



19 May 2022

Safety and Occupational Health Office
Headquarters, U.S. Army Corps of Engineers
441 G Street NW, Washington, DC 20314

Docket: COE-2019-0015

The Institute of Hazardous Materials Management [IHMM] is pleased to respond to USACE's request for assistance in the form of data, comments, literature references, or field experiences, to help clarify the policy requirements for implementing Safety and Occupational Health activities for both Corps and contractor personnel.

In this submission, we are providing clarifying information concerning the draft version of the Safety and Health Requirements Manual (EM 385-1-1, April 2022).

1. Page 66 of the draft, under section gg., identifies the definition of a Site Safety and Health Officer [SSHO], and then in subsections 1-4 further refines the definition of an SSHO into component parts; Level 1 SSHO, Level 2 SSHO, Level 3 SSHO, and then Alternate SSHO.
2. Page 68 of the draft contains a "Note" under Section 3, as follows: ***"Note: If the Level 1 SSHO has a safety-related degree, third-party, nationally accredited (e.g., OSHA? ANSI, National Commission for Certifying Agencies (NCCA), Council on Engineering and Scientific Specialty Boards (CESB)) SOH-related certification or designation requiring a minimum of three years of experience to obtain, only three years of experience is needed (e.g., GSP, CSP, CSHM, CIH, SMS, CHST, OHST, STS, CP-12, TSP)."***
3. With regard to the "Note" referenced above, we wish to bring to the attention of the USACE recent developments concerning the "CSHM," or the Certified Safety and Health Manager credential, now owned and administered by the Institute of Hazardous Materials Management. For the past 20 months, IHMM has worked with subject matter experts, psychometricians, and other experts to completely upgrade and strengthen the CSHM credential, as we illustrate in **Attachment One** of this submission.
 - a. The Certified Safety and Health Manager (CSHM) demonstrates the knowledge and skills necessary to understand general and business management principles; apply management systems; apply occupational health and safety, security, and environmental knowledge, principles, and standards; apply to utilize risk identification, management, and controls; and set related goals, objectives, and targets. Safety and

health managers are responsible for ensuring environmental compliance and promoting workplace safety through proper and ongoing leadership. Critical decision-making skills and expertise are needed to effectively address safety, health, and environmental hazards associated with operations and activities.

- b. The CSHM is accredited by the Council on Engineering and Scientific Specialty Boards [CESB], and IHMM is now preparing to submit the new blueprint of the CSHM for accreditation by the American National Standards Institute [ANSI]. The measure of the quality and strength of a certification program is to evaluate its accreditation status. Accreditation is a form of certification for the certifying organization, requiring conformance with strict standards of validity, reliability, and impartiality. A key feature of IHMM credentialing programs, accreditation is essential because of the nature of work performed by IHMM certificants. The management of environment, health and safety issues in the workplace are governed by model regulations from the U.S. Department of Labor, the Occupational Safety and Health Administration, as well as from safety industry best practices regulations. Accredited credentials allow professionals to not only gain knowledge to use and implement these regulations but to be recognized for their competency to properly manage and perform the functions of the profession. We applaud USACE for recognizing excellence in professional credentials such as the CSHM, and further, encourage the recognition of strongly accredited credentials as performed by CESB and ANSI.
 - c. Recertification of Credentials. After recognizing the strength of the content of the credential, and then its accreditation comes the requirements imposed by the certification body for the periodic recertification of the credential. IHMM requires that the CSHM holder recertifies their competency to continue to hold the credential every 5 years based on the contents of the certification blueprint. This ensures USACE and every public and private sector entity that relies on the professionals who hold the CSHM that they are constantly upgrading their skills, knowledge, and abilities in their communities of practice. We strongly recommend that the USACE rely on professional credentials that require recertification based on the certification blueprint at least every 5 years.
4. With regard to the “Note” referenced above, we wish to bring to the attention of the USACE recent developments concerning the “CSMP,” or the Certified Safety Management Practitioner credential, now owned and administered by the Institute of Hazardous Materials Management. For the past 20 months, IHMM has worked with subject matter experts, psychometricians, and other experts to completely upgrade and strengthen the CSMP credential, as we illustrate in **Attachment Two** of this submission.
- a. The Certified Safety Management Practitioner (CSMP) demonstrates the knowledge, skills, and competencies necessary to understand general and business management principles, safety management methods and systems, safety management systems of ISO standards, and utilize risk identification management and hierarchy controls. Safety professionals are responsible for ensuring that employers’ safety management systems remain compliant in the workplace, and follow all applicable legislation for the worker and the workplace.

