



When Recognition Matters



EXAM PREPARATION GUIDE

PECB Certified ISO 14001 Lead Implementer

The objective of the “**PECB Certified ISO 14001 Lead Implementer**” examination is to ensure that the candidate possesses the necessary expertise to support an organization in establishing, implementing, managing and maintaining an Environmental Management System (EMS) based on ISO 14001.

The target population for this examination is:

- Managers or consultants involved in Environmental Management
- Expert advisors seeking to master the implementation of an Environmental Management System
- Individuals responsible for maintaining conformance with EMS requirements
- EMS team members

The exam content covers the following competency domains:

- **Domain 1:** Fundamental principles and concepts of an Environmental Management System (EMS)
- **Domain 2:** Environmental Management System (EMS)
- **Domain 3:** Planning an EMS implementation based on ISO 14001
- **Domain 4:** Implementing an EMS based on ISO 14001
- **Domain 5:** Performance evaluation, monitoring and measurement of an EMS based on ISO 14001
- **Domain 6:** Continual improvement of an EMS based on ISO 14001
- **Domain 7:** Preparing for an EMS certification audit

The content of the exam is divided as follows:

Domain 1: Fundamental principles and concepts of an Environmental Management System (EMS)

Main objective: To ensure that the ISO 14001 Lead Implementer candidate can understand, interpret and illustrate the main Environmental Management concepts related to an Environmental Management System (EMS).

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Understand and explain the operations of the ISO organization and the development of Environmental Management standards. 2. Ability to identify, analyze and evaluate the Environmental Management compliance requirements for an organization. 3. Ability to explain and illustrate the main concepts in Environmental Management. 4. Ability to identify and briefly describe other environmental related standards. 5. Ability to identify and interpret environmental aspects, vulnerability, threats, impacts and risk. 	<ol style="list-style-type: none"> 1. Knowledge of the application of the seven ISO management principles in Environmental Management. 2. Knowledge of the main standards in Environmental Management. 3. Knowledge of the different sources of Environmental Management requirements for an organization: laws, regulations, international and industry standards, contracts, market practices, and internal policies. 4. Knowledge of the main Environmental Management concepts and terminology as described in ISO 14001. 5. Knowledge of the concept of risk and its application in Environmental Management. 6. Knowledge of the difference between preventive, detective and corrective controls and their characteristics. 7. Knowledge of other environmental related standards. 8. Knowledge of environmental aspects, vulnerability, threats, impacts, risks and related controls.

Domain 2: Environmental Management System (EMS)

Main objective: To ensure that the ISO 14001 Lead Implementer candidate can understand, interpret and provide guidance on how to implement and manage Environmental Management requirements based on the best practices of ISO 14001.

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to identify, understand, classify and explain the requirements of the clauses of ISO 14001. 2. Ability to detail and illustrate the requirements and best practices through concrete examples. 3. Ability to compare possible solutions to an Environmental Management issue of an organization and identify/analyze the strengths and weaknesses of each proposed solution. 4. Ability to select and demonstrate the best Environmental Management solutions in order to address the Environmental Management objectives set by the organization. 5. Ability to analyze, evaluate and validate action plans to implement a specific requirement. 	<ol style="list-style-type: none"> 1. Knowledge of operational planning and control. 2. Knowledge of the requirements of clauses 4 to 10 of ISO 14001. 3. Knowledge of the best practices in Environmental Management. 4. Knowledge of Environmental Management strategies. 5. Knowledge of establishing, implementing and maintaining Environmental Management procedures. 6. Knowledge of implementing and managing action plans to support the EMS implementation in an organization.

Domain 3: Planning an EMS implementation based on ISO 14001

Main objective: To ensure that the ISO 14001 Lead Implementer candidate can plan the implementation of an EMS in preparation for an ISO 14001 certification.

