. Basic concepts of adult learning theory
6. Training delivery mediums and technologies (e.g., presentation media, online, classroom, hands-on)
7. Appropriate training for content and audience (e.g., on-the-job training, lecture, demonstration)
8. Methods to evaluate student retention of the learning objectives (e.g., quizzes/tests, skills demonstration)
9. Techniques for evaluating the quality of the training (e.g., surveys, observation)

Skill to:

1. Influence behavior related to safety (e.g., group dynamics, motivation strategies, coaching strategies)
2. Participate in organizational teams
3. Effectively communicate (verbally and in writing) with internal and external stakeholders
4. Develop and deliver effective presentations or trainings

Domain 7

Ethics and Professional Conduct • 5.2%

Knowledge of:

1. Obligation to ensure safety information is understood (e.g., provide interpreter or translated materials)
2. BCSP Code of Ethics
3. Protecting confidential information (e.g., privacy of medical and personally identifiable information, trade secrets)

Skill to:

1. Apply concepts of BCSP Code of Ethics (e.g., obligation to report hazards, environmental, or safety issues; chain of custody of samples and specimens; ethics related to conducting audits)

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