- b. The CSMP is accredited by the Council on Engineering and Scientific Specialty Boards [CESB], and IHMM is now preparing to submit the new blueprint of the CSMP for accreditation by the American National Standards Institute [ANSI]. The measure of the quality and strength of a certification program is to evaluate its accreditation status. Accreditation is a form of certification for the certifying organization, requiring conformance with strict standards of validity, reliability, and impartiality. A key feature of IHMM credentialing programs, accreditation is essential because of the nature of work performed by IHMM certificants. The management of environment, health and safety issues in the workplace are governed by model regulations from the U.S. Department of Labor, the Occupational Safety and Health Administration, as well as from safety industry best practices regulations. Accredited credentials allow professionals to not only gain knowledge to use and implement these regulations but to be recognized for their competency to properly manage and perform the functions of the profession. We applaud USACE for recognizing excellence in professional credentials such as the CSMP, and further, encourage the recognition of strongly accredited credentials as performed by CESB and ANSI.
 - c. Recertification of Credentials. After recognizing the strength of the content of the credential, and then its accreditation comes the requirements imposed by the certification body for the periodic recertification of the credential. IHMM requires that the CSMP holder recertifies their competency to continue to hold the credential every 5 years based on the contents of the certification blueprint. This ensures USACE and every public and private sector entity that relies on the professionals who hold the CSMP that they are constantly upgrading their skills, knowledge, and abilities in their communities of practice. We strongly recommend that the USACE rely on professional credentials that require recertification based on the certification blueprint at least every 5 years.
5. Page 69 of the draft contains a “Note” under Section 3, as follows: ***Note: If the Level 2 SSHO has a safety-related degree, third-party, nationally accredited (e.g., OSHA? ANSI, National Commission for Certifying Agencies (NCCA), Council on Engineering and Scientific Specialty Boards (CESB)) SOH-related certification or designation requiring a minimum of two years of experience to obtain, only two years of experience is needed (e.g., GSP, CSP, CSHM, CIH, SMS, CHST, OHST, STS, CP-12, TSP).***
 - a. With regard to this “Note,” we encourage USACE, and commend its attention to, the comments we submitted above addressing both the CSHM and CSMP, as well as the accreditation standards and recertification requirements. We further encourage the same standards to be applied to Level 3 SSHO and Alternate SSHO.
6. Page 75 of the draft under Section 2-6, as well as in all other references to “Activity Hazard Analysis Requirements,” as well as generally or specifically cited requirements for hazard mitigation and risk management, we encourage USACE to recognize and make use of the Certified Hazardous Materials Manager [CHMM] credential in addition to the CSHM and CSMP already cited in these comments.

- a. A Certified Hazardous Materials Manager (CHMM) is a professional who has demonstrated, through education, experience, and examination, the ability to identify and assess the risks of hazardous materials, mitigate, or eliminate those risks, and manage their impact on human health and the environment. A CHMM provides proper controls for material handling, transportation, and security throughout the life cycle of hazardous materials, from design and production through storage, recycling, and ultimate disposal. They apply scientific knowledge, engineering technologies, and best management practices in compliance with U.S. regulatory requirements. We illustrate the hazard mitigation and risk management knowledge, skills, and abilities of the CHMM by including the CHMM blueprint in **Attachment Three**.
- b. The CHMM is accredited by the Council on Engineering and Scientific Specialty Boards [CESB], and by the American National Standards Institute [ANSI]. The measure of the quality and strength of a certification program is to evaluate its accreditation status. Accreditation is a form of certification for the certifying organization, requiring conformance with strict standards of validity, reliability, and impartiality. A key feature of IHMM credentialing programs, accreditation is essential because of the nature of work performed by IHMM certificants. The handling and management of hazardous materials and the transport of dangerous goods are governed by model regulations published by the US Environmental Protection Agency, US Department of Transportation, the U.S. Department of Labor, the Occupational Safety and Health Administration, as well as by safety industry best practices regulations. Accredited credentials allow professionals to not only gain knowledge to use and implement these regulations but to be recognized for their competency to properly manage and perform the functions of the profession. We applaud USACE for recognizing excellence in professional credentials such as the CHMM, and further, encourage the recognition of strongly accredited credentials as performed by CESB and ANSI.
- c. Furthermore, under federal regulation 40 CFR § 312.10, the United States Environmental Protection Agency defines the IHMM CHMM as an “[Environmental Professional](#).”
- d. Recertification of Credentials. After recognizing the strength of the content of the credential, and then its accreditation comes the requirements imposed by the certification body for the periodic recertification of the credential. IHMM requires that the CHMM holder recertifies their competency to continue to hold the credential every 5 years based on the contents of the certification blueprint. This ensures USACE and every public and private sector entity that relies on the professionals who hold the CHMM that they are constantly upgrading their skills, knowledge, and abilities in their communities of practice. We strongly recommend that the USACE rely on professional credentials that require recertification based on the certification blueprint at least every 5 years.

7. Training. Throughout the draft, USACE refers to the necessity of receiving training, and IHMM applauds the dedication to training and education as we stand behind and support our credential holders. IHMM has a Foundation, the Hazardous Materials Society [HMS] <https://hazmatsociety.org/> whose reason to exist is principally a focus on the education and training of IHMM's certificants.