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to manage an EMS implementation project by following the best practices of project management. 2. Ability to collect, analyze and interpret the necessary information to plan the EMS implementation. 3. Ability to observe, analyze and interpret the internal and external environment of an organization. 4. Ability to perform a gap analysis and clarify the Environmental Management objectives of an organization. 5. Ability to legitimize the EMS project to the stakeholders of the organization and obtain the formal approval by the management. 6. Ability to state and justify an EMS scope adapted to the organization's specific environmental objectives. 7. Ability to develop an EMS policy and procedures. 8. Understand and explain environmental aspects, objectives and compliance obligations. 9. Ability to perform the different steps of the risk assessment and risk treatment phases. 	<ol style="list-style-type: none"> 1. Knowledge of the main project management concepts, terminology, process and best practices. 2. Knowledge of the principal approaches and methodology frameworks to implement an EMS. 3. Knowledge of the main concepts and terminology related to organizations. 4. Knowledge of an organization's internal and external environment. 5. Knowledge of the main interested parties related to an organization and their characteristics. 6. Knowledge of the techniques to gather information on an organization and perform a gap analysis of the management system. 7. Knowledge of creating and presenting a business case, EMS project team, determining the needed resources and obtaining formal approval from the management. 8. Knowledge of the characteristics of an EMS scope in terms of organizational, technological and physical boundaries. 9. Knowledge of the techniques and best practices to draft Environmental Management policies and procedures. 10. Knowledge of identifying and determining significant environmental aspects, objectives and compliance obligations. 11. Knowledge of the different approaches and main methodology characteristics to perform a risk assessment. 12. Knowledge of the main activities of the risk identification, estimation, evaluation related to the environment included in the EMS of an organization.

Domain 4: Implementing an EMS based on ISO 14001

Main objective: To ensure that an ISO 14001 Lead Implementer candidate can implement the processes of an EMS required for an ISO 14001 certification.

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to understand and analyze the needs, and provide guidance on the attribution of roles and responsibilities in the context of the EMS implementation and management. 2. Ability to define the documentation and record management processes needed to support the implementation and operations of an EMS. 3. Ability to define and design processes and properly document them. 4. Ability to recognize the processes and procedures for managing incidents, preventing future environmental impacts and reducing their chance of occurrence. 5. Ability to define and implement appropriate Environmental Management training, awareness and communication plans. 6. Ability to establish an EMS communication plan to assist in the understanding of an organization's environmental issues, policies, and performance, and providing inputs/suggestions for improving the EMS performance. 	<ol style="list-style-type: none"> 1. Knowledge of the roles and responsibilities of the key interested parties during and after the implementation and operation of an EMS. 2. Knowledge of the main organizational structures applicable for an organization to manage an Environmental Management System. 3. Knowledge of the best practices on documentation and record management processes and the documentation management life cycle. 4. Knowledge of the characteristics and the differences between the different documents related to an EMS: policy, procedure, guideline, standard, baseline and worksheets, etc. 5. Knowledge of implementing controls, process techniques and best practices. 6. Knowledge of the main characteristics of an EMS incident management process based on best practices and the implementation of ways to detect and respond to incidents. 7. Knowledge of the characteristics and the best practices to implement Environmental Management training, awareness and communication plans. 8. Knowledge of the communication objectives, activities and interested parties to enhance the shareholder support and confidence.

Domain 5: Performance evaluation, monitoring and measurement of an EMS based on ISO 14001

Main objective: To ensure that the ISO 14001 Lead Implementer candidate can evaluate, monitor and measure the performance of an EMS in the context of an ISO 14001 certification.

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to monitor and evaluate the effectiveness of an EMS. 2. Ability to verify to what extent the identified EMS requirements have been met. 3. Ability to define and implemented an internal audit program for ISO 14001. 4. Ability to perform regular and methodical reviews regarding the suitability, adequacy, effectiveness and efficiency of an EMS based on the policies and objectives of the organization. 5. Ability to define and implement a management review process and counsel management on it. 	<ol style="list-style-type: none"> 1. Knowledge of the techniques and best practices to monitor the effectiveness of an EMS. 2. Knowledge of the main concepts and components related to an Environmental Management Measurement Program: measures, attributes, indicators and dashboards. 3. Knowledge of the main concepts and components related to the implementation and operation of an EMS internal audit program. 4. Knowledge of the differences between the concepts of major and minor nonconformities, anomalies and observations. 5. Knowledge of the guidelines and best practices to write a nonconformity report. 6. Knowledge of the best practices on how to perform management reviews.

Domain 6: Continual improvement of an EMS based on ISO 14001

Main objective: To ensure that the ISO 14001 Lead Implementer candidate can provide guidance on the continual improvement of an EMS in the context of ISO 14001.

