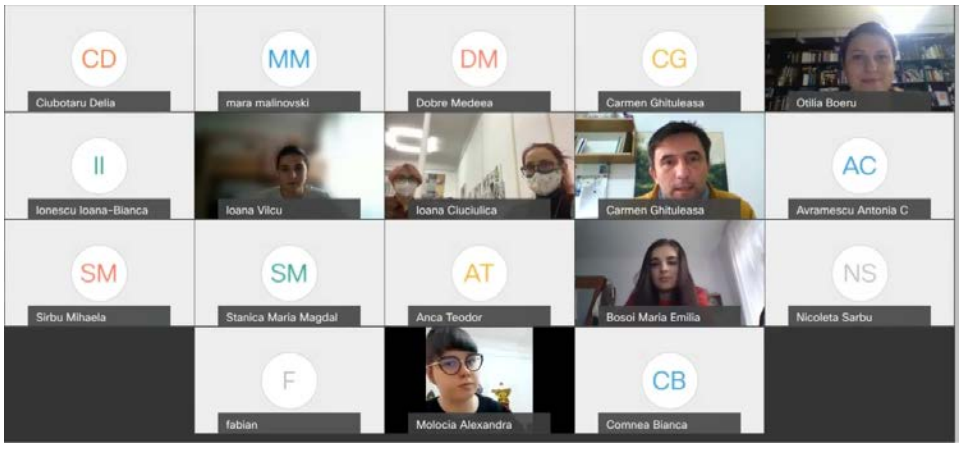
User manual

dedicated e-learning instrument and

e-learning platform – version 3

http://skills4smartex.eu/instrument.php

http://www.advan2tex.eu/portal/



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A. Introduction

This user manual is meant to describe the access modality to the online instruments and the Open Educational Resources of the Erasmus+ Skills4Smartex project: “Smart textiles for STEM training” (No. 2018-1-RO01-KA202-049110). The envisaged target group of the project are VET students and Higher Education students in the years of technical basic preparation. Aim of the project is to highlight end-user applications of basic theoretical disciplines, by means of smart textile prototypes. Since smart textiles are the result of interdisciplinary knowledge of STEM basic disciplines such as: Mathematics, Physics, Chemistry and material science and Electrotechnics, the 56 modules of the Skills4Smartex course include educational content on how to manufacture prototypes based on these disciplines. The trainees of the target group acquire this way important knowledge of end-user applications of the theoretical STEM disciplines they are learning (Figure 1).

Fig. 1 – VET students of technical education

B. The dedicated e-learning instrument

The dedicated e-learning instrument is an online educational instrument, available at the URL address: http://skills4smartex.eu/instrument.php It includes 56 educational modules on smart textiles, conceived on three criteria (Table 1):

Table 1 – The three criteria of the educational modules

Criteria 1 (Concept direction)	Criteria 2 (Manufacturing chain) Chapter	Criteria 3 (Basic disciplines) Module
From STEM to SMART (from the theory of basic disciplines to manufacturing of smart textiles prototypes)	Novel fibers and yarns	Mathematics
From SMART to STEM (the smart textile prototype explained with support of basic disciplines)	Plane material structures	Physics
	Virtual prototyping of sensors	Chemistry and material science
	Smart textile prototype design	Electro-Technics
	Smart textile prototype manufacturing	
	Data processing	
	Testing of smart textiles	