Here <https://hazmatsociety.org/education-training/> our certificants can easily find and take an extraordinary range of courses to upgrade and expand their knowledge, skills, and abilities. If there are specific areas where USACE-required training can be made available to IHMM certificants then we are pleased to make these resources available.

IHMM thanks the U.S. Army Corps of Engineers, Department of the Army, U.S. Department of Defense, for the opportunity to submit these comments in Docket: COE-2019-0015, and look forward to working with USACE in the evolution of Manual No. 385-1-1.

About the Institute of Hazardous Materials Management - <https://ihmm.org/>

Founded in 1984, the Institute of Hazardous Materials Management (IHMM), is a not-for-profit organization. IHMM has been protecting the environment and the public's health, safety, and security through the creation of credentials recognizing professionals who have demonstrated a high level of knowledge, expertise, and excellence in the management of hazardous materials, dangerous goods transportation, environmental protection, health, and safety.

*Over 18,000 homeland security, environmental protection, engineering, health sciences, transportation, and public safety professionals have earned IHMM's accredited **Certified Hazardous Materials Manager (CHMM®)** credential. IHMM also administers the **Certified Hazardous Materials Practitioner (CHMP®)**, the **Certified Dangerous Goods Professional (CDGP®)**, and the **Certified Dangerous Goods Trainer (CDGT®)** credentials. IHMM also works with colleges and universities throughout the United States and, to that end, offers the **Student Certified Hazardous Materials Manager (ST/CHMM)** and **Student Associate Safety and Health Manager [ST/ASHM]** credentials. In 2019, IHMM acquired ISHM and now manages the **Certified Safety and Health Manager [CSHM]**, **Certified Safety Management Practitioner [CSMP]**, **Associate Safety and Health Manager [ASHM]**, **Certified School Safety Specialist [CSSS]**, and **Certified School Safety Manager [CSSM]** credentials.*

Here, you may join a unique and exceptional group of professionals who are in the top 1% of their communities of practice.

Respectfully,



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Attachment One

Certification Blueprint for IHMM Credential

Certified Safety and Health Manager [CSHM®]



**CERTIFIED SAFETY AND HEALTH MANAGER® (CSHM®)
EXAMINATION SPECIFICATION (BLUEPRINT)
Effective 2023**

The Certified Safety and Health Manager (CSHM) demonstrates knowledge and skills necessary to understand general and business management principles; apply management systems; apply occupational health and safety, security, and environmental knowledge, principles, and standards; apply to utilize risk identification, management, and controls; and set related goals, objectives, and targets.

Safety and health managers are responsible for ensuring environmental compliance and promoting workplace safety through proper and ongoing leadership. Critical decision-making skills and expertise are needed to effectively address safety, health, and environmental hazards associated with operations and activities.

The CSHM examination is a testing instrument designed to evaluate a candidate's minimal competency in the field of safety and health management. The exam is constructed with two cognitive levels.

- Declarative – requires a candidate to recall and retain knowledge.
- Application - requires a candidate to apply the knowledge to a scenario.

This Specification Blueprint offers guidance to candidates by outlining the domains and tasks covered in the examination. The blueprint reflects the consensus of the profession validated via a survey of what safety and health managers do in practice. The blueprint below describes the testing objectives covered by the examination.

The CSHM Test Specification Blueprint lists below each domain and competencies with tasks given under each domain. A percentage label accompanies each domain in this Specification Blueprint. This percentage represents the proportion of the actual CSHM examination devoted to that domain.



SECTION	DOMAINS AND COMPETENCIES/TASKS	% Of Exam
1	Planning, Leadership, and Employee Involvement	22.13
1.1	Declarative: Describe differences between policies and goals.	
1.2	Declarative: Identify safety and health resource needs including budgeting, certifications, standards, equipment, policies, procedures.	
1.3	Declarative: Identify differences between a union and non-union shop as they relate to safety and health.	
1.4	Procedural: Given a scenario, identify departments or divisions needed to cooperate in safety and health efforts.	
1.5	Procedural: Given a scenario, describe resources used to mitigate risk via policies and recommendations.	
1.6	Declarative: Identify ethical practices within safety and health.	
1.7	Declarative: Identify policies and procedures to increase safety awareness.	
1.8	Declarative: Identify quality principles that apply to safety and health.	
1.9	Declarative: Identify safety and health management systems.	
1.10	Procedural: Given a scenario, identify applicable federal environmental regulations.	
1.11	Procedural: Given a scenario, apply the applicable voluntary-consensus standard.	
1.12	Procedural: Given a scenario, describe the importance of health and safety in the context of an organization.	
2	Communication and Resources	15.51
2.1	Declarative: Identify ways to communicate corporate safety education.	
2.2	Declarative: Identify different educational and training requirements at different levels of the organization.	
2.3	Declarative: Identify barriers to participation.	
2.4	Declarative: Identify key hazards and risks, their categories, and the differences between them.	
2.5	Declarative: Identify core OH&S objectives and key documents.	
2.6	Procedural: Given a scenario, analyze different ways that work gets done to communicate requirements across the enterprise.	
3	Risk Assessment and Control	19.48
3.1	Declarative: Define, analyze, assess, and prioritize risk.	
3.2	Declarative: Identify corrective action.	
3.3	Declarative: Prioritize the effectiveness of control measures.	
3.4	Procedural: Given a scenario, apply the appropriate rating or approval (e.g., UL, ANSI, FM, NIOSH, others).	
3.5	Declarative: Identify the core components of an effective policy.	
4	Operations and Programs	15.02
4.1	Procedural: Given a scenario, identify the appropriate consensus standard (e.g., ISO, ANSI, ASTM, NFPA, etc.).	



