Overview of GES and QEP Blueprint Development

August 15, 2022

The Qualified Environmental Professional (QEP) is the first and only multi-media, multi-disciplinary, fully accredited credential that requires environmental professionals to have a broad perspective and to have the knowledge and skills to solve real world problems. Through the QEP certification, environmental professionals demonstrate the breadth and depth of their knowledge and experience by meeting eligibility requirements, which includes passing the General Environmental Science (GES) Exam and the Qualified Environmental Professional (QEP) Exam.

The Environmental Professional In-Training (EPI) program is an optional first step toward obtaining QEP status for environmental students and professionals just beginning their careers. Holding the EPI designation allows students who anticipate entering the environmental field, or for graduates who have entered the field within the last five years, to demonstrate personal knowledge by meeting eligibility requirements and passing the General Environmental Science (GES) exam.

Thirty-five environmental professionals were appointed in 2021 to GES and QEP Job Analysis (JA) Panels, with 17 and 18 members respectively, by the Board for Global EHS Credentialing® (BGC®). They were given the responsibility for identifying the domains, tasks, knowledge, and skills essential to the performance of an EPI and a QEP. Working closely with the psychometric and testing services company, Certiverse, the panelists, were instrumental in evaluating environmental practice and combining four separate QEP specialty areas -- water quality; air quality; waste management; and environmental science, management, and policy -- into, comprehensive content outlines for updating the two exams. A sample of Qualified Environmental Professionals then validated the content outlines to create the GES and QEP examination blueprints. The JA panelists and QEPs validating the content outlines represented a variety of practice settings, geographic regions, educational levels, and years of experience.

General Environmental Science (GES) Exam Blueprint for the Environmental Professional In-Training (EPI) designation and Part 1 of 2 of the Qualified Environmental Professional (QEP) credential

Approved: August 15, 2022

BOARD FOR GLOBAL EHS CREDENTIALING

GES Topic Number	GES Topic Name	Percent of Exam	GES Topic Description
1.0	**Basic and Media Specific Science**	**45**	**Detailed knowledge and experience in understanding the applicable legal requirements as well as characterizing and conducting studies and projects within 4 major media/waste areas with respect to environmental quality. Also, basic calculations related to each item.**
1.1	Basic Sciences	5	Understanding of the basic principles of chemistry, earth science, geology, ecology, and environmental systems related to the four major media/waste areas with respect to environmental quality.
1.2	Air	10	Detailed knowledge in identifying the applicable legal requirements as well as characterizing and/or conducting projects related to air quality.
1.3	Soil	10	Detailed knowledge in identifying the applicable legal requirements as well as characterizing and/or conducting related to soil, geology, and related environmental issues.
1.4	Water	10	Detailed knowledge in identifying the applicable legal requirements as well as characterizing and/or conducting projects related to water quality.
1.5	Waste	10	Detailed knowledge in identifying the applicable legal requirements as well as characterizing and/or conducting projects related to solid, hazardous, and other types of waste.
2.0	**Environmental Management Systems (EMS) and Programs**	**20**	**Detailed knowledge and understanding of the principals involved in developing and implementing EMS, environmental compliance and related programs, policies, and projects, including ethical practices, identification of applicable requirements and emerging issues, and obtaining required permits, licenses and approvals.**
2.1	Compliance	9	Detailed knowledge and understanding the principals involved in establishing and implementing compliance programs, including identification of applicable requirements and, generally, the process for obtaining required permits, licenses and approvals.
2.2	Management	8	Detailed knowledge and understanding the principals involved in developing and implementing EMS and related programs, policies, and projects including identification of emerging issues.
2.3	Ethics	3	Knowledge of the BGC Ethics code and how it applies to EPIs.

GES Topic Number	GES Topic Name	Percent of Exam	GES Topic Description
3.0	**Applying Environmental Technical and Related Skills**	25	**Apply critical thinking skills to the understanding of media specific and cross-media impacts of pollution, fate, and transport of environmental contaminants, conducting and evaluating environmental projects and programs, and understanding the remedial investigation process in all media. Collect and analyze data, including risk assessment.**
3.1	Evaluation	3	Understand the principles of media and cross-media impacts of pollution including the fate and transport of environmental contaminants as well as identifying and evaluating potential sources of contamination and environmental risk. Detailed knowledge and understanding of the principals involved in evaluating and judging the effectiveness of treatment and pollution minimization and reduction operations/practices.
3.2	Treatment	4	Detailed knowledge and understanding the principals involved in identifying and evaluating available pollutant treatment methods in all media and wastes, including minimization, reduction, and optimization of treatment.
3.3	Remediation	4	Detailed knowledge and understanding the principals involved in remedial investigation and remedy selection and implementation processes.
3.4	Monitoring	4	Detailed knowledge and understanding the principals involved in characterizing and measuring, in all media and wastes, constituent/contaminant levels, including representative sample collection and appropriate analytical methods. Understand key aspects of analytical methods, including field instrument operations and limitations, calibration requirements etc.
3.5	Risk Assessment	3	Understand the principles of risk assessment and evaluating site risk characteristics.
3.6	Statistical Analysis	4	Identify statistical methods likely to be used in a data analysis to assist in setting Data Quality Objectives. Understand data trends using statistics and provide written interpretation of statistical results, including identifying limitations. Also, basic environmental calculations such as mass balances.
3.7	Health and Safety	3	Understand and communicate health and safety requirements and risks as they pertain to environmental systems.
4.0	**Communication**	**10**	**Understand the principles of environmental communication, including effective written and oral communications with agencies, employees, and management.**

