



When Recognition Matters



EXAM PREPARATION GUIDE

PECB Certified ISO 21500 Lead Project Manager

The objective of the “PECB Certified ISO 21500 Lead Project Manager” examination is to ensure that the candidate has the knowledge and possesses the necessary competence to support an organization in managing projects as specified in ISO 21500:2012.

The target population for this examination is:

- Managers and project sponsors, in order to provide them with a better understanding of the principles and practice of project management
- Project management teams and project team members, so that they have a common basis upon which to compare their project standards and practices with those of others
- Developers of national or organizational standards, for use in developing project management standards, which are consistent at a core level with those of others

The exam content covers the following domains:

- **Domain 1:** Fundamental concepts in Project Management
- **Domain 2:** Initiating processes of the Project Management
- **Domain 3:** Planning processes of Project Management
- **Domain 4:** Implementing processes to perform the project management activities
- **Domain 5:** Controlling processes to monitor and measure the performance against project plan
- **Domain 6:** Closing process
- **Domain 7:** Competences and Evaluation of Lead Project Managers

The content of the exam is divided as follows:

Domain 1: Fundamental concepts in project management

Main objective: To ensure that the ISO 21500 Lead Manager candidate understood, and gained the knowledge on how to interpret and illustrate the main project management concepts related to ISO 21500 and best practices

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Understand and explain the operations of the ISO organization and the Project Management guidelines 2. Ability to distinguish relationship and main differences between ISO 21500 and other project management methodologies and standards 3. Understand project management concepts and their relationship. 4. Ability to make the distinction between projects and operations 5. Ability to understand and analyze organizational system (project stakeholders, organizational influence, organizational culture & style and organizational structure). 6. Understanding and explaining the relationship between project management and processes. 7. Identification of the recommended project management project management processes and understanding project management process application 8. Ability to make the distinction between processes and subject groups 	<ol style="list-style-type: none"> 1. Knowledge of the seven ISO management principles application and relation to Project Management 2. Knowledge of the Project Management related standards 3. Knowledge of the main ISO 21500 sources such as PMBOK, DIN 69901 Project Management, BS 6079:2010 and BS ISO 15188:2001 4. Knowledge of the main Project Management concepts and terminology as described in ISO 21500 and PMBOK 5. Knowledge of the main organizational activities, strategy and structure influences on project management 6. Knowledge of the project management processes and the relationship between project management concepts and processes 7. Knowledge on project management process application and appropriate selection of processes 8. Knowledge on project management perspectives and project management process groups interrelationship and interactions

Domain 2: Initiating processes of the Project Management

Main objective: To ensure that the candidate has a thorough understanding of project management concepts, methodologies and principles necessary to start a project phase of project, to define the project phase or project objectives and to authorize the project manager to proceed with the project work

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to develop a project charter by following ISO 21500 recommendations 2. Ability to identify the stakeholder by following ISO 21500 recommendations 3. Ability to manage the establishment of the project team by following ISO 21500 recommendations 	<ol style="list-style-type: none"> 1. Understanding of the purpose project charter development as described in ISO 21500 2. Knowledge of the creation and presentation of a project charter, including content, targets, problems, challenges, benefits and objectives of the project management 3. Knowledge of the identification and analysis of the interested parties and their impact on the project development 4. Knowledge of the establishment of a project team as described in ISO 21500

Domain 3: Planning processes of Project Management

Main objective: To make sure that the candidate can plan processes which are used to develop planning detail