4.2	Procedural: Given a scenario, identify compliance management operations and programs (e.g., ISO 45001, ANSI Z10, OHSAS 18001, etc.).	
4.3	Procedural: Given a scenario, identify fire prevention and emergency safety preparedness principles and practices.	
4.4	Procedural: Given a scenario, identify crisis management and business continuity principles and practices in the event of an emergency.	
4.5	Declarative: Identify data storage security principles and practices.	
4.6	Declarative: Identify requirements to manage and keep confidential employee data and documentation.	
4.7	Declarative: Identify soil classifications and the application to work in an excavation.	
4.8	Declarative: Identify control measures for blood-borne pathogens.	
4.9	Procedural: Given a scenario, classify waste according to the hazard(s).	
4.10	Procedural: Given a scenario, determine appropriate air sampling methodologies.	
4.11	Procedural: Given a scenario, determine whether exposure is excessive.	
4.12	Declarative: Identify elements of a process safety management program.	
4.13	Procedural: Given a multi-employer worksite, identify elements of a control program.	
4.14	Procedural: Given a scenario, identify risk factors and controls.	
5	Monitoring and Measurement	11.98
5.1	Declarative: Identify techniques for prioritization of control.	
5.2	Procedural: Given a specific standard, identify the regulatory agency responsible for the standard.	
5.3	Procedural: Given a specific standard, identify whether the standard is mandatory or voluntary.	
5.4	Procedural: Given an initial assessment of existing hazards, identify the most urgent hazard.	
5.5	Procedural: Given safety statistical data, identify unsafe behaviors.	
5.6	Procedural: Given a scenario, determine effective ways to communicate preventive action.	
5.7	Procedural: Given a scenario that utilizes new regulatory information, determine an effective methodology to promote safety for a specific industry.	
5.8	Procedural: Given an audit or different inspections, recommend changes.	
5.9	Procedural: Given a scenario, determine whether a metric is a leading or lagging indicator.	
6	Incident Investigation and Analysis	15.88
6.1	Procedural: Given a scenario, identify causal factors.	
6.2	Procedural: Given an incident investigation scenario, identify corrective action.	
6.3	Procedural: Given a set of injury data, determine priorities.	
6.4	Procedural: Given a scenario, determine whether an incident is recordable or reportable.	



For more information about the Certified Safety and Health Manager (CSHM) certification program, including eligibility requirements and application procedures, see the IHMM [Candidate Handbook](#) available at www.ihmm.org. If you have questions about the CSHM Blueprint, please contact M. Patricia Buley at pbuley@ihmm.org.

Attachment Two

Certification Blueprint for IHMM Credential

Certified Safety Management Practitioner [CSMP®]



**CERTIFIED SAFETY MANAGEMENT PRACTITIONER® (CSMP®)
EXAM SPECIFICATION (BLUEPRINT)
Effective Fourth Quarter of 2022**

The Certified Safety Management Practitioner (CSMP) demonstrates knowledge, skills, and competencies necessary to understand general and business management principles, safety management methods and systems, safety management systems of ISO standards, and utilize risk identification management and hierarchy controls.

Safety professionals are responsible for ensuring that employers' safety management systems remain compliant in the workplace, and follow all applicable legislation for the worker and the workplace.

The CSMP examination is a testing instrument designed to evaluate a candidate's minimal competency in the areas of the blueprint. The exam is constructed with two cognitive levels.

- Declarative – requires a candidate to recall and retain knowledge.
- Application - requires a candidate to apply the knowledge to a scenario.

This Specification Blueprint offers guidance to candidates by outlining the domains and tasks covered in the examination. The blueprint reflects the consensus of the profession validated via a survey of what safety managers do in practice. The blueprint below describes the testing objectives covered by the examination.



