

Address

FOR FUTURE



WP6: Design of Learning Tools and Platform

Result 5. Workforce Transformation Program Tools and Platform Design

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1. INTRODUCTION

The objective of this work package within the project was to develop a teaching / learning environment out of the classroom and this has become possible over the internet with new technologies. The education sector plays an ever-greater role in the development of new additive manufacturing technologies and processes. Open education aims to allow access to educational, scientific and cultural information despite economic constraints. This accessible, sustainable and unlimited resource, which is offered for engineers, engineering students, employed or unemployed potential technical workforce, industry institutions, academicians will complete the visionary perspective of the project.

AM curriculum and its contents created with the participation of the project partner countries are uploaded to a digital platform that is created as a free, equal and accessible resource. The platform is open now and will continue to remain open and its contents updated to serve the evolving AM technology.

2. AIM

The aim of this work package is to create an open digital platform offering AM curricula developed by international partners. The platform will remain accessible, sustainable, and continually updated, fostering innovation, collaboration, and the widespread adoption of AM education across industries and academia for engineers, engineering students, employed or unemployed potential technical workforce, industry institutions, academicians. Although formal AM education is integrated into curricula in different universities in different countries, on different types and customized subjects, access to educational materials is not possible to entrepreneurs, employees and employers who want to specialize in AM and develop their basic competencies in this field. For this reason, presenting the educational content to be created through online resources both create a platform for these individuals to come together and provide an opportunity to reach a much larger population by providing a great complementary AM education and entrepreneurship opportunities at the same time.

Additionally, this work package aims to conduct benchmark studies with e-learning platforms. All the project partners determined e-learning platforms and tried to find the best for the project.

The ultimate goal of the work package is to provide an online, accessible, sustainable, equal, unlimited source for all the individuals who are interested in AM Technologies for potential work areas in the project time and also after the Project finishes.

3. SCOPE

The scope of this work package covers activities aimed at developing a digital platform for additive manufacturing (AM), benchmarking studies, infrastructure works, service procurement activities, content design, membership models and pilot studies of the platform.

3.1. The scope of activities

1. Benchmarking Studies:

Conducting thorough research e-learning platforms from each partner and having a table of platforms and e-learning programs.