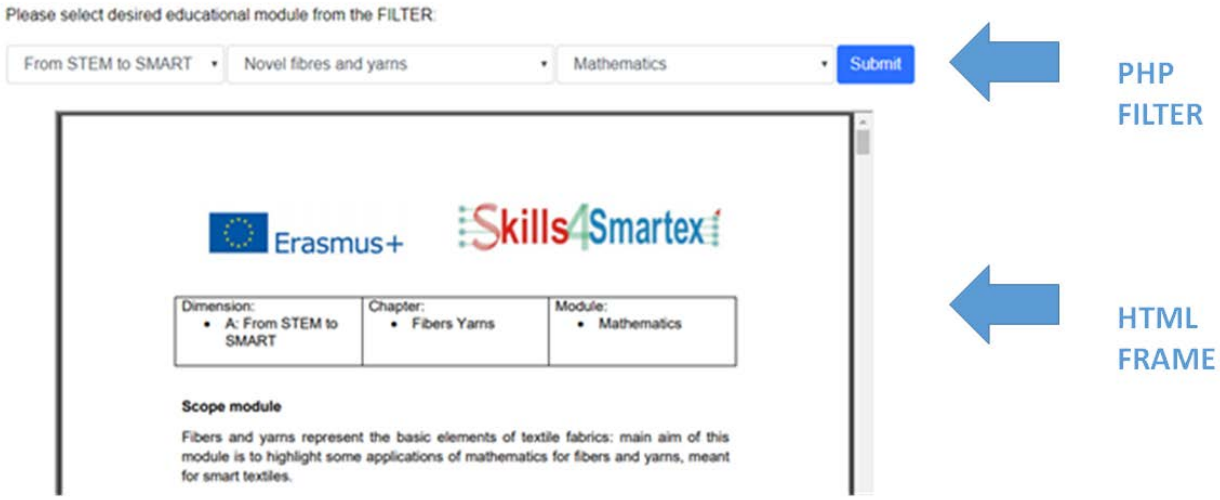

Fig. 2 – The PHP filter with three selection criteria

The PHP filter includes drop-down lists with the mentioned criteria and enables selection of desired module with quick access to the educational modules (Figure 2). Its main objective is to offer a consistent learning method, by selection of the desired educational module. Moreover, a gamification learning environment is

created. The modules highlight applications of basic disciplines learned in high school and college and point out some manufacturing methods of smart textiles. The open access to the modules is in compliance with Erasmus+ provisions, which states open access for the achieved outcomes.

C. The e-learning platform

1. Concept

The Skills4Smartex e-learning platform (www.advan2tex.eu/portal/) was firstly configured within the Erasmus+ project Advan2Tex 2014-1-RO01-KA202-2909. It includes at this moment the Open Educational Resources (OER) of three Erasmus+ strategic partnership VET projects (Table 2).

Table 2 – The three Erasmus+ VET projects with OERs

Acronym / Logo	E-learning course for innovative textile fields Advan2Tex	TEX MATRIX of knowledge for innovation and competitiveness in textile enterprises	Skills4Smartex
Title	E-learning course for innovative textile fields	Matrix of knowledge and competitiveness in textile enterprises	Smart textiles for STEM training
Idea	VET of young professionals by advanced modules in textiles.	Support of innovation within textile enterprises by new R&D solutions	Supporting learning of basic disciplines by smart textile prototypes for practical VET.
Duration	2014-2016	2016-2018	2018-2020

The e-learning platform is a Moodle e-learning platform.

Moodle (www.moodle.org) is an open-source e-learning platform under GNU license. The user manual of the Skills4Smartex project e-learning platform is based on the Moodle modality of working. Please find general aspects regarding this working modality on the Moodle website:

https://docs.moodle.org/30/en/Main_page . For this reason, this user manual only indicates schematically the procedure of working with the www.advan2tex.eu/portal/ e-learning platform.

2. Description of the e-learning platform

The e-learning platform is multi-language: it has a menu for switching between the languages of the project (Figure 3):

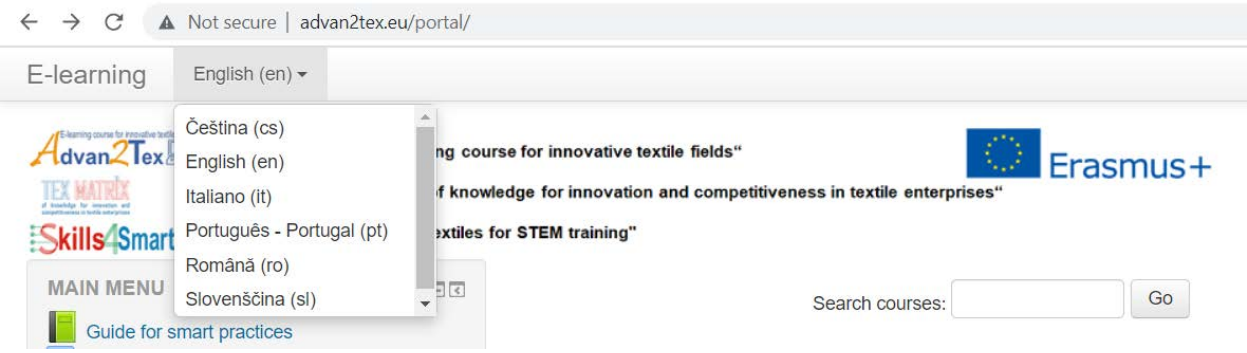

Fig. 3 – Multi-language menu

The Skills4Smartex e-learning course is conceived in six national languages – Czech, Dutch, Portuguese, Romanian, Slovenian and English. The e-learning course is structured in weekly format: the teaching of all modules lasts for three weeks. For each of the seven chapters of the manufacturing chain (Table 1), the course includes:

I. A Book resource with the content of the module

II. A Quiz activity for self-assessment and final multiple-choice tests

III. An embedded PPT presentation with the module in national language

which are conceived for each basic discipline: Mathematics, Physics, Material science and Chemistry and Electrotechnics (Figure 4).