The CSMP Specification Blueprint lists below each domain and competencies with tasks given under each domain. A percentage label accompanies each domain in this Specification Blueprint. This percentage represents the proportion of the actual CSMP examination devoted to that domain.

SECTION	DOMAINS AND COMPETENCIES/TASKS	% Of Exam
1	Workplace Safety	24.86
1.1	Declarative: Identify the elements of a written safety policy.	
1.2	Declarative: Identify the elements of the SMART model for setting goals.	
1.3	Declarative: Identify the applicable health and safety resources.	
1.4	Application: Given a scenario or table, describe the differences between leading and lagging indicators.	
1.5	Application: Given a scenario, describe the impacts, either negative or positive, upon worker participation.	
1.6	Application: Given a scenario, determine the need for hazard reporting.	
1.7	Declarative: Describe ways to access safety and health information.	
1.8	Declarative: Identify the positional responsibilities for safety.	
1.9	Application: Given a statistical measure, identify the correct formula.	
1.10	Declarative: Describe different inspectors or inspection personnel who inspect the workplace for safety hazards.	
1.11	Declarative: Identify health hazards.	
1.12	Declarative: Identify safety hazards.	
1.13	Declarative: Identify the correct order of steps to conduct an incident investigation.	
1.14	Declarative: Identify the hazards associated with emergency and non-routine situations.	
1.15	Declarative: Identify workplace hazards.	
1.16	Declarative: Identify the control options and components of a hazard control plan.	
1.17	Application: Given a scenario, describe the appropriate means to confirm control effectiveness.	
1.18	Declarative: Identify the types of general orientation practice or program awareness courses for onboarding in the workplace.	
1.19	Declarative: Differentiate between employer and employee responsibilities.	
1.20	Declarative: Identify the steps needed to implement a workplace safety program.	
1.21	Application: Given a scenario about a workplace safety program shortcoming, describe the opportunities for improvement.	
1.22	Declarative: Identify the elements of effective communication.	
1.23	Declarative: Identify the basic components of drug and alcohol safety program testing (i.e., pre-hire testing, accident testing, post-incident testing; do not include random testing).	
2	Regulatory	14.68
2.1	Application: Given a scenario an injury or illness event, determine recordability	
2.2	Declarative: Identify the appropriate or required first aid kit in the workplace per legislation or hazard analysis.	



2.3	Declarative: Identify the acronyms for standard-setting bodies.	
2.4	Application: Given a regulation or standard, identify whether it is federal/state/province legislation or an industry standard.	
2.5	Application: Given a situation, identify the applicable laws and regulations (local, state/province, federal/national).	
2.6	Declarative: Identify the basic steps of an enforcement or regulatory visit.	
3	General Health and Safety Knowledge	20.83
3.1	Declarative: Identify the elements of the Hierarchy of Controls.	
3.2	Declarative: Identify the various elements of a Safety Management System (ISO, SHARP, VPP, etc.).	
3.3	Declarative: Identify the basic concepts of hazard assessment, job hazard analysis (JHA), or job safety analysis (JSA).	
3.4	Declarative: Identify the four goals of industrial hygiene (anticipate, recognize, evaluate, and control).	
3.5	Declarative: Define basic industrial hygiene terms (e.g., toxicology, absorption, dose, hearing testing, lung testing, etc.).	
3.6	Application: Given an industrial hygiene goal, identify the settings or conditions that require the use of respiratory protection, hearing conservation, or exposure to chemicals.	
3.7	Declarative: Utilize a safety data sheet to determine the hazards and precautions to be taken for a given chemical.	
3.8	Application: Given a situation, select the appropriate personal protective equipment (PPE).	
3.9	Declarative: Identify the various machine guarding standards (ANSI, ASME, etc.) and regulations (local, state, and national).	
3.10	Declarative: Identify the hazards associated with hazardous locations on machines (point of operation, power transmission, etc.) and ways to control employee exposure to the hazards.	
3.11	Application: Given a scenario, apply the lockout and tag-out regulations (local, state, and national).	
3.12	Application: Given a situation, determine the proper use of hand and power tools including minimum safety requirements (guarding, personal protective equipment, ergonomics, etc.).	
3.13	Declarative: Identify the industry standards (ASME, etc.) and regulations (local, state, and national) related to types of slings and lifting equipment.	
3.14	Application: For a given respirator, explain its proper uses and limitations.	
3.15	Declarative: Define electrical terminology. (Volts, amperage, resistance, etc.).	
3.16	Declarative: Identify the causes and effects of electrical shock.	
3.17	Declarative: Identify the appropriate personal protective equipment and tools for use around live electrical equipment.	
3.18	Declarative: Identify the steps to ensure electrical safety. (Lockout, tag out, de-energize, permit to work, barricades; focus on basic terms.)	
3.19	Declarative: Identify the basic requirements for emergency response plan elements for hazardous substances release.	