Partner	Platform	Link	Level of Course	Target Audience	Duration	Overall platform organization	Prerequisites and co-requisites	Assessment /verification	Final certificate	Additional material
UNIBO	Coursera	https://www.coursera.org/learn/additive-manufacturing-3d-printing	Undergraduate	Un-Skilled/Non-Technical	1- 4 Weeks - 12 Hours	Recorded lectures (videos) + readings + quiz and final assignment	Not necessary	Quiz and final assignment	Certificate upon completion	Videos
Bursa	Learn skills	https://learn.skills-framework.eu/course/ https://learn.skills-framework.eu/course/view.php?id=5	Technical/Undergraduate, Graduate	Engineer	1Weeks- 3,5 hours (only video)	Voiced ppt lecture video, course information note, Sources, self-assessment test, separate exam registration and page for certification	Not reported	self-assessment test, feedback form, skill browsing	MOOC Exam Registration/ Certification is independent and the exam procedure is mapped onto the ISO 17024 requirements	Not reported
CESOL_1	UDEMY	https://www.udemy.com/course/learn-3d-printing-additive-manufacturing/ https://www.udemy.com/course/fundamentals-of-additive-manufacturing-d/learn/lecture/30902896#overview	Technical/Undergraduate	Un-Skilled/Non-Technical/Technical Persons	7h 30min	Recorded videos + supplemental material	3D objects creation and processing background is preferred but not necessary	Not reported	Certificate of completion	downloaded resources
CESOL_2	ASME	https://www.asme.org/learning-development/find-course/design-additive-manufacturing-metals-professional-package-1/online	Technical/Undergraduate/Graduate	Engineering teams. Design, materials and manufacturing engineers. Business Managers	20 h	Recorded videos + supplemental material + case studies	CAD, knowledge of analysis tools and traditional manufacturing processes	Final exam	Certificate of completion	Not reported
CESOL_3	EAE CESOL	https://www.cesol.es/cursos/adhesivos/2023/INGENIERO-EUROPEO-DE-ADHESIVOS-EAE-2023.pdf	Graduate	Supervisors/Technical Managers	21 weeks; 480 hours (325 distance learning + 155 face-to-face classes)	Sway presentations + supplemental material	University degree in science or related; knowledge in materials suggested	3 Written exams and 1 oral exam	Certificate of completion	Handbooks and recommended articles
EPMA	MIT xPRO	https://learn-xpro.mit.edu/additive-manufacturing	Technical/Undergraduate	Un-Skilled/Non-Technical/Technical Persons	12 Weeks- 48 Hours	video lectures, recorded interviews with academic & industry experts	Not necessary	Peer assessment at the end of every week, Graded Assignment of 20 minutes at the end of the course	Downloadable course certificate from the student dashboard after completion of course	browser-based edX platform that includes multimedia content presentations, three-dimensional part data, & interactive quantitative tools.
InfoTRON	ASTM Center of Excellence	https://amcoe.org/ https://na.eventscloud.com/event/newreg.php?eventid=7511628	Technical/Undergraduate/Graduate	Un-Skilled/Non-Technical/Technical Persons	4 Weeks - September 5 to October 3	Recorded lectures (videos) + readings + live Q&A sessions + Quiz and final assignment	Not necessary	Multiple choice exam	Digital Badge after completion	Not reported
LOT_1	Gen3D	https://gen3d.com/learning/	Technical	Un-Skilled/Non-Technical/Technical Persons	Not reported	3+ hours of video content, 54 pages of detailed course notes, 5 interactive design tutorials (Windows), Industry test cases and worked examples	Individuals with a technical background and a basic knowledge of design and manufacturing	Final test	Certificate of completion	Not reported
LOT_2	Futurelearn	https://www.futurelearn.com/expert-racks/additive-manufacturing	Technical	Non-Technical/Technical Persons	Approx 9 weeks (3 hrs per week)	bite-sized videos, long- and short-form articles, audio, and practical activities	knowledge on additive manufacturing	Final test	Digital certificate validated by the educating organisation	Not reported
LOT_3	Udemy	https://www.udemy.com/course/3d-printing-with-ultimaker-cura/	Technical/Undergraduate	Non-Technical/Technical Persons	42 mins on-demand video	Recorded videos + 6 downloadable resources + quizzes	Not reported	Quiz after each lesson	Certificate of completion	Videos
LOT_4	Udemy	https://www.udemy.com/course/intro-to-3d-printing/	Technical/Undergraduate	Non-Technical/Technical Persons	23.5 hours on-demand video	23.5 hours on-demand video (91 lectures) + 5 articles + 1 downloadable resource	Not reported	Not reported	Certificate of completion	Videos
Coskunoz_1	Future Learn	https://www.futurelearn.com/search?q=additive	Intermediate	Not reported	Approx 9 weeks, 3 hrs per week, 27 hours total	Not reported	knowledge on additive manufacturing	1 exam at the end of course	Complete each course and pass assessments	Not reported
Coskunoz_2	MIT	-	Intermediate	Not reported	12 weeks with 2 weeks off / 5-7 hours per week 8 hours of study + self study	Recorded lectures (videos) + readings + quiz and final assignment+Forms reading assignments, activities	Not reported	Not reported	Not reported	Papers and Standards. Conferences, workshops, and professional societies. References, further reading, glossary and acknowledgment chapters
Coskunoz_3	Open Learn from Open University	https://www.open.edu/openlearn/science-maths-technology/additive-manufacturing/content-section-6 https://abi.gtu.edu.tr/ects/2duzeyyucuncu&modulerders_bilgi_formu&dn=MAK%20538&bolum=109&tip=yukseklisans&dil=en#section-assessment	Beginner	Not reported	Not reported	Not reported	None	None	Certificate of completion	Seminar/presentation
Coskunoz_4	Gebze Technical	https://abi.gtu.edu.tr/ects/2duzeyyucuncu&modulerders_bilgi_formu&dn=MAK%20538&bolum=109&tip=yukseklisans&dil=en#section-assessment	Not reported	Not reported	Not reported	Not reported	Not reported	Written exam, Homework assignment	Not reported	Not reported
Coskunoz_5	Gen3D	https://gen3d.com/learning/	Not reported	Not reported	Not reported	3+ hours of video, 5 interactive design tutorials, course notes, industry test cases	Not reported	Not reported	Not reported	Not reported

