



Learning Resources for the course:

Steel Structure Inspector Course for EN 1090

This document covers only:

Competence unit no. CU-1 INTRODUCTION, ICT

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Structure of this document:

Introduction.

Objective.

A. Teacher Guideline.

B. Students Guideline

C. Learning resources

D. Students tasks

E. Appendix.

Introduction

Note. It is assumed that the teacher has in depth knowledge of the industry requirements for the topics discussed in this CU.

Reference document covering the course structure, see document D2.2

The content of this document covers deliverables for D4.1 and D4.2

The course consists of a number of CU's. A CU is the smallest element in the education system that specifies Learning Outcomes, Skills and Competence. A CU can be delivered individually or it can be delivered in combinations with other CUs in order to cover a defined range of knowledge and competence.

The course will clarify the inspector's role in manufacturing where it begins well before welding starts, continues during the welding operation, involves action after welding is completed, and is finalized only when the results are properly reported.

The course will be work-based and follows the manufacturing process from the order is received until the welded product is ready for delivery. The inspector is responsible for producing documents that ensure traceability of the components and related manufacturing action throughout this process.

The activities in this course are work-based and follows a product from initial order and as it is being produced in the factory until it is ready for delivery. The manufacturing process has been divided in logical steps whereby the learning activity and learning content and tasks, are distributed according the status of the manufacturing process.

Activities in the course will be both planning activities as well as practical tasks to be carried out in the workshop together with the company mentor, or in a laboratory at the VET school.

The learning material will be distributed through the LMS (Learning Management System) system provided for this course.

Learning methods will be a mixture of solving planning and reporting tasks through the classroom or reported through the LMS (Learning Management System) system and practical hands-on training in the workshop.

The CUs will follow the work-based production process. Each CU will contain parts of the work preparation activities or/and a part of the production activities

The students have to submit all tasks, both practical and theoretical, given through the different course CUs. All CUs have practical tasks for the students. The course requires that the student has access to a fabrication workshop where products are manufactured. The products in the workshop will be used during the practical training sessions in this course.

Please also note that the learning resources summarized and added in chapter C, is the deliverables harvested from 3 different pilot courses in Hungary and Slovenia.

Objective.

This, CU-1, is a general CU which can be used for a number of courses. The intention of this introduction is to let the students get experience of the IT tools that will be used as well as how the communication with the teacher shall be throughout the course.

In this course the Learning Management System, LMS, that has been selected is Its Learning and the video communication system is ZOOM.

A. Teacher Guideline.

Introduction to the course.

This is a general introduction to the course where we want you to:

- get accustomed to the data tools that are used
- get familiar with how to access the learning material
- go through the questions and select the best way how to answer
- submit written tasks
- upload video material and pictures

We have also added a set of standard resources that you can use through the course.

Please notice that some of these resources contains material that also will be used in more than one CU. We recommend you to identify the content so that you at a later date can go back to these resources.

Teacher actions in CU 1.

* The teacher should decide if the students should be divided into groups for this course. If so assign the students to the different groups.

* How do you want the students to use the course material? Should the students also use Internet as an additional resource?

- * Should the students be asked to present their own experience into the course with examples?
- * Shall you ask questions during the Zoom face-to-face activities which could be basis for short group discussions?
- * If the students want to share information outside the LMS system, sharing common data, then create a common Dropbox folder that the students can share for private use. also test this if required.
- * Use the one hour Zoom meeting to demonstrate how to use Zoom, how to share screen, and to use the chat function. You should also emphasis on how to set up the background and light so that the students face do not disappear. Test sound and sound settings as well.

When CU 1 will close you have gone through how to use the LMS tool and how the students shall answer questions and submit tasks.

The students should all have uploaded a video or pictures from their phone into the system allowing them to show that they are able to carry out this in practices.

It is very important that the students feel safe and secure in how to use the LMS tool and how to submit answers and different tasks.

The LMS system can also be run from a smartphone. Test this functionality with all the students and that they can use the smartphone as an information device

Additional questions that can be relevant for discussions in CU 1: This can be asked as short questions for discussions by the students:

- * The material might either be of unalloyed steel or of stainless steel at any grade. Will this have any influence how you will plan for the production?
- * If you have been producing ex. piping spools in mild steel before and now can get an order for stainless steel pipes, will this create any problems or risks in your production facilities?
- * Health and safety is an important topic in welding fabrication. Which tasks is most important to be carried out?