3.20	Declarative: Identify the hazards associated with compressed gases including flammable gases, LP gas, and welding and cutting gases.	
3.21	Declarative: Identify the basic concepts, safety, and industrial hygiene requirements and regulations related to welding, cutting, brazing, and electric arc welding including basic control methods.	
3.22	Declarative: Identify the various types of cranes and hoists and understands the safety requirements for operating or working around this equipment.	
3.23	Declarative: Describe the concepts of Ionizing and Non-Ionizing Radiation (effects, definitions, eliminate a source of exposure, electric magnetic PPE, signage).	
3.24	Declarative: Identify the health and safety requirements for working with and transporting propane.	
3.25	Declarative: Identify the types of fire protection systems, alarm systems, and fire prevention concepts.	
3.26	Declarative: Identify the safety and regulatory requirements for fall protection, ladder safety, barriers, and use of scaffolds.	
3.27	Declarative: Identify the safety and regulatory requirements for operations of powered industrial trucks (various types) including the requirements for operator training.	
3.28	Declarative: Identify the requirements and standards for warehouse safety including industrial trucks, stacking, walking/working surface, forklift, chocking, training PIT operators.	
3.29	Declarative: Identify the regulations for drinking and potable water and sanitation in workplace settings, i.e., break areas, work areas, lunchroom, first aid station, etc.	
3.30	Declarative: Identify the safety and regulatory requirements for operations of mobile elevated platforms (aerial lifts, boom lifts, harness/fall arrest devices, etc.) including requirements for operator training.	
3.31	Declarative: Identify the adult first aid, CPR, and AED requirements and certification for specific industries.	
3.32	Declarative: Identify the requirements for OSHA 300 record-keeping and other employer-related records for occupational health and safety logs.	
3.33	Application: Given a GHS for a harmful substance, describe the effects of the substance on humans and apply the safety, health, and regulatory requirements for controlling exposure to the substance.	
4	Accident Investigation and Prevention	16.19
4.1	Declarative: Identify the steps to conduct an accident investigation, including who, what, where, when, how, and why.	
4.2	Declarative: Identify the types of accidents that must be reported to OSHA or local authority within a certain time frame, such as loss of eye, amputation, or other serious injury, or death.	
4.3	Declarative: Identify what is an OSHA recordable statistic.	
4.4	Declarative: Identify what is an OSHA non-recordable statistic.	
4.5	Declarative: Identify the available resources that can assist with trainings to help prevent accidents.	
4.6	Declarative: Identify the three steps of posting requirements.	



4.7	Application: Given a scenario, explain the importance of a team effort to conduct an accident investigation.	
4.8	Declarative: Identify the sources for locate previous citations.	
5	Safety Management System Structure	13.69
5.1	Declarative: Identify the safety improvements that should be implemented for the general workplace inspection.	
5.2	Declarative: Identify the elements of a health and safety management system.	
5.3	Application: Given data, calculate the incident rates.	
5.4	Application: Given incident rates, predict the highest probability of an accident occurring.	
5.5	Declarative: Identify the emergency action plans (EAP) for areas of jurisdiction and/or responsibility.	
5.6	Declarative: Identify the need for mutual aid agreements.	
5.7	Application: Given a scenario, describe the importance of management and/or leadership commitment to a safety management program.	
5.8	Declarative: Describe the effect of safety management programs on recordable accidents in the workplace.	
5.9	Declarative: Identify the steps of onboarding or orientation of new employees to the workplace related to HR and Safety and Health.	
5.10	Declarative: Identify the steps of orientation and coordination of vendors/contractors to the workplace related to HR and Safety and Health.	
5.11	Declarative: Describe the union member involvement in the specific/non-specific Health, Safety, and Environment (HSE), and safety management systems.	
6	Professional Standards	9.75
6.1	Declarative: Identify the elements of the IHMM Code of Ethics.	
6.2	Application: Given a scenario, apply the appropriate IHMM Code of Ethics.	
6.3	Declarative: Identify the consequences for violations of the IHMM Code of Ethics.	
6.4	Declarative: Describe the individual legal, moral, and ethical responsibility to the requirements of the IHMM Code of Ethics.	
6.5	Declarative: Identify the IHMM committee that is responsible for oversight of the IHMM Code of Ethics.	

For more information about the Certified Safety Management Practitioner (CSMP) certification program, including eligibility requirements and application procedures, see the IHMM [Candidate Handbook](#) available at www.ihmm.org. If you have questions about the CSMP Blueprint, please contact M. Patricia Buley at pbuley@ihmm.org.

Attachment Three

Certification Blueprint for IHMM Credential

Certified Hazardous Materials Manager [CHMM®]



CERTIFIED HAZARDOUS MATERIALS MANAGER (CHMM®) EXAM SPECIFICATIONS (BLUEPRINT)

Effective 2021

A Certified Hazardous Materials Manager (CHMM) is a professional who has demonstrated, through education, experience and examination, the ability to identify and assess the risks of hazardous materials, mitigate, or eliminate those risks, and manage their impact on human health and the environment.