2. Infrastructure Works:

After benchmarking activities all the partners worked on the platform models. The two items requested as exceptional costs in the project application, the electronic learning platform and video production expenses, were not accepted by grant authority. At this stage, the project was promoted strongly and a quality platform was provided free of charge. While trying to find the best solution for the platform; CEF collaborated with Enocta. Enocta make the platform free of charge for ADDRESS for Future. During the establishment of the platform, CEF carried out a comprehensive and meticulous study to upload all the content.

3. Content Design:

Within the scope of the Address For Future Project, the first phase of the platform installation process began with the creation of documents to be added to the content. This phase is a critical step in which the Additive Manufacturing Curriculum must be constantly updated and followed meticulously.

In this process, we prioritized the organization and control of presentations. We comprehensively checked the data we had and focused on how to add current information. We also determined new topics by holding one-on-one meetings with professionals and conducting current information research.

4. Membership Model:

Since we received the platform for free, there may be a user quota problem, so it was initially considered to set some criteria for membership. However, since the aim of this project is to make AM, the production methodology of the future, learnable for everyone, Enocta platform management was consulted and the user quota was increased. Thus, a model application was developed for democratized education without setting any membership criteria and the platform was opened to everyone who was interested. All the users of the platforms is going to be member of the system by their own registration.

5. Pilot Studies:

The platform, where digital content is uploaded, is opened to a group consisting of SME and other company representatives, AM Professionals, engineers, trainers, engineering students, employees or unemployed potential technical workforce, for pilot applications with 46 participants.

4. METHODOLOGY

The methodology for this work package consists of benchmarking e-learning platforms, creation of documents, design the presentations for the platform, preparations of quizzes, preparation of videos, integration of documents to the platform.

4.1. The methodology of Design of Learning Tools and Platform

1. Benchmarking:

Each partner filled out a table about their research on platforms and learning environments. For example;

Section1. Overall structure of the E-learning platform and AM course		
		Notes
Title of the Course/Training	ADAS/ADF TESTING AND VALIDATION ENGINEER	
Language of Instruction	English	
Level of Course/Training Unit	Technical/Undergraduate, Graduate	
Platform name / web site	https://learn.skills-framework.eu/DRIVESProject	
Target Audience	Engineer	
Duration	1Weeks- 3,5 hours (only video)	
Overall platform organization	Voiced ppt lecture video, course information note,Sources, self-assessment test, separate exam registration and page for certification	
Type of Course/Training Unit	Standalone/module of course	
Objectives of the Course/Training	The goal of the course is to give you a short introduction about ADAS testing and validation processes.	
Course/Training Content	The training includes 4 lectures based on slides with sounds for: the aspects of the new ADAS testing and validation processes, the basic features of new simulation tools for ADAS function development, the elements of an up-to-date proving ground dedicated to CAV testing and validation, the new test protocols for autonomous driving.	
Prerequisites and co-requisites		Prerequisites: e.g. attendance to previous courses is mandatory/strongly suggested; Co-requisites: e.g. additional knowledge necessary to full understand the contents
Course/Training Coordinator	Dr. Zsolt Szalay,Henrietta Lengyel,Bálint Tóth	
Assessment/verification	self-assessment test, feedback form,skill browsing,	
Final certificate	MOOC Exam Registration/ Certification is independent and the exam procedure is mapped onto the ISO 17024 requirements.	
Name of Lecturers/Trainers	Dr. Zsolt Szalay,Henrietta Lengyel,Bálint Tóth	

Section 2. Teaching material		
Resources		Notes
Suggested main Text Books	There are written texts prepared for each course.	Materials: e.g. articles, books, videos from lab, video tutorials, developed examples ...
Additional material	for each lesson of the course there are audio and video ppt presentations and reading resources.	