B. Students Guideline

General comments:

This is a general introduction to the course where we want you to:

- get accustomed to the data tools that are used
- get familiar with how to access the learning materials
- go through the multiple choice questions and how to answer them
- submit a set of written replies to the tasks
- upload video material and pictures

We have also added a set of standard resources that you can use through the course. Please notice that some of these resources contains material that will be used in more than one CU2. We recommend you get an overview of the content such that you later can go back to these resources.

Where do you find information and learning materials etc.:

Under folder with “Resources and activities”. The material is available as pdf-files, word- and excel files, and video material (online at YouTube and as mp4 files stored in the learning management system). Please notice that the written assignments should be answered by using the word-files that are embedded into the description of the tasks. **You shall not use** the Office package installed on your own device.

Type of work:

You have 2 weeks to complete each CU. The first week should be preparation activities, while the second week should be used to solve the tasks, exercises and hand in your results to the teacher. The learning activities include individual studies, work-based training in your company, group activities, classroom training and a digital Zoom video meeting with the teacher once per week.

Estimated length of this CU 1: 4 hours meeting and additional 1 hour zoom meeting to learn the functionality of using zoom meetings

C. Learning resources

Support resources from selected from the Internet.

You get access to these resources by searching for the resource name and producer of the resource.

Title	Producer	Language	No of pages	Copyright
Welding Fabrication Standards	Instituto Italiano della Saldura	English	95	no
Minimum Requirements for the Education, Examination and Qualification	European Welding Fabrication	English	84	yes
EN 1090-certified by TUV AUSTRIA	TUV AUSTRIA	English	8	no
EN 1090 Guideline-White paper	Linde	English	24	no
CE marking of Structural Steelwork	Tubecom AESS	English	3	no

Resources specially created for this CU

No special resources have been created for this CU

Video content for the CU:

The video content is free. Follow the given link to access it.

Title	Producer	Reference	Language	Format	Copy-right
Crane loading accident	https://www.youtube.com/watch?v=BTNgFoZTYTc	ISIM		MP4	No

D. Students tasks

1. Evaluate the risks of implementing a new product into the organization.
Write a short risk report and submit it.

2. Discussion for group-work or individual work:

We are introducing a new generation of products in our factory according drawings

a) 1.1 Kivitele terv1.pdf,

b) 1.2 Kiviteli terv2.pdf

c) 1.3 Kiviteli terv3.pdf

Evaluate the risks for our company introducing this technological product.

Create a short risk report for the company from an inspection point of view.

E. Course evaluation questions

1. **What are your impressions of the data tools we are using in the course ?**

* It seems to be difficult to use.

* It seems to be easy to use.

* Too early to say at this stage.

* I have to use it for some time and then I can give feedback.

* I don't know.

2. The structure of the course with theory and practical work.

* I can carry out the practical work in my company.

* I would like to carry out the practical work in a class (lab) with the teacher.

* I think we have products in our company which I can use for the practical tasks.

* I do not have a mentor in the company so I have to do the practical work by myself.

* I don't know.

3. Presentation of the theoretical material.
 - * I would like to have more focused theoretical material-like a course book.
 - * I would like to have a combination of video presentation and theoretical material.
 - * Too early to say, I need more time to evaluate this question.
 - * I don't know.

4. Questions and multiple choice questions.
 - * I feel it will be valuable to have quiz and multiple choice questions after each training module.
 - * I prefer to write an answer instead of having multiple choice questions.
 - * I prefer to give an oral answer instead of writing answers
 - * If I can use video for answering a question, then I will prefer that.
 - * I don't know.

5. We will use a combination of self study combined with tasks and Zoom video conference.
 - * I think this combination will be a good way of going through the course ?
 - * I would prefer more face to face classroom activity.
 - * I want to try it out first before giving any comments.

F. Appendix.

Course material developed for this CU.

No course material was developed for this CU.

Only free material from the Internet is used as course material.