# OHST and CLCS Blueprint

## DOMAIN 1 – 31.5%
## Assessing Safety, Health, Environmental and Security Risk

**Task 1**

Research information pertaining to the business or operation using appropriate tools and references to obtain risk data, including catastrophic and emergency response scenarios using established techniques in order to reduce risk.

| Knowledge | Skills |
|---|---|
| 1. Internet search techniques<br>2. Computer databases<br>3. Insurance and loss control references<br>4. Safety and health risks, including chemical, biological, physical hazards, and potential system failures (e.g., fires / explosions, natural disasters, chemical releases, acts of terrorism, workplace violence and medical emergencies, utilities, organizational and process breakdowns).<br>5. Relevant safety, health, environmental and security legislation, standards and guidelines<br>6. Sources of information on hazards, threats and vulnerabilities (e.g., subject matter experts, relevant best practices, published literature, governmental and industry trade practices)<br>7. Characteristics of terrorism, emergencies and natural disasters (e.g., crisis/disaster planning and management)<br>8. Prior analyses conducted (e.g., hazard vulnerability, risk assessment, external audits)<br>9. Security and emergency systems (e.g., access, egress) | 1. Using computers, software packages, and internet search engines<br>2. Critical thinking<br>3. Researching relevant resources (e.g., regulations, mutual assistance, available references, subject matter experts)<br>4. Recognizing external and internal threats (e.g., facilities, systems, processes, equipment and people)<br>5. Evaluating business continuity and contingency plans<br>6. Using security risk and vulnerability assessments<br>7. Consulting and networking with similar entities<br>8. Communicating findings (e.g., verbal, written)<br>9. Performing basic risk assessments<br>10. Understanding emergency systems operations and limitations |

**Task 2**

Evaluate business and operations data (e.g., monitoring and surveillance data; injury and illness statistics; incident reports; safety and health programs; and insurance loss data) by comparing the data against internal history as well as international, national or industry standards to recognize and define risks.

| Knowledge | Skills |
|---|---|
| 1. Benchmark standards (e.g., occupational exposure limits)<br>2. Application of techniques to monitor safety, health, environmental and security performance<br>3. Business terminology (e.g., financial terms)<br>4. Behavioral science, (e.g. human factors, ergonomics)<br>5. Fundamental life and physical sciences<br>6. Fundamental mathematics (e.g., algebra and ratios)<br>7. Computer software (e.g. spreadsheet, databases)<br>8. Fundamental occupational safety and health practice (e.g. chemical, physical and biological hazards and prevention measures) | 1. Analytical thinking (comparisons)<br>2. Communicating effectively (e.g. verbal and written)<br>3. Using computers, software packages and internet search engines |

**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 applicable stakeholders) in order to recognize hazards and controls.

| Knowledge | Skills |
|---|---|
| 1. Fundamental occupational safety and health practice (e.g. chemical, physical and biological hazards and prevention measures)<br>2. Globally Harmonized System (e.g., safety data sheets)<br>3. Hazard analysis (e.g. job hazard or process safety)<br>4. Audit and survey techniques (e.g., checklist, flow chart, and interviewing methods)<br>5. Fundamental building design and construction (e.g., blueprints and major systems)<br>6. Behavioral science, (e.g. human factors, ergonomics)<br>7. Sampling techniques (e.g., air sampling and noise monitoring)<br>8. Standard and best practices (e.g. international, national, industry, trade)<br>9. Life safety standards<br>10. Necessary credentials, licenses, or permits | 1. Interpreting safety data sheets<br>2. Following established audit processes<br>3. Analyzing job tasks and processes<br>4. Utilizing process flow charting<br>5. Conducting interviews with stakeholders<br>6. Calibrating test equipment<br>7. Surveying facilities and operations<br>8. Reading blueprints<br>9. Computing sample sizes and interpreting data |

**Task 4**

Communicate the results of surveys to applicable stakeholders with appropriate documentation / presentations to highlight risks and to recommend and justify appropriate actions for managing current and potential loss scenarios.

| Knowledge | Skills |
|---|---|
| 1. Relevant safety, health and environmental legislation<br>2. Cost-benefit analysis<br>3. Organizational types and structures<br>4. Appropriate communication methods and channels | 1. Communicating effectively (e.g. verbal and written)<br>2. Interpreting regulations<br>3. Operating within the organizational environment |

## OHST and CLCS Blueprint (cont'd)

## DOMAIN 2 – 35.5%
## Hazard Control and Loss Prevention

**Task 1**

Evaluate risks using established analytical techniques to prioritize preventative and corrective actions.