Section 3. E-learning Platform & course detailed structure		
Description		Notes
Recorded lectures (videos)	for each lesson of the course there are audio and video ppt presentations and reading	Describe the course structure in relation to the platform capabilities. For example: - PowerPoint presentations - lecturer explains using a whiteboard - the type of assignments - intermediate test is a quiz or open questions, ...
Intermediate tests	There is a self-assessment test after the courses are completed, a feedback section and a separate MOOC registration for certification.	
Assignment (homework)	No homework	
Tutorials	Only dubbed	
Discussion prompt	There is a messaging section inside the system	
Readings	There are articles etc. to read at the end of each lesson.	
repository	Not provided	
other 2		
other 3		

Section 5. ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration (Hours)	Total Work Load
Weekly Theoretical Course/Training Hours	The training period was determined as 1 week. The total duration of the videos of 4 lessons of 50 minutes each is 3.5 hours.		
Weekly Tutorial Hours			
Reading Tasks	Reading documents are placed at the end of each lesson.		
Material Design and Implementation	In the technically prepared presentations, photographs and diagrams were used rather than writing.		
Midterm Exam and Preparation for Midterm Exam	no		
Workshop practices	no		
Final Exam and Preparation for Final Exam	only final exam		
Total Work Load			

Section 7. Detailed Course/Training Contents				
	Content	Structure of the lecture	Main teaching Material	Supplemental material
Lecture/module				
1: title of the module	Vehicle automation overview	There is a 50-minute audio ppt video, lecture notes and reading tools.		
2: title of the module	Simulation tools	There is a 50-minute audio ppt video, lecture notes and reading tools.		
3: title of the module	Laboratory level	There is a 50-minute audio ppt video, lecture notes and reading tools.		
4: title of the module	Limited public road and public road testing	There is a 50-minute audio ppt video, lecture notes and reading tools.		

After these studies completed, all the information brought together. Relevant information about e-learning platform models and detailed course structures are collected.

2. Creation of Documents:

Within the scope of the Address For Future Project, the first phase of the platform installation process began with the creation of documents to be added to the content. This phase is a critical step in which the Additive Manufacturing Curriculum must be constantly updated and followed meticulously.

3. Design of Presentations:

In this process, CEF as the coordinator, prioritized the organization and control of presentations. We comprehensively checked the data we had and focused on how to add current information. We also determined new topics by holding one-on-one meetings with professionals and conducting current information research.

After all these preparations, we created a draft presentation. Each of the draft presentations was revised as a result of the sessions organized with the R&D unit. A total of 25 presentations were revised and finalized as a result of 4 separate meetings. This process shows that over 100 meetings and days of research were conducted just for the presentations.

4. Preparations of Quizes:

After the presentations were determined, 5 questions were prepared for each topic in order to evaluate the effectiveness of teaching. A total of 115 questions were carefully prepared by 7 different experts. Materials such as supporting documents, technology

explanations, and end-to-end production videos of CEF were determined and added to the system.

5. Preparation of Videos:

After the presentation, question and additional material sections were completed, a special shooting room was prepared for the video shooting. Lighting, screen, sound and camera settings were made in the shooting room. The instructors' calendars were closed for the shooting process and a shooting process of approximately 4 months was carried out. Considering the different English levels with 7 different instructors and the maximum video size of the training platform, a total of 36 video edits were made only at the Beginner level.

6. Integration of Documents to the Platform:

The necessary training was received to learn how to integrate documents into the training platform and the system was started to be created. Since the document content was extensive, interviews were held with the platform support team regarding the problems experienced. As a result, a total of four levels of training modules were created:

- 1. Beginner:** 23 Presentation, 36 Video, 23 Quiz
- 2. Intermediate:** 38 Presentation, 46 Video, 24 Quiz
- 3. Advanced:** 38 Presentation, 72 Video, 24 Quiz
- 4. Entrepreneurship:** 9 Presentation, 17 Video

As a result of this comprehensive study, a wide curriculum including a total of 108 Presentations, 171 Videos and 71 Exams has been added to the training platform. This makes the most comprehensive curriculum in AM available across the EU.