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to track and take action on nonconformities. 2. Ability to identify and analyze the root-causes of nonconformities and propose action plans to treat them. 3. Ability to counsel an organization on how to continually improve the effectiveness and the efficiency of an EMS. 4. Ability to implement EMS continual improvement processes in an organization. 5. Ability to determine the appropriate business improvement tools to support the continual improvement processes of an organization. 	<ol style="list-style-type: none"> 1. Knowledge of the main processes, tools and techniques used by professionals to identify the root-causes of nonconformities. 2. Knowledge of defining a process to resolve problems and nonconformities. 3. Knowledge of the characteristics and the difference between corrective and preventive actions. 4. Knowledge of the main processes, tools and techniques used by professionals to develop and propose the best corrective and preventive action plans. 5. Knowledge of the main concepts related to continual improvement. 6. Knowledge of the continuous monitoring process of change factors. 7. Knowledge of the maintenance and improvement of an EMS. 8. Knowledge of the continual update of documentation and records.

Domain 7: Preparation for an EMS certification audit

Main objective: To ensure that the ISO 14001 Lead Implementer candidate can prepare and assist an organization for the certification of an EMS against the ISO 14001 standard.

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to understand the main steps, processes and activities related to an ISO 14001 certification audit. 2. Ability to understand, explain and illustrate the audit evidence approach in the context of an ISO 14001 audit. 3. Ability to counsel an organization to identify and select a certification body that meets their needs. 4. Ability to review the readiness of an organization for an ISO 14001 certification audit. 5. Ability to coach and prepare an organization's personnel for an ISO 14001 certification audit. 6. Ability to argue and challenge the audit findings and conclusions with external auditors. 	<ol style="list-style-type: none"> 1. Knowledge of the evidence based approach in an audit. 2. Knowledge of the differences between Stage 1 and Stage 2 audits. 3. Knowledge of Stage 1 audit requirements, steps and activities. 4. Knowledge of the documentation review criteria. 5. Knowledge of Stage 2 audit requirements, steps and activities. 6. Knowledge of follow-up audit requirements, steps and activities. 7. Knowledge of surveillance audits and recertification audit requirements, steps and activities. 8. Knowledge of the requirements, guidelines and best practices to develop action plans following an ISO 14001 certification audit.

Based on these seven (7) domains and their relevance, twelve (12) questions are included in the exam, as summarized in the following table:

		Level of Understanding (Cognitive/Taxonomy) Required						
		Points per Question	Questions that measure Comprehension, Application and Analysis	Questions that measure Synthesis and Evaluation	Number of Questions per competency domain	% of test devoted to each competency domain	Number of Points per competency domain	% of Points per competency domain
Competency/Domains	Fundamental principles and concepts of an Environmental Management System (EMS)	5	X		1	8.33	5	6.67
	Environmental Management System (EMS)	10	X		1	8.33	10	13.34
	Planning an EMS implementation based on ISO 14001	5	X		2	16.67	15	20.00
		10	X					
	Implementing an EMS based on ISO 14001	5	X		3	25.00	15	20.00
		5		X				
		5		X				
	Performance evaluation, monitoring and measurement of an EMS based on ISO 14001	5		X	3	25.00	20	26.68
		10		X				
		5		X				
	Continual improvement of an EMS based on ISO 14001	5		X	1	8.33	5	6.67
	Preparing for an EMS certification audit	5		X	1	8.33	5	6.67
Total points		75						
Number of Questions per level of understanding			5	7				
% of Test Devoted to each level of understanding (cognitive/taxonomy)			41.67	58.33				

The passing score is **70%**.

After successfully passing the exam, candidates will be able to apply for the credential of PECB Certified ISO 14001 Lead Implementer, depending on their level of experience.

TAKE A CERTIFICATION EXAM

Candidates will be required to arrive at least thirty (30) minutes before the beginning of the certification exam. Candidates that arrive late will not be given additional time to compensate for the late arrival and may be denied entry to the exam room (if they arrive more than 5 minutes after the beginning of the exam scheduled time).

All candidates will need to present a valid identity card with a picture such as a driver's license or a government ID to the invigilator.

The exam duration is three (3) hours.