A CHMM provides proper controls for material handling, transportation, and security throughout the life cycle of hazardous materials, from design and production through storage, recycling, and ultimate disposal. They apply scientific knowledge, engineering technologies, and best management practices in compliance with U.S. regulatory requirements.

The CHMM examination is a testing instrument designed to evaluate candidate's minimal competency in the field of hazardous materials management. This Specification Blueprint is intended to offer guidance to candidates by outlining the domains and tasks that will be covered on the examination. The blueprint reflects the consensus of the profession validated via a survey of what hazardous materials managers do in practice. The Blueprint below describes the subject matter covered by the examination. All test items will be drawn from among the domain areas of the Specification Blueprint.

This Specification Blueprint lists below each domain and competencies with tasks given under each domain. A percentage label accompanies each domain in this Specification Blueprint. This percentage represents the proportion of the actual CHMM examination devoted to that domain. Tasks provide reference for activities conducted under each domain.

DOMAINS AND COMPETENCIES/TASKS	% of Exams
1 Planning for Materials with Hazards	9.35
1.1 Identify hazardous materials by name.	
1.2 Given four SDS, identify the hazardous material.	
1.3 Given a laboratory report (boiling point, classification, PH, etc.), identify the constituent that makes this mixture hazardous.	
1.4 Given a scenario about pollution prevention, identify the preferred strategy that should be used.	
1.5 Identify examples of effective recycling.	
1.6 Given a scenario involving pollution, identify the pollution impacts and the related regulations.	
1.7 Given a scenario about a Pollution Prevention Opportunity Assessment (PPOA), identify the elements and sequence of events.	
1.8 Given a scenario about hazardous materials and process, identify the impact to air.	
1.9 Given a scenario hazardous materials and process, identify the impact to water resources.	
1.10 Given a scenario hazardous materials and process, identify the impact to soil.	
1.11 Identify the characteristics of minor and major permits.	
1.12 Identify the characteristics of the permit application and permit review.	
1.13 Identify the characteristics of inspection, training, and waste requirements of permitting.	



1.14 Determine the threshold quantity of a regulated substance in a process required to comply with EPA's risk management program regulation.	
1.15 Identify the components of Standard Operating Procedures (SOP).	
2 Shipping and Transporting Hazardous Waste and Hazardous Materials	10.34
2.1 Given a scenario about hazmat transportation, identify requirements.	
2.2 Given a scenario about packaging, identify the appropriate container.	
2.3 Given a scenario about transporting hazardous waste or hazardous materials and the method of transportation, identify the required labeling.	
2.4 Given a scenario about shipping domestically or internationally, determine how hazardous materials should be marked.	
2.5 Given a scenario, identify what information needs to be included in the shipping documents, and the proper shipping description format, and order of information.	
2.6 Given a shipment scenario, identify the required placarding.	
2.7 Identify conditions under which shipments, or portions of shipments, can be accepted or rejected.	
3 Store Materials with Hazard	9.22
3.1 Identify storage location site requirements for property containing hazardous materials/waste.	
3.2 Given a scenario about controlling inventory, identify the regulations that apply to that inventory.	
3.3 Given a scenario about storage of hazardous waste/material, identify the facility signage requirements.	
3.4 Given a scenario about storing a hazardous waste/material, identify proper container labeling requirements.	
3.5 Given a scenario about controlling access to hazardous materials/waste, identify how to control access.	
3.6 Given a scenario, identify how storage meets requirements.	
4 Facility Operations Involving Materials with Hazards	9.12
4.1 Given a type of hazardous material/waste, identify the engineering control that should be used to treat the material/waste.	
4.2 Given a type of hazardous material/waste, identify the engineering control that should be used to store of the material/waste.	
4.3 Given a type of hazardous material/waste, identify the engineering control that should be used to dispose of the waste.	
4.4 Given a scenario about a process, identify regulatory training record requirements.	
4.5 Given an SDS, identify the hazardous communication requirements that are needed for that material.	
4.6 Given a hazardous material, identify the PPE that should be used when sampling, handling, i.e., sweeping, shoveling, etc., the material.	
4.7 Given a scenario, identify the testing procedures needed to determine the hazard associated with the material.	
4.8 Given a hazardous material, determine health, safety, and security requirements.	
5 Disposition of Materials with Hazards	8.46
5.1 Identify typical components of a waste profile.	
5.2 Given a scenario about a waste material, identify the disposition options.	
5.3 Identify what a generator uses to qualify/disqualify a disposal facility.	
5.4 Given a scenario about a material (soil, chemical product, construction waste, etc.), identify the disposition requirements for the material.	