7. Current Curriculum

Modules were created from the training schemes prepared in the previous work package and the curriculum was created from the entirety of the modules. Beginner, intermediate and advanced level modules and the entrepreneurship module formed the total curriculum and a design was made in the curriculum to follow each other. Thus, each level targeted new skills to be added to the achievements of the previous level.

Modules of Curricula	Responsible	Courses in Modules
Beginner	CEV	Overview on AM Processes
		Classification of AM Processes
		The ASTM/ISO/NADCAP Classification of Additive Manufacturing Technologies
		Main Characteristics
		Advantages and Manufacturing Monstraints
		Polimer Basic Principles
		Polimer Material Knowledge
		Polimer Constraints
		Polimer Application
		Metal Basic Principle
		Metal Metarial Knowledge
		Metal Powder Metallurgy
		Metal Constraint
		Metal Application
		Design for Additive Main Concepts and Objectives
		Design for Additive 3D Modelling
		Design for Additive Analysis Based Design
		Design for Additive Design Optimization and Topology
		Design for Additive Shape Complexity
		Design for Additive DFAM Rules
		Biomimetic Design Approach
		Main Concepts on the Whole Process Planning Chain (Slicing, Path-Planning, Platform Optimization, Support Generation, Machine Code Generation)
		Use of Common AM Software (Cura, Magics, etc.)

Modules of Curricula	Responsible	Courses in Modules
Intermediate	GAZİ	Introduction to DFAM Module
		Computer Aided Design Tools for AM
		Introduction to Topology Optimization
		Types of Topology Optimization Method
		Workflow of Topology Optimization
		Generative Design
		Biomimetic Design
		Reverse Engineering in AM
		Design Rules for AM Processes
		Design for AM Project/Project Guideline
	UPM	A. Introduction to Performance - Oriented Design and Analysis of Additively Manufactured Components
		B. Design for Optimized/Targeted Mechanical/Functional/Thermal-Fluid Dynamic Performance
		C. Case analysis of representative targeted mechanical/functional performance
		D. Case analysis of representative targeted thermal-fluid dynamic performance
		E. Step-by-step design of representative cases oriented to project presentation
	UNIBO	Process Parameters Selection
		Part Orientation
		Support Generation
		Scanning Strategies
		Process Planning
		Process Parameter Control
		Final Exam

Modules of Curricula	Responsible	Courses in Modules
Intermediate	INFOTRON	Geometrical Dimensions and Tolerances (GD&T)
		Non-Destructive Testing Methods
		Computerized Tomography (CT)
		Mechanical Testing Methods
		Microstructural Analysis
		Scanning Electron Microscope (SEM)
		Surface Topography Measurements Methods

Modules of Curricula	Responsible	Courses in Modules
Advanced	UPM	A. Introduction to Numerical Simulation of AM Processes
		B. Thermal, Mechanical and Microstructural Modeling of AM Processes
		C. Numerical Tools for the Specific Simulation of Phase-Change Processes in AM
		D. Numerical Tools for the Specific Simulation of Single Tracks Consolidation by AM
		E. Numerical Tools for the Integrated Simulation of Full Scale Components Consolidation by AM
		F. Step-by-Step Simulation Analysis of Representative Cases Oriented to Project Presentation
	CESOL	Surface Enhancements Methods (General Considerations)
		Surface Enhancements Methods (Subtractive Enhancement Method)
		Surface Enhancements Methods (Plastic Deformation)
		Heat Treatment
		Support Removal and Finishing