The questions are essay type questions. This type of format was chosen because the intent is to determine whether an examinee can write a clear coherent answer/argument and to assess problem solving techniques. Because of this particularity, the exam is set to be “open book” and does not measure the recall of data or information. The examination evaluates, instead, comprehension, application, analysis, synthesis and evaluation, which mean that even if the answer is in the course material, candidates will have to justify and give explanations, to show they really understood the concepts. At the end of this document, you will find sample exam questions and their possible answers.

As the exams are “open book”; candidates are only authorized to use:

- A copy of the ISO 14001 standard;
- Course notes from the Participant Handout;
- Any personal notes made by the student during the course; and
- A hard copy dictionary.

The use of electronic devices, such as laptops, cell phones, etc., is not allowed.

All attempt to copy, collude or otherwise cheat during the exam will automatically lead to the exam's failure.

PECB exams are available in English. For availability of the exam in a language other than English, please contact examination@pecb.com.

RECEIVE YOUR EXAM RESULTS

Results will be communicated by email in a period of 6 to 8 weeks, after taking the exam. The results will not include the exact grade of the candidate, only a mention of pass or fail.

Candidates who successfully complete the examination will be able to apply for a certified scheme.

In the case of a failure, the results will be accompanied with the list of domains in which the candidate had a low grade, to provide guidance for exams' retake preparation.

Candidates who disagree with the exam results may file a complaint by writing to examination@pecb.com. For more information, please refer to www.pecb.com.

EXAM RETAKE POLICY

There is no limit on the number of times a candidate may retake an exam. However, there are some limitations in terms of allowed time-frame in between exam retakes, such as:

- If a candidate does not pass the exam on the first attempt, he/she must wait 15 days for the next attempt (1st retake). Retake fee applies.

Note: *Students, who have completed the full training but failed the written exam, are eligible to retake the exam once for free within a 12 month period from the initial date of the exam.*

- If a candidate does not pass the exam on the second attempt, he/she must wait 3 months (from the initial date of the exam) for the next attempt (2nd retake). Retake fee applies.
- If a candidate does not pass the exam on the third attempt, he/she must wait 6 months (from the initial date of the exam) for the next attempt (3rd retake). Retake fee applies.

After the fourth attempt, a waiting period of 12 months from the last session date is required, in order for candidate to sit again for the same exam. Regular fee applies.

For the candidates that fail the exam in the 2nd retake, PECB recommends to attend an official training in order to be better prepared for the exam.

To arrange exam retakes (date, time, place, costs), the candidate needs to contact the PECB partner who has initially organized the session.

CLOSING FILES

Closing a file is equivalent to rejecting a candidate's application. As a result, when candidates request that their file be reopened, PECB will no longer be bound by the conditions, standards, policies, candidate handbook or exam preparation guide that were in effect before their file was closed.

Candidates who want to request that their file be reopened must do so in writing, and pay the required fees.

EXAMINATION SECURITY

A significant component of a successful and respected professional certification credential is maintaining the security and confidentiality of the examination. PECB relies upon the ethical behaviour of certificate holders and applicants to maintain the security and confidentiality of PECB examinations. When someone who holds PECB credentials reveals information about PECB examination content, they violate the PECB Code of Ethics. PECB will take action against individuals who violate PECB Policies and the Code of Ethics. Actions taken may include permanently barring individuals from pursuing PECB credentials and revoking certifications from those who have been awarded the credential. PECB will also pursue legal action against individuals or organizations who infringe upon its copyrights, proprietary rights, and intellectual property.

SAMPLE EXAM QUESTIONS AND POSSIBLE ANSWERS

1. Identification and management of environmental aspects

Please determine the environmental aspects associated with the following activity, indicate its impact and select at least three mitigation measures to treat the environmental aspect.

Possible answer:

Activity	Aspect (s)	Impact (s)	Mitigation measures
<i>Example: Maintenance with the use of chemicals</i>	<i>Potential for the uncontrolled release of chemicals</i>	<i>Air pollution Pollution of soil Injury to humans</i>	<i>Establish environmental objectives to eliminate chemical use Staff in charge of the materials trained on the appropriate handling of chemicals Establish environmental objectives to switch to eco-friendly chemicals</i>

2. Development of metrics

For each of the following clauses of ISO 14001, please provide at least two examples of metrics that would be acceptable to measure conformity to the clause.

Clause 7.4.3 External communication

Possible answer:

- *Total list of planned communication activities to be conducted with external stakeholders*
- *Number of articles published to communicate relevant environmental performance*