

OHST/CLCS EXAMINATION BLUEPRINT

The OHST/CLCS examination blueprint is based on what safety and loss control specialists do in practice. The chart below provides the details. The top levels, called domains, represent major functions that safety and loss control specialists perform. Within the domains are tasks. Most of the tasks have lists of knowledge and skills required to carry out this task.

DOMAIN 1 Worksite Assessment • 34%	
Task 1 Research information pertaining to the business or operation using appropriate tools and references (e.g., World Wide Web; federal and state regulations; consensus standards; and insurance loss control references) to obtain general risk data.	
Knowledge <ol style="list-style-type: none"> 1. World Wide Web 2. Internet search techniques 3. Computer databases 4. Insurance and loss control references 5. Federal, state, and local regulations (e.g., FDA, OSHA, EPA, and DOT) 6. Standard certifications and approvals (e.g., ANSI, ASTM, NIOSH, NFPA, and API) 7. Basic biological sciences, including toxicology and ergonomics 	Skills <ol style="list-style-type: none"> 1. Using computers and software packages 2. Using Internet search engines 3. Using basic research techniques
Task 2 Evaluate actual business and operations data (e.g., monitoring and surveillance data; OSHA logs; incident reports; safety and health programs; and insurance loss data) by comparing the data against internal history as well as national or industry standards in order to recognize and define risks.	
Knowledge <ol style="list-style-type: none"> 1. Benchmark standards (e.g., TLVs and PELs) 2. Acceptable ratios (e.g., loss ratios, incidence rates, and accident rates) 3. Data sampling procedures 4. Business terminology (e.g., financial terms) 5. Basic mathematics (e.g., algebra and ratios) 6. Spreadsheet, word processor, and database software 	Skills <ol style="list-style-type: none"> 1. Analytical thinking (comparisons) 2. Communicating through talking and writing 3. Using computers and software packages
Task 3 Conduct surveys of the business or operation in accordance with accepted survey methodology (e.g., observing the facility; referring to process flow charts; verifying safety and health systems; programs and documentation; and interviewing employees and management) in order to recognize hazards and controls.	
Knowledge <ol style="list-style-type: none"> 1. Properties of hazardous materials (e.g., basic chemistry and material safety data sheets) 2. Basic machine guarding techniques 3. Survey techniques (e.g., checklist, flow chart, and interviewing techniques) 4. Basic building design and construction (e.g., blueprints and major systems) 5. Behavioral science, including human factors 6. Sampling techniques (e.g., air sampling and noise monitoring) 7. Fire prevention and suppression equipment 8. Safety and health regulations and best practices 9. Life safety standards 10. Basic biological sciences, including toxicology and ergonomics 	Skills <ol style="list-style-type: none"> 1. Conducting interviews 2. Calibrating test equipment 3. Surveying facilities and operations 4. Reading blueprints 5. Measuring building dimensions 6. Computing sample sizes and interpreting data
Task 4 Communicate the results of surveys to management with appropriate documentation in order to educate management about risks and to recommend and justify appropriate actions for managing current and potential loss scenarios.	
Knowledge <ol style="list-style-type: none"> 1. Federal, state, and local regulations (e.g., FDA, OSHA, EPA, and DOT) 2. Basic cost-benefit analysis 3. Organizational types and structures 4. Typical communication channels 	Skills <ol style="list-style-type: none"> 1. Communicating through talking and writing 2. Interpreting regulations 3. Operating within the corporate environment