5.5 Given a scenario about the final disposition of a hazardous waste under RCRA, identify how final disposition is confirmed and documented.	
5.6 Given a scenario where there is a release from a container, identify how the release should be managed.	
5.7 Given a waste disposition scenario, identify how emissions (air) should be managed.	
5.8 Given a waste disposition scenario, identify how discharges (water) should be managed.	
6 Record Keeping and Reporting	7.49
6.1 Given a scenario about a spill of a hazardous material, identify the reporting requirements (timeframe, threshold reporting quantities, who receives the reports.)	
6.2 Given a scenario, identify the record keeping requirements for the relevant regulatory program (RCRA, EPCRA, TSCA, UST, CWA, CAA, CERCLA, HMTA, and SARA.)	
7 Training Personnel	8.07
7.1 Given a scenario, identify the training requirements for the relevant regulatory program (RCRA, EPCRA, TSCA, UST, CWA, CAA, CERCLA, HMTA, SARA, and OSHA.)	
7.2 Given an activity involving materials with hazard, identify the competencies that would be needed for that activity (could include identifying hazards, determine if respiratory protection is needed, determine PPE needed, decontamination sequences, site worker needs a physical, etc.)	
7.3 Given a scenario about a job, identify the types of training that are required.	
7.4 Given a scenario about training, identify the assessment that should be used.	
7.5 Given a scenario about a Hazmat event when conducting drills and exercises, identify which types of agencies should be involved.	
7.6 Given a regulatory requirement, determine the adequacy of the training content and duration.	
8 Response and Recovery	7.95
8.1 Given a scenario about a spill or release, identify the chemical and physical hazards of the material, the quantity of material, and the location of the spill /release.	
8.2 Given a scenario about a spill or release, identify the amount of material that has been spilled or released.	
8.3 Identify the conditions that require the incident to be reported to the National Response Center.	
8.4 Given a scenario about a spill or release, identify how to mitigate the impact to receptors.	
8.5 Identify the steps to develop a recovery or incident action plan.	
8.6 Given an accident situation, identify data needed to investigate the cause of the incident.	
9 Remediation	6.5
9.1 Given a scenario about a spill or release, determine how to identify the constituents of concern, the vertical and horizontal extent of the constituents of concern, and the characteristics of the receiving media.	
9.2 Given a release scenario, determine the appropriate remedial objectives.	
9.3 Given a scenario about physical characteristics of a contaminant and a situation involving the contaminant, identify the treatment option that should be used to remediate the contaminant.	
9.4 Given a scenario about a remedial technology that was selected, identify the tools that should be used to ensure remedial action objectives are achieved.	
9.5 Identify capital and recurring costs (O&M costs) associated with a selected remedial action.	
9.6 Given a scenario and remediation technology, identify redevelopment considerations and pitfalls.	
9.7 Given soil analytical results, determine if the clean-up standard has been achieved.	



10 Management Systems	6.58
10.1 Given a scenario, identify which regulations would apply to a multi-media program.	
10.2 Given a scenario, identify the requirements for the maintenance and retention of records.	
10.3 Given a scenario, identify how the investigator can determine if a regulation is current.	
10.4 Given a scenario, identify knowledge needed to participate in regulation development.	
10.5 Given a scenario, identify the required interested parties and the process for the interested parties to communicate.	
10.6 Given a scenario, what are the required public outreach mechanisms?	
10.7 Identify elements of a management system audit and difference(s) from a compliance audit.	
10.8 Identify variables in a financial analysis.	
10.9 Given a scenario, describe operations that require a program.	
11 Environmental Studies	6.35
11.1 Given a scenario about a property transfer (sales or purchase of property), describe the required environmental due diligence.	
11.2 Given a scenario where lead-based paint, asbestos, and other regulated materials are thought to be present, describe how a building survey should be conducted.	
11.3 Given a regulatory framework, describe the required process and output.	
11.4 Given a scenario of analytical data, identify contaminants of concern.	
11.5 Given a scenario of a source of contamination, describe likely exposure routes.	
12 Health and Safety	10.57
12.1 Given a concentration of a contaminant of concern, identify exposure routes and susceptible populations that may be affected.	
12.2 Given screening thresholds, identify potential hazardous material exposure routes.	
12.3 Given a scenario, identify tasks to complete a job, the hazards of those tasks, and the control of those hazards.	
12.4 Determine process safety management.	
12.5 Identify recommended basic elements of an OSHA-compliant site safety plan.	
12.6 Identify recommended elements of an emergency response plan.	
12.7 Given the presence of hazardous materials, identify the appropriate containment.	
12.8 Identify labeling requirements for products.	

For more information about the Certified Hazardous Materials Manager certification program, including eligibility requirements and application procedures, see the IHMM [Candidate Handbook](http://www.ihmm.org) available at www.ihmm.org. If you have questions about the CHMM Blueprint, please contact M. Patricia Buley at pbuley@ihmm.org.