Modules of Curricula	Responsible	Courses in Modules
Advanced	EPMA	Historical Development of Standards
		Standardization Bodies and Technical Committees
		Review of AM Standards
		Qualification Certification
		Role of Standards in AM Processes
		Cost Analysis Modelling
		Sustainability in AM
		III Well Structured Costs
		Illustrative Example
	INFOTRON	AI in AM
		Micro-Nano Printing
		Bioprinting
		4D Printing
		Hybrid AM
		FGM and Smart Materials
		Environmental and Social Implications
	GAZİ	Practical Application Theoretical
	UNIBO	Structural Design for AM
		WAMM Technology and Manufacturing
		WAAM Application and Testing

Modules of Curricula	Responsible	Courses in Modules
Entrepreneur Virtual Training	UNIBO	Testing Entrepreneurship Features, Business Idea Activity Description (Including Profile of Participants Per Organisation, Goals and Results of the Activity) Development and Creativity Exercises
		The Concept of Business Plan and its Components (Market Research, Marketing Plan, Production Plan, Management Plan, Financial Plan)
	CESOL	Workshops to Reinforce Business Plan Elements (Market Research, Marketing Plan, Production Plan, Management Plan, Financial Plan)
		Business Model and Enterprise Strategies
	CEV	Issues to Be Considered in Writing and Presenting the Business Plan
		Entrepreneurial Person Profiles and Evaluating Opportunities
	LOT	Enterprise Finance and Financial Management
	GAZİ	AM-Themed Entrepreneurship Examples and Hands-On Learning Contents

4.2. Documents Prepared by Legal Authorities:

The methodology for the preparation of legal documents involves a systematic approach to design and develop effective and relevant process.

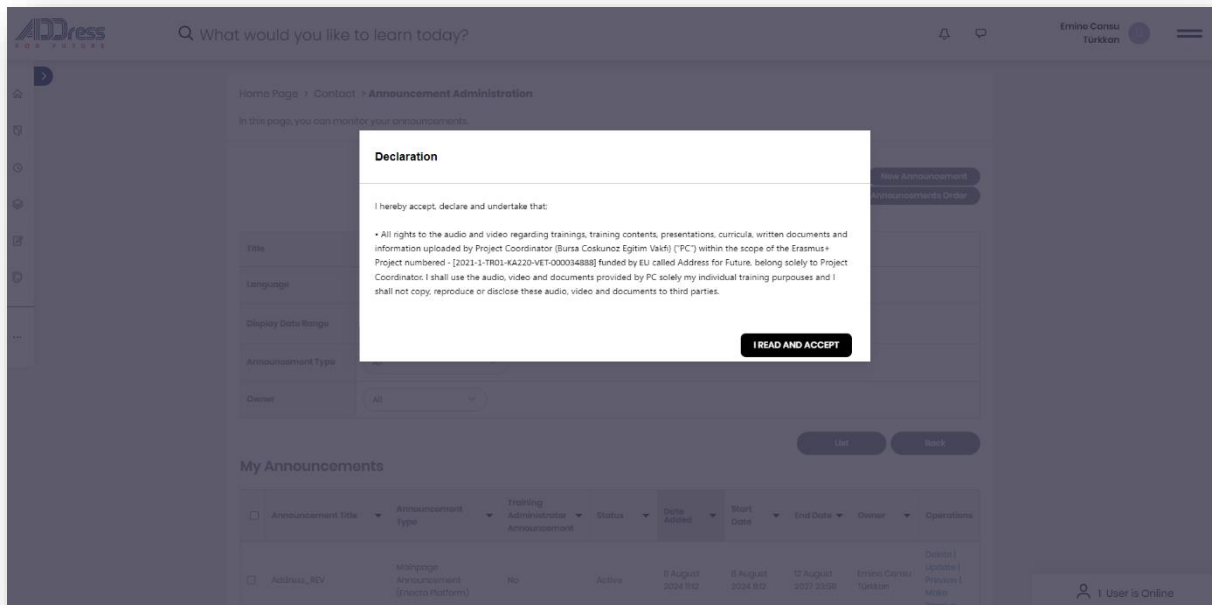
1. Declaration of Trainees:

The trainings provided on online platforms contribute to the democratization of education, but at the same time, a lot of personal data is transferred and may also include the intellectual property of different parties. Due to the governance model of this project, it is also important within the general EU framework to prevent information sharing without giving the project name or without permission.