| Knowledge | Skills |
|---|---|
| 1. Safety, health and environmental standards and best practices (e.g. international, national, industry, trade)<br>2. Risk assessment methods and techniques (e.g., monitoring, modeling development and practice scenarios)<br>3. Root cause analysis methods<br>4. Qualitative, quantitative and statistical analysis techniques<br>5. Basic occupational safety, health and environmental protection techniques (e.g. chemical, physical, biological and other process hazards)<br>6. Business continuity and contingency planning<br>7. Techniques to monitor health and safety performance<br>8. Consideration of chemical, biological, fire, explosion, radiological, and weapons of mass destruction and their properties | 1. Critical and objective thinking<br>2. Conducting a basic cost-benefit analysis<br>3. Using risk, security and vulnerability assessment techniques (e.g. root cause analysis)<br>4. Assessing external and internal threats to facilities (e.g., property, systems, processes, equipment and employees)<br>5. Interpreting plans, specifications, technical drawings, and process flow diagrams<br>6. Evaluating life safety features in facilities<br>7. Estimating the risk of human error<br>8. Interpreting occupational exposures (e.g., hazardous chemicals, radiation, noise, biological agents, heat)<br>9. Communicating with subject matter experts (e.g., multidisciplinary teams, internal, external)<br>10. Consulting with equipment manufacturers and commodity suppliers<br>11. Applying qualitative analysis (e.g., perception surveys, interviewing people) |

**Task 2**

Using research, determine appropriate hazard control techniques.

| Knowledge | Skills |
|---|---|
| 1. Risk assessment methods and practice (e.g. hierarchy of controls, root cause analysis methods, risk-based decision-making tools)<br>2. Foundational mathematics and statistics<br>~~3.~~ Elementary occupational health and hygiene practice (e.g. chemical, physical and biological hazards and prevention measures, SDS).<br>4. Management principles of authority, responsibility, and accountability<br>5. Budgeting, finance, and economic analysis techniques<br>6. Education and training methods<br>7. Behavioral science, including human factors | 1. Research control options (e.g., for effectiveness, cost benefit and feasibility)<br>2. Recommend and implement effective controls<br>3. Develop procedures that incorporate risk management controls (e.g., safety, health, environmental, and security plans, programs, and policies)<br>4. Assist with interpreting plans, specifications, technical drawings, and process flow diagrams<br>5. Organizing chemical process safety information<br>6. Determining hazardous materials storage requirements<br>7. Selecting appropriate personal protective equipment<br>8. Using sampling and measurement devices<br>9. Communicating with subject matter experts<br>10. Consulting with equipment manufacturers and commodity suppliers<br>11. Interviewing people |

**Task 3**

Communicate the hazard control measures by identifying essential resources and implementation strategies to manage risk.

| Knowledge | Skills |
|---|---|
| 1. Basic methods of training (e.g., adult learning theories, delivery and evaluation methods, presentation media, strategies and technologies)<br>2. Group dynamics (e.g. interpersonal communications with contractors, temporary employees, visitors organized labor/management relations, organizational stakeholders, and employee participation committees)<br>3. Public and risk communication techniques (e.g. Information security and confidentiality requirements)<br>4. Basic cost-benefit analysis and financial terminology | 1. Assisting with explaining risk concepts and management options to organizational stakeholders and the public<br>2. Encouraging participation in risk management processes<br>3. Influencing organizational stakeholder behavior<br>4. Conducting effective motivational training presentations and developing lesson plans<br>5. Resolving conflicts<br>6. Soliciting organizational stakeholder feedback<br>7. Working with organized labor unions and management<br>8. Leading and organizing teams<br>9. Communicating with subject matter experts<br>10. Interviewing people |

**Task 4**

Implement and evaluate appropriate controls to manage risk

| Knowledge | Skills |
|---|---|
| 1. Specific risk control measures (e.g. environmental, safety, security and health programs)<br>2. Organizational human dynamics<br>3. Maintenance of records and data collection<br>4. Techniques of health and safety performance<br>5. Protocols for the calibration, maintenance, and use of sampling/monitoring equipment<br>6. Disaster and emergency response strategies (e.g. mutual aid agreements, response leadership and development, command system structures and operations, business continuity and community plans, emergency response equipment and supplies)<br>7. Emergency response planning, strategy and leadership development<br>8. Behavioral science, including human factors<br>9. Basic life, physical and environmental sciences<br>10. Properties of hazardous materials and response (e.g., , fire, chemical, biological, radiological) | 1. Applying basic management principles of authority, responsibility, and accountability<br>2. Planning, developing and implementing disaster/emergency response/crisis plans<br>3. Leading people and facilitating team process<br>4. Audience specific report writing<br>5. Motivating project stakeholders<br>6. Resolving conflicts<br>7. Organizing, facilitating and documenting committee activities<br>8. Calibrating, maintaining, and using sampling/monitoring equipment |