DOMAIN 2
Hazard Control and Loss Prevention • 31%

Task 1	
Evaluate risks using established analytical techniques in order to prioritize corrective actions.	
Knowledge <ol style="list-style-type: none"> 1. Formulas (e.g., mathematical, scientific, and statistical) 2. Problem solving techniques 3. Federal, state, and local regulations (e.g., FDA, OSHA, EPA, and DOT) 4. Industry standards and best practices 5. Internal standards 6. Basic biological sciences, including toxicology and ergonomics 7. Basic life and physical sciences 8. Basic health concepts 	Skills <ol style="list-style-type: none"> 1. Interpreting exposure limits 2. Reading material safety data sheets 3. Thinking critically
Task 2	
Select hazard control measures by reviewing available options and choosing the most appropriate in order to manage risk.	
Knowledge <ol style="list-style-type: none"> 1. Federal, state, and local regulations (e.g., FDA, OSHA, EPA, and DOT) 2. Industry standards and best practices 3. Industrial processes 4. Administrative controls 5. Personal protective equipment 6. Engineering controls 7. Hierarchy of controls 8. Basic ventilation 9. Basic machine guarding techniques 10. Basic life and physical sciences 11. Basic engineering concepts 12. Basic ventilation measurement 	Skills <ol style="list-style-type: none"> 1. Selecting personal protective equipment 2. Thinking critically
Task 3	
Communicate the identified hazard control measures (e.g., recommend engineering, administrative, and personal protective equipment controls) by identifying essential resources and implementation strategies in order to manage risk.	
Knowledge <ol style="list-style-type: none"> 1. Organizational types and structures 2. Strategies for prioritization of risks, hazard control measures, etc. 3. Necessary financial resources 4. Basic cost-benefit analysis 5. Basic financial terminology 6. Safety and health programs 	Skills <ol style="list-style-type: none"> 1. Communicating through talking and writing 2. Negotiating 3. Presenting 4. Teaching
Task 4	
Assist with the implementation of controls as appropriate (e.g., organize committees; plan, conduct or provide training; maintain records; collect data; collaborate with contractors; select equipment; and manage respirator, confined space entry, lock out/tag out, and other safety and health programs) in order to manage risk.	
Knowledge <ol style="list-style-type: none"> 1. OSHA record keeping 2. Safety and health programs 3. Protocols for the calibration, maintenance, and use of sampling/monitoring equipment 4. Effective training solutions 5. Industry standards 	Skills <ol style="list-style-type: none"> 1. Organizing 2. Managing projects 3. Interpreting analytical data 4. Influencing and persuading others 5. Training 6. Researching and gaining access to documents 7. Calibrating, maintaining, and using sampling/monitoring equipment

DOMAIN 3
Verification • 17%

Task 1

Verify that recommended hazard controls are implemented using management and evaluation techniques (e.g., site surveys, review of records, audits, interviews with key personnel, and follow up with the responsible individuals) in order to ensure risks are adequately managed.

Knowledge

1. Federal, state, and local regulations (e.g., FDA, OSHA, EPA, and DOT)
2. Standard certifications and approvals (e.g., ANSI, ASTM, NIOSH, NFPA, and API)
3. Industry standards and best practices
4. Properties of hazardous materials (e.g., basic chemistry and material safety data sheets)
5. Behavioral science, including human factors
6. Material safety data sheets
7. Basic life and physical sciences
8. Organizational types and structures
9. Types of and methods for conducting audits (e.g., internal and regulatory)

Skills

1. Conducting interviews
2. Listening actively
3. Using computers and software packages
4. Conducting verification audits and site surveys
5. Communicating through talking and writing

Task 2

Investigate incidents, accidents, and near misses using established techniques in order to determine root causes and formulate or update corrective action plans.

Knowledge

1. Basic elements of risk analysis (e.g., failure mode and effects analysis, fault tree analysis, and root cause analysis)
2. Federal OSHA techniques for computing incidence rates
3. Hazard controls (e.g., engineering controls, administrative controls, and personal protective equipment)
4. Investigative techniques
5. Basic life and physical sciences
6. Basic mathematics (e.g., algebra and ratios)

Skills

1. Computing incidence rates using federal OSHA techniques
2. Conducting interviews
3. Listening actively
4. Communicating through talking and writing

Task 3

Assess the effectiveness of specified hazard controls by analyzing performance data (e.g., records, loss data, incidence rates, environmental samples, and incident reports) in order to ensure risks are adequately managed.

Knowledge

1. Industrial hygiene sampling techniques
2. Industry (e.g., NAISS, BLS) incidence rates
3. Federal, state, and local regulations (e.g., FDA, OSHA, EPA, and DOT)
4. Standard certifications and approvals (e.g., ANSI, ASTM, NIOSH, NFPA, and API)
5. Types of medical surveillance
6. Basic life and physical sciences
7. Basic statistics

Skills

1. Using sampling protocols
2. Calibrating, maintaining, and using sampling/monitoring equipment
3. Computing sampling volumes
4. Computing and interpreting statistical analyses

DOMAIN 4
Disaster Planning and Emergency Response • 14%

Task 1

Identify catastrophic and emergency response scenarios (e.g., fires/explosions, natural disasters, chemical releases, terrorism, and medical emergencies) using established techniques in order to anticipate risks.