Qualified Environmental Professional (QEP) Exam Blueprint for Part 2 of 2 of the Qualified Environmental Professional (QEP) credential

BOARD FOR GLOBAL EHS CREDENTIALING

Approved: May 22, 2022

QEP Topic Number	QEP Topic Name	Percent of Exam	QEP Topic Description
1.0	**Area of Specialization**	**25**	**Detailed knowledge and experience in understanding the applicable legal requirements as well as characterizing, conducting, or overseeing projects within 4 major media/waste areas with respect to environmental quality.**
1.1	Air	7	Detailed knowledge and experience in understanding the applicable legal requirements as well as characterizing, conducting, or overseeing projects related to air quality.
1.2	Soil	5	Detailed knowledge and experience in understanding the applicable legal requirements as well as characterizing, conducting or overseeing projects related to soil, geology, and related environmental issues.
1.3	Water	7	Detailed knowledge and experience in understanding the applicable legal requirements aa well as characterizing, conducting or overseeing projects related to water quality.
1.4	Waste	6	Detailed knowledge and experience in understanding the applicable legal requirements as well as characterizing, conducting or overseeing projects related to solid, hazardous and other types of waste.
2.0	**Environmental Management Systems (EMS) and Programs**	**16**	**Develop and implement EMS and related programs, policies, projects and ethical practices. Management of budgets, and staffing (internal and contractor). Establish and implement compliance programs, Including identification of applicable requirements, and emerging issues and obtaining required permits and approvals. Management of relationships with key stakeholders, including staff, upper management, regulatory agencies, and the public.**
2.1	Management	7	Develop and implement EMS and related programs, policies and projects. Management of budgets and staffing (internal and contractor), including insuring they are qualified and, if required, approved/certified.
2.2	Environmental Capacity Building	2	Management of relationships with key stakeholders including staff, upper management, regulatory agencies and the public.
2.3	Compliance	6	Establish and implement compliance programs, including identification of applicable requirements and emerging issues and obtaining required permits and approvals.
2.4	Ethics	1	Ethics - Knowledge of the BGC Ethics code and how it applies to QEPs.

QEP Topic Number	QEP Topic Name	Percent of Exam	QEP Topic Description
3.0	**Applying Environmental Technical and Related Skills**	**52**	**Apply critical thinking skills, conduct and evaluate environmental projects and programs, oversee treatment and/or remediation in all media. Collect, analyze and interpret data, including risk assessment.**
3.1	Critical Thinking	11	Analyze and interpret data, including QA/QC, audit and other program reports, interpret regulations, requirements and reports.
3.2	Evaluation	10	Conduct, implement and evaluate the effectiveness of programs, projects, risk assessments etc. Identify and evaluate potential sources of contamination and environmental risk. Evaluate and judge the effectiveness of treatment and pollution minimization and reduction operations/practices.
3.3	Treatment	8	Identify and evaluate available pollutant treatment methods in all media and wastes, including minimization, reduction and optimization of removal. Evaluate treatment efficiency and regulatory and/or permit compliance.
3.4	Remediation	7	Identify and evaluate probable and actual pollutant and areal extent of site contamination. Identify and prioritize contaminants and media needing remediation and establish remedial objectives for targeted contaminants and media. Develop and/or evaluate potential remedial plans.
3.5	Monitoring	6	Characterize and measure, in all media and wastes, constituent/contaminant levels, including representative sample collection and appropriate analytical methods. Establish/understand Data Quality Objectives. Understand key aspects of analytical methods, including field instrument operations and limitations, calibration requirements etc.
3.6	Risk Assessment	5	Determine the need for and then conduct/coordinate risk assessment for existing or hypothetical conditions. Assess potential receptors, on and off-site, and characterize/calculate contaminant concentrations at receptor locations. Assess the location and determine boundaries for an objective risk assessment, including the presence of minorities or disadvantages receptors within the boundaries.
3.7	Statistical Analysis	5	Identify statistical methods likely to be used in a data analysis to assist in setting Data Quality Objectives. Apply appropriate statistical methods to gathered data. Identify data trends using statistics and provide written interpretation of statistical results, including identifying limitations.
4.0	**Communication**	7	**Written and oral communications with agencies, employees, management, the public and any other stakeholders. Includes EMS and related program documentation, regulatory submittals and communications, standard operating procedures, training materials and detailed technical reports.**