## OHST and CLCS Blueprint (cont'd)

## DOMAIN 3 – 33%
## Verification and Continuous Improvement

**Task 1**

Verify the implementation and effectiveness of hazard control measures (e.g., site surveys, review of records, audits, interviews with key personnel, and follow up with the responsible individuals) to manage risks.

| Knowledge | Skills |
|---|---|
| 1. Relevant safety and health legislation (e.g. international, national, industry, trade)<br>2. Standard and best practices conformance (e.g., national, industry, trade)<br>3. Fundamental occupational health and hygiene practice (e.g., chemical, physical and biological hazards and prevention measures).<br>4. Behavioral science, including human factors<br>5. Fundamental life, biological, health and physical sciences<br>6. Organizational types and structures<br>7. Audit methodology (e.g., internal and standards based)<br>8. Necessary credentials, licenses, or permits<br>9. Leading indicators (e.g., inspection frequency, number of safety interventions, employee performance evaluations, training frequency, near miss/near hit reporting)<br>10. Lagging indicators (e.g., incidence rates, direct costs of incidents)<br>11. Industrial hygiene sampling techniques<br>12. Application of techniques to monitor safety, health and environmental performance<br>13. Types of medical surveillance<br>14. Fundamental statistics<br>15. Gap analysis methodology | 1. Conducting interviews<br>2. Using computers, software packages and internet search engines<br>3. Conducting verification audits and site surveys<br>4. Communicating effectively (e.g., verbal and written)<br>5. Reviewing compliance documents<br>6. Applying and trending leading and lagging indicators<br>7. Calibrating, maintaining, and using sampling/monitoring equipment<br>8. Computing and interpreting statistical analysis<br>9. Utilizing quantitative measures to track and report performance (e.g., audits planned vs. completed; training planned vs. completed)<br>10. Identifying and implementing areas for continuous improvement<br>11. Reviewing and interpreting gap analysis data |

**Task 2**

Investigate incidents, accidents, and near misses using established techniques to determine root causes, identify trends and improve corrective action plans.

| Knowledge | Skills |
|---|---|
| 1. Fundamental elements of risk analysis (e.g., failure mode and effects analysis, fault tree analysis, and root cause analysis)<br>2. Hazard controls (e.g., engineering controls, administrative controls, and personal protective equipment)<br>3. Accident investigation, recording and reporting<br>4. Behavioral science, including human factors<br>5. Fundamental occupational health and hygiene practices (e.g., chemical, physical and biological hazards and prevention measures)<br>6. Fundamental life and physical sciences<br>7. Fundamental mathematics (e.g., algebra and ratios) | 1. Computing incident rates<br>2. Interpreting analytical data<br>3. Conducting risk analysis<br>4. Leading people and facilitating team processes<br>5. Conducting interviews<br>6. Facilitating group discussions<br>7. Communicating effectively (e.g., verbal and written) |

**Task 3**

Implement assigned responsibilities for response plans (e.g., organize tactical teams, provide training, collaborate with contractors, select equipment, and manage specific programs) to respond to disasters and other emergencies.

| Knowledge | Skills |
|---|---|
| 1. Selection and use of available emergency response equipment<br>2. Use of emergency response techniques<br>3. Use of management principles of authority, responsibility, and accountability<br>4. Knowledge of organizational and community response plans and integration<br>5. Organizational and community demographics and relations | 1. Using the Incident Command System and knowledge of the roles<br>2. Developing emergency response training<br>3. Using emergency response monitoring and measurement equipment and controls<br>4. Utilizing project management tools (e.g., tracking schedules)<br>5. Conducting research of available resources |

**Task 4**

Evaluate the compliance and implementation 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) to improve the plans.

| Knowledge | Skills |
|---|---|
| 1. Procedure, process, and equipment evaluation<br>2. Economic effects of losses (e.g., cost per person, incident, mile, personal protective equipment)<br>3. Evaluation of training methods (e.g., exercises, drills, and surveys)<br>4. Emergency equipment inspection and required performance tests<br>5. Government regulations<br>6. Gap analysis methodology | 1. Conducting and evaluating exercises, drills, and surveys using qualitative and quantitative analytical techniques (e.g., post incident or drill analysis)<br>2. Training evaluation and assessment<br>3. Identifying and implementing areas for continuous improvement<br>4. Inspecting and using emergency equipment<br>5. Reviewing and interpreting gap analysis data |