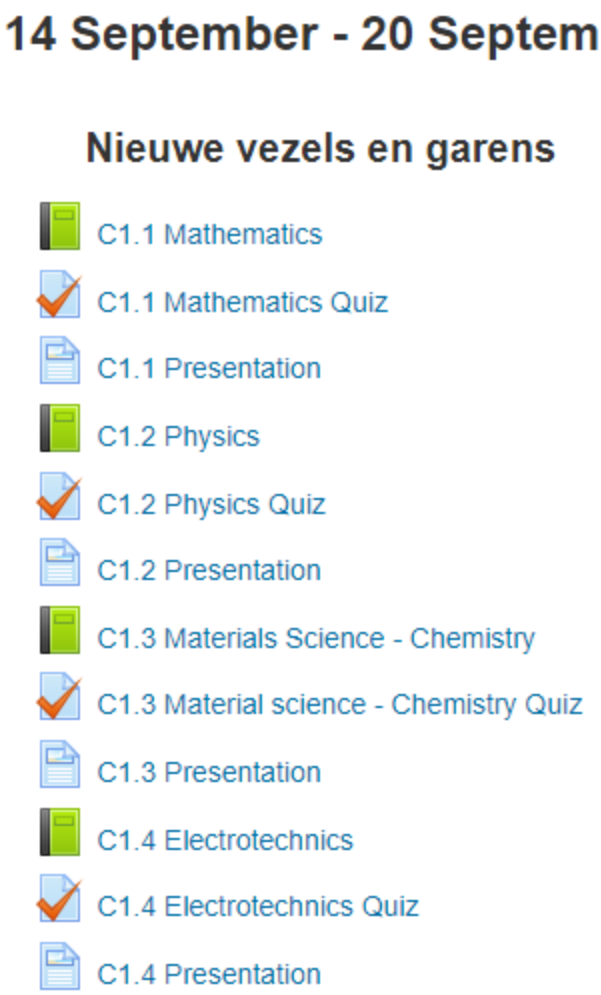

Fig. 4 – The structure of the e-learning course for one chapter

The communication between tutors and trainees is performed via synchronous (Chat) and asynchronous (Forum) methods (Fig. 5).

Welcome to the world of smart textiles!

The subsequent modules are divided into 7 steps of textile technology:

Novel fibers and yarns, materials and methods, virtual prototyping, smart textile design, smart textile prototypes, Data processing and New methods for testing smart textiles.

with each 4 modules on STEM: Mathematics, Physics, Material science / chemistry and Electrotechnics.

Forum for questions and answers regarding the course

Chat sessions lecturers - trainees

Fig. 5 – Communication options between lecturers and trainees

3. Access the course

The procedure to login on the Skills4Smartex e-learning platform:

- Access the URL address www.advan2tex/portal/
- Login with the username and password provided by the national coordinator
- You will have the possibility to enter the following blocks, on the left side of the platform page:
    A. Main Menu
    B. Navigation
    C. Administration

3.1 Main Menu

➔ Access to the Latest News

➔ Access to the Discussion forum

3.2 Navigation

- navigate to: My courses and access the course you are assigned to. Please follow the course by accessing following resources and activities:

- Books with the content of the module:
  - You may navigate back and forward with the arrows
  - You may jump at a certain chapter/ subchapter of the modules by clicking on the table of contents on the right side of the platform's page
- Quizzes with multiple choice questions:
  - You may enter a quiz several times for self-training, after you have red and learned the module's content
- Presentations in national languages:
  - Scroll the embedded PPT presentation
- Forum and chat:
  - You may enter the forum in order to put questions to your lecturer, or
  - You may enter the chat room in order to chat with other colleagues on the course's topics

3.3 Administration

- You may update your profile settings:

* select country, city, timezone
* preferred language

* Upload a user picture by clicking the  icon - > Upload a file -> Browse -> Upload this file

* Introduce optional data in the fields: Additional names, Interests, Optional

C. Contact

For assigning to e-learning course or regarding any question on the working modality of the e-learning platform, please write to the national coordinator of Skills4Smartex. The Skills4Smartex project's partners have following contact data:

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