For this reason, the Project Coordinator's lawyers were consulted in kind contribution and the document seen below was prepared for those who follow and benefit from the trainings. This document is seen and approved by all trainees registered in the system.

"I hereby accept, declare and undertake that;

• All rights to the audio and video regarding trainings, training contents, presentations, curricula, written documents and information uploaded by Project Coordinator (Bursa Coskunoz Egitim Vakfı) ("PC") within the scope of the Erasmus+ Project numbered - [2021-1-TR01-KA220-VET-000034888] funded by EU called Address for Future, belong solely to Project Coordinator. I shall use the audio, video and documents provided by PC solely my individual training purposes and I shall not copy, reproduce or disclose these audio, video and documents to third parties."



The screenshot shows the 'Announcement Administration' page of the Address for Future platform. A modal window titled 'Declaration' is open, containing the following text:

I hereby accept, declare and undertake that:

- All rights to the audio and video regarding trainings, training contents, presentations, curricula, written documents and information uploaded by Project Coordinator (Bursa Coskunoz Egitim Vakfı) ("PC") within the scope of the Erasmus+ Project numbered - [2021-1-TR01-KA220-VET-000034888] funded by EU called Address for Future, belong solely to Project Coordinator. I shall use the audio, video and documents provided by PC solely my individual training purposes and I shall not copy, reproduce or disclose these audio, video and documents to third parties.

Below the text is a button labeled 'I READ AND ACCEPT'.

The background page shows a sidebar with navigation links and a main area with a search bar and a table titled 'My Announcements'.

Announcement Title	Announcement Type	Training Administrator	Status	Date Added	Start Date	End Date	Owner	Operations
Address_REV	Homepage Announcement (Erasmus Platform)	No	Active	8 August 2024 10:2	8 August 2024 10:2	12 August 2027 23:59	Emine Cosku Turkan	View Update Delete Print

At the bottom right, it says '1 User is Online'.

2. Consent Form Regarding Personal Data:

Likewise, since the personal informations of trainees can be used to run the activities of Address for Future project, a consent is also requested before entering the systems. All the users of the platform is signing a consent form while registering so the personal data of them will be safe.

"Required by European Union General Data Protection Regulation 2016/679 ("EUGDPR") and

6698 numbered Turkish Personal Data Protection Law ("KVKK")

Project Coordinator and Project Partners (hereinafter referred to together as "PC and PP") is collecting your personal data for the Erasmus+ Project numbered - [2021-1-TR01-KA220-VET-000034888] funded by EU called Address for Future) ("Project"), which is EU's program to support education, training, youth and sport in Europe.

Project Coordinator and Project Partners are the controller of your personal data. You may contact Project Coordinator, Bursa Coşkunöz Eğitim Vakfı at Bursa Organize Sanayi Bölgesi Sarı Cad. No.1 16140 Bursa, Türkiye or email at: info@coskunozegetimvakfi.org.

The categories of personal data you are being asked to consent to PC and PP's collection, use and storage are;

1. Name and surname
2. Address and e-mail address
3. Age
4. Education (last graduated school/university/institute)
5. Occupation
6. Employment Status
7. Citizenship and Country of Residence

Your personal data will be used for the following purposes:

- ☐ communicating activities such as trainings, meetings, competitions, conferences etc. to be held within scope of the Project;
- ☐ measuring effectiveness of trainings;
- ☐ announcement of social activities;
- ☐ publication for promotion activities;
- ☐ reporting to granting authorities.

Your personal data will be stored for a period of five (5) years for the following purposes:

- ☐ Retrospective analysis of the Project;
- ☐ creation of a qualified trainee pool;
- ☐ Proof of realization of Project;
- ☐ promotion activities;
- ☐ evaluation of the Project success;
- ☐ communicating job offers.