<p>Knowledge</p> <ol style="list-style-type: none"> 1. Consensus standards (e.g., NFPA) 2. Federal, state, and local regulations (e.g., FDA, OSHA, EPA, and DOT) 3. Material safety data sheets 4. Modeling development 5. Local, regional, and federal resources (e.g., civil defense, FEMA, local fire and police, medical facilities) 6. Characteristics of emergencies and natural disasters 7. Behavioral science, including human factors 8. System failures 9. Prior analyses conducted at the facility 10. Physical and electronic security 	<p>Skills</p> <ol style="list-style-type: none"> 1. Basic modeling 2. Performing basic risk assessments 3. Identifying risk
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Task 2

Evaluate scenarios using established techniques in order to characterize the probability and severity of occurrence.

<p>Knowledge</p> <ol style="list-style-type: none"> 1. Basic risk assessment 2. Basic cost-benefit analysis 3. Organizational types and structures 4. Basic mathematics (e.g., algebra and ratios) 5. Basic life and physical sciences 	<p>Skills</p> <ol style="list-style-type: none"> 1. Computing cost-benefit analysis 2. Using statistical analytical techniques 3. Using qualitative analytical techniques
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Task 3

Develop response plans for scenarios by reviewing available options, selecting viable strategies, and documenting action plans in order to ensure appropriate response to disasters and other emergencies.

<p>Knowledge</p> <ol style="list-style-type: none"> 1. Basic fire science 2. Behavioral science, including human factors 3. Basic life and physical sciences 4. Basic mathematics (e.g., algebra and ratios) 5. Properties of hazardous materials (e.g., basic chemistry and material safety data sheets) 6. Common methods of terrorism 7. Emergency equipment and supplies 8. Community response plans 9. Regulations (e.g., Incident Command System) 	<p>Skills</p> <ol style="list-style-type: none"> 1. Communicating through talking and writing 2. Planning and developing disaster plans and emergency response
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Task 4

Recommend administrative and engineering strategies for scenarios through communication with management in order to justify appropriate actions for managing responses to disasters and other emergencies.

<p>Knowledge</p> <ol style="list-style-type: none"> 1. Characteristics of emergencies and natural disasters 2. Basic risk assessment 3. Administrative and engineering disaster response strategies 4. Basic life and physical sciences 5. Mutual aid agreements 6. Organizational types and structures 	<p>Skills</p> <ol style="list-style-type: none"> 1. Communicating through talking and writing 2. Facilitating team process
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DOMAIN 4 (continued)
Disaster Planning and Emergency Response

Task 5

Assist with the implementation of assigned responsibilities for response plans as appropriate (e.g., organize committees, provide training, collaborate with contractors, select equipment, and manage specific programs) in order to ensure appropriate response to disasters and other emergencies.

Knowledge

1. Behavioral science, including human factors
2. Adult learning principles
3. Available emergency equipment
4. Regulatory and consensus standards (e.g., EPA and OSHA)
5. Community response plans

Skills

1. Communicating through talking and writing
2. Facilitating committees
3. Training diverse populations

Task 6

Evaluate the currency and effectiveness of response plans at regularly scheduled intervals by reviewing their applicability for present and emerging conditions (e.g., changes in organizational structure, and new processes or materials) in order to update the plans and ensure appropriate response to disasters and other emergencies.

Knowledge

1. Procedure, process, and equipment evaluation
2. Evaluation of training methods (e.g., exercises, drills, and surveys)
3. Emergency equipment inspection and required performance tests
4. Federal, state, and local regulations (e.g., FDA, OSHA, EPA, and DOT)

Skills

1. Using qualitative analytical techniques
2. Inspecting and using emergency equipment
3. Training diverse populations
4. Conducting and evaluating exercises, drills, and surveys

DOMAIN 5
Professional Responsibility • 4%

Task 1

Apply the Health and Safety Technologist and Technician Code of Ethics.

Task 2

Understand OHST/CLCS disciplinary standards and procedures.

Task 3

Participate in professional development.