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to develop project plans as recommended by ISO 21500 2. Ability to define state and justify a project scope and to define scope boundaries in organizational, technological and physical terms 3. Ability to create the work breakdown structure that provides a framework for dividing and subdividing the project work 4. Ability to estimate the resources needed for project implementation and ability to define the project organization 5. Ability to sequence project activities, estimate their duration and develop a project plan 6. Ability to obtain an approximation of the necessary costs to complete each project activity and to develop project budget 7. Ability to perform risk identification and risk assessment phases 8. Ability to understand and explain the quality of the project plan 9. Ability to plan procurement 10. Ability to plan communications 	<ol style="list-style-type: none"> 1. Knowledge of the development, drafting, content, filling and reviewing and management approval of the project plan 2. Knowledge of the purpose and importance of defining project scope and its boundaries 3. Knowledge of the purpose of work breakdown structure creation as recommended by ISO 21500 4. Knowledge of resource types needed for project implementation and human resource planning. 5. Knowledge of the purpose of activity sequencing project plan development 6. Knowledge of the cost management plan and cost budgeting tools, techniques, baseline and project funding requirements 7. Knowledge of the risk management plan, selection of risk assessment approaches, risk identification and risk assessment 8. Knowledge of the project quality management phases based on PMBOK and quality planning based on ISO 21500 9. Knowledge of project procurement management based on PMBOK and procurement planning purpose based on ISO 21500 10. Knowledge of project communications management based on PMBOK and the purpose of communications planning based on ISO 21500

Domain 4: Implementing processes to perform the project management activities

Main objective: To ensure that the candidate can implement processes used to perform the project management activities and to support the provision of the project's deliverables in accordance with the project plans

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to direct project work as recommended by ISO 21500 2. Ability to manage stakeholders as recommended by ISO 21500 3. Ability to develop project team after project team establishment and defining project organization as recommended by ISO 21500 4. Ability to select risk treatment options and to understand the purpose of the risk treatment 5. Ability to perform quality assurance by following ISO 21500 recommendations 6. Ability to select suppliers after procurement planning as recommended by ISO 21500 7. Ability to distribute information by following ISO 21500 recommendations 	<ol style="list-style-type: none"> 1. Knowledge of the main activities to direct and manage project work 2. Knowledge of the purpose of stakeholders' management including communications management 3. Knowledge of the purpose of project team development and understanding activities as team building activities and team performance assessment 4. General knowledge of information included in risk treatment plans and evaluation of residual risk 5. Knowledge of the purpose of performing quality assurance and the importance of quality assurance tools and techniques 6. General knowledge of the purpose of supplier selection based on PMBOK 7. Knowledge of the purpose of information distribution and selection of information distribution tools and techniques based on PMBOK

Domain 5: Controlling processes to monitor and measure the performance against the project plan

Main objective: To ensure that the candidate can monitor, measure and control project performance against the project plan

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to monitor and control project work by following ISO 21500 and PMBOK recommendations 2. Ability to control project scope, maximize positive and minimize negative project impacts created by scope changes 3. Ability to control acquired resources and manage the project team 4. Ability to appropriately control project schedule 5. Ability to control cost, monitor variances and to take appropriate actions 6. Ability to control risk through the project management processes by following ISO 21500 and PMBOK recommendations 7. Ability to perform quality control project objectives and requirements 8. Ability to administer procurement by following ISO 21500 and PMBOK recommendations 9. Ability to manage communications by following ISO 21500 and PMBOK recommendations 	<ol style="list-style-type: none"> 1. Knowledge of the purpose of monitoring and controlling project work and knowledge on how check whether the project activities are implemented following project plans 2. Knowledge of the purpose of control scope and the influencing factors 3. Knowledge of the purpose of resource control, project team management and conflict management 4. Knowledge of the purpose of Control schedule to determine the current status of the project schedule and to carry out proper actions to avoid adverse schedule impacts 5. Knowledge of the proper actions taken to control costs of the project 6. Knowledge on how to control, monitor and reassess risks 7. Knowledge of tools and techniques used to determine whether the established project objectives, quality requirements and standards are being met and to identify causes of, and ways to eliminate, unsatisfactory performance 8. Knowledge of how to manage the relationship between the buyer and the supplier 9. Ensuring that the communication needs of the project stakeholder are satisfied and resolving communication issues if and when they arise

Domain 6: Closing process

Main objective: To ensure that the candidate can formally announce that the project phase or project is finished, and provide lessons learned that are necessary to be considered and implemented

Competencies	Knowledge statements
<ol style="list-style-type: none"> 1. Ability to close project phase or project by following ISO 21500 recommendations 	<ol style="list-style-type: none"> 1. Knowledge on how to confirm the completion of all project processes and activities 2. Knowledge of the importance of project closure phase including fully transferring project deliverables to others, document and archive lessons learned and formally close contracts