PC and PP will share your personal data with third party software providers who collect, store and process your personal data on behalf of PC and PP and who are contractually obligated to keep your personal data confidential subject to appropriate safeguards to prevent it from unauthorized disclosure.

Your personal data will be transferred out of the European Union to Bursa Coşkunöz Eğitim Vakfı located in Türkiye.

Your personal data will also be stored in accordance with the record retention requirements applicable to Bursa Coşkunöz Eğitim Vakfı as a foundation of Türkiye, and applicable Turkish Laws and Regulations regarding data protection.

Under the EUGDPR and KVKK, you have the right to request access to, rectify, erase and restrict the processing of your personal data. You also have the right to revoke this consent to use your personal data. If you feel PC and PP has violated the EUGDPR and/or KVKK, you have the right to file a complaint with the appropriate authority.”

3. Commitment Regarding Educational Content:

All the trainers who have videos on the platform signed the commitment.

“With this Commitment;

The trainings given within the scope of the Address for Future project numbered 2021-1-TR01-KA220-VET-000034888, which was granted within the scope of the Erasmus + Program, were prepared or presented by me in advance within the scope of the contents, presentations, curricula, written documents and information of the trainings. I declare that the ownership of all visual and audio recordings in these face-to-face and distance trainings, whether published on social media, applications or channels, belongs to me and that I do not violate the property rights of third parties. If the opposite is determined otherwise, I am responsible for all damage that may occur.

I acknowledge that I have not violated the property rights of third parties and that I am responsible for all damages that may arise if opposite is determined.

I have handed over the right to process all kinds of visual and audio records arising from intellectual and industrial property law, to reproduce them, to publish them, to transmit them to the public through sign, sound and/or image transmission, and to use them in any environment and in any way, within the scope of the project, as free of charge and irrevocably, to Project Coordinator and Project Partners. I have irrevocably waived all my rights in the platform published as of the date of transfer, and in this context, I will not make any rights or demands under any name to Project Coordinator and Project Partners.

Since I cannot properly benefit from the financial rights regarding all image and sound recordings, I will never exercise my right of withdrawal in any way.

Within the scope of my letter of undertaking, within the scope of the project, Project Coordinator and Project Partners will be able to dispose of its rights unconditionally. In this context, Project Coordinator and Project Partners may have the right to use its rights

for use by someone else, or may transfer these to another person for a certain period of time or indefinitely.

I hereby consent to the publication of records containing written content, presentations and audio or video belonging to me, in relevant records, social media, applications and channels, and in all appropriate media, including, but not limited to, for the specified period.

I will not reproduce in any way the written content, presentations, audio, video and visuals shared with me for the purpose of preparing the contents to be prepared or presented by me or other teachers/instructors within the scope of training, information and chat programs, and I will not share them with third parties.

I declare, accept and undertake.

Committed to:

Name/Surname/Date/Stamp/Signature

Identity Number:

Address:"

5. FEATURES OF THE PLATFORM:

The platform has a lot of features, registration procedures, statistics about users, platform parts, evaluation surveys, menus etc which can be seen in the link of

<http://addressforfuture.myenocla.com/>

5.1. Target Group of the Platform:

Engineers, engineering students, employed or unemployed potential technical workforce, industry institutions, academicians and also for entrepreneurs, employees and employers who want to specialize in AM and develop their basic competencies in this field.

5.2. Registration to the Platform:

There is a registration form containing Name, Surname, E-mail Address, Company, Department and consent forms:

addressforfuture.myenocata.com/addressforfuture/eep/Login/register/1

[< BACK TO HOME PAGE](#)

Address FOR FUTURE Registration Form

Name *

Surname *

E-Mail Address *

Company *

Department *

☐ EXPLICIT CONSENT FORM *

☐ GENERAL DATA PROTECTION REGULATION CONSENT FORM *

ENROLL

When the user fills the form a verification code comes to the e-mail address:

addressforfuture.myenocata.com/addressforfuture/eep/Login/verification?CCRF=14233185-2493-42dc-aff7-de579ccf66af

Address FOR FUTURE Registration Form

Verification Code

