



T-shore
Education

Examination Instructions



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Module:

Bolt Tightening

Learning scenario:

**Basic Bolt Tightening
Techniques**

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This document has been created as part of the wider T-shore project, co-funded through the European Union's ERASMUS+ programme.



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Document Information

Project Acronym	T-shore
Project Title	Technical Skills for Harmonised Offshore Renewable Energy
Award Number	Project 101055746
Work Package	WP3,4
Deliverable	LSC – Examination Instructions
Document Title	Bolt Tightening Techniques Examination Instructions
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Version Control

Version No.	Date	Description	Prepared by	Checked by
01	04.02.2025	New instruction created	KK	All partners
02	05.2025	Document Updated	DH	

Note This is a fictive generic equipment checklist intended for training purposes and therefore may vary from the equipment checklist provided by a company. It is important that a technician always read and fill checklist carefully prior to any task.

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Table of Contents

1	INTRODUCTION	1
2	EXAMINATION COMPONENTS	1
2.1	THEORETICAL EXAMINATION	1
2.2	PRACTICAL EXAMINATION	1
3	GRADING AND EVALUATION.....	3
4	EXAMINATION CONDITIONS	3
5	ATTACHMENT 1. BOLT TIGHTENING BASIC TECHNIQUES EVALUATION OF PARTICIPANTS	1

1 Introduction

The Bolt Tightening Basic Techniques Examination is designed to assess the competence of participants in performing bolt tightening operations using manual and electrical tools. The assessment evaluates knowledge, practical execution, and adherence to health and safety protocols.

Duration: **3 hours**

Examination type: **Practical and theoretical**

Supervision: **One certified examiner per 6 participants**

2 Examination components

2.1 Theoretical examination

Participants must complete a multiple-choice and short-answer test covering:

- Bolt types and specifications
- Torque principles and tightening sequences
- Risk assessment procedures
- PPE requirements
- Equipment pre-use checks

2.2 Practical examination

The practical examination consists of five exercises assessing practical training proficiency.

Exercise 1 – Bolt Loosening with an Impact Gun

Task: Loosen bolts using an impact gun following safety and procedural guidelines.

Assessment Criteria:

- Proper PPE usage
- Pre-use inspection of tools
- Correct handling and positioning of the impact gun
- Execution of the bolt loosening process
- Storage of bolts and nuts post-loosening
- Completion of the inspection report

Exercise 2 – Bolt Tightening with Manual Torque Wrench

Task: Tighten bolts to the specified torque using a manual torque wrench.

Assessment Criteria:

- Correct selection and calibration of the torque wrench
- Adherence to the specified tightening sequence
- Proper application of force
- Post-tightening torque verification
- Completion of the inspection report

Exercise 3 – Bolt Tightening with Electrical Torque Wrench

Task: Use an electrical torque wrench with a reaction arm to tighten bolts accurately.

Assessment Criteria:

- Tool inspection and calibration verification
- Proper positioning of the reaction arm
- Safe handling and controlled force application
- Completion of the inspection report

Exercise 4 – Demonstration of Hydraulic Torque Wrench (Instructor Only)

Participants will observe an instructor demonstrating hydraulic torque tightening.

Assessment Criteria:

- Understanding of hydraulic tool operation
- Identification of key safety measures
- Engagement in discussion and questions

Exercise 5 – Final Reporting

Task: Complete a final inspection report summarizing all exercises.

Assessment Criteria:

- Accurate completion of documentation
- Logical analysis and reflections
- Proposal of next steps based on results

3 Grading and evaluation

Participants will be assessed using an evaluation rubric:

Table 1. Grading table

Criteria	Performance levels
Theory knowledge	Pass/Fail
Practical skill execution	Excellent, Satisfactory, Needs Improvement, Fail
Safety compliance	Pass/Fail
Reporting accuracy	Excellent, Satisfactory, Needs Improvement, Fail

Final Score:

- **Pass:** Achieves at least "Satisfactory" in all practical exercises and "Pass" in safety compliance.
- **Fail:** Receives "Fail" in any practical exercise or safety compliance.

The exam assessment for participants must be recorded individually for each participant in *Table 3. Evaluation table of Attachment 1. Bolt Tightening basic techniques evaluation of participants.*

4 Examination conditions

- The exam must be conducted in a controlled environment.
- Participants must wear the required PPE.
- All tools and equipment must be inspected before use.
- Examiners will observe, evaluate, and provide feedback.

Participants who successfully pass the examination will receive a **T-Shore Bolt Tightening basic techniques competence Certificate**.

5 Attachment 1. Bolt Tightening basic techniques evaluation of participants

Date:

Instructor(s):

Table 3. Evaluation table

		Bolt Tightening basic techniques			
	Participant name	Theory knowledge	Practical skill execution	Safety compliance	Reporting accuracy
1					
2					
3					
4					
5					
6					



Co-funded by the European Union

The T-shore project is funded through the the
Erasmus+ Centres of Vocational Excellence
(CoVEs) call 2021

Acknowledgements

We would like to extend our sincere thanks to all the project partners for their invaluable contributions to this report and their dedicated work on the T-shore project.

Our deepest appreciation also goes to all T-shore stakeholders, particularly the members of the regional Centres of Vocational Excellence (CoVEs), whose ongoing efforts are instrumental in driving the success of this initiative.

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