Domain 7: Competences and Evaluation of Lead Project Managers

Main objective: To ensure that ISO 21500 Lead Project Manager candidates have gained the necessary competencies and a thorough understanding of Project Management processes as recommended by ISO 21500

Competencies	Knowledge statements
1. Ability to understand the competencies of the Lead project managers	1. Knowledge of the main differences between three dimension of competence (Knowledge, Skill and Behavioral Skills) 2. Knowledge of the different competencies of the Lead Project Managers 3. Knowledge of the qualification of Lead Project Managers

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

		Level of Understanding (Cognitive/Taxonomy) Required		Number of Questions per competency domain	% of test devoted to each competency domain	Number of Points per competency domain	% of Points per competency domain	
		Points per Question	Questions that measure Comprehension, Application and Analysis					Questions that measure Synthesis and Evaluation
Competency/Domains	Fundamental concepts in Project Management	5	X	2	16.67	10	13.33	
		5	X					
	Initiating processes of the Project Management	10	X	3	25.00	25	33.33	
		10	X					
		5	X					
	Planning processes of Project Management	5		X	1	8.33	5	6.67
	Implementing processes to perform the project management activities	5		X	3	25.00	15	20.00
		5		X				
		5		X				
	Controlling processes to monitor, measure the performance against project plan	10		X	1	8.33	10	13.33
Closing processes	5	X		1	8.33	5	6.67	
Competence and evaluation of lead project managers	5		X	1	8.33	5	6.67	
Total points		75						
Number of Questions per level of understanding			6	6				
% of Test Devoted to each level of understanding (cognitive/taxonomy)			50.00	50.00				

The passing score is established at 70%.

After successfully passing the exam, candidates will be able to apply for the credentials of Certified ISO 21500 Lead Project Manager, 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 arriving 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 passing score is established at **70%**.

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 response/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 means that even if the response is in the course material, candidates will have to justify and give explanations, to indicate they really understood the concepts. At the end of this document, you will find sample exam questions and their possible responses.

As the exam is "open book"; the candidates are authorized to use the following reference materials:

- A copy of the ISO 21500 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 pass or fail.

After successfully passing the exam, candidates will be able to apply for the credentials of PECB Certified ISO 21500 Lead Project Manager, depending on their level of experience.

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 limitation on how many times a candidate can retake the same exam. However, there are some limitations in terms of allowed time-frame in between exams.

When candidates fail the examination, they are only allowed to retake the examination once within 12 months after the first attempt. If second examination is unsuccessful, candidates will be allowed to retake the exam only after 1 year (12 months). Retake fee applies.

Only candidates, who have completed a full PECB training but fail the written exam, are eligible to retake the exam for free, under one condition:

“A candidate can only retake the exam once and this retake must occur within 12 months from the initial exam's date.”

When candidates fail the same examination for the second time, their file is automatically closed for 1 year.

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. Project Actions

What does Clause 4.1 require for the action to be accomplished for a successful project?

Actions to take:

- Define the processes according to the project plan
- Improve the product specifications in our case from ventilator to air conditioner
- Apply requirements conform to the project specification and satisfy customer and stakeholders
- Take into consideration ideas from other department , customers and project management

2. Control and close process

For each of the following clauses of the ISO 21500 standard, please provide two examples of metrics that would be acceptable to measure the conformity to the clause.

Control scope 4.3.14

Possible answers:

- *Performance reports during the plan project*
- *Change requests*
- *Change of scope during the project.*

3. Corrective action plan

A company has been audited and several non-conformities have been uncovered by the auditor. Propose corrective action for every non-conformity and justify.

A non-conformity has been raised because some of employees working in the factory part time when they left the factory they did not sign the report procedure during their working days, so there were a major problem on the report whether something happened during the part time workers or full time workers.

Possible answer:

Root cause: Lack of information on the importance of the report and signing.

Corrective action: Manager should inform the part time workers of the importance of the report. The department should make two reports one for the part time workers and one for full time workers so that there would be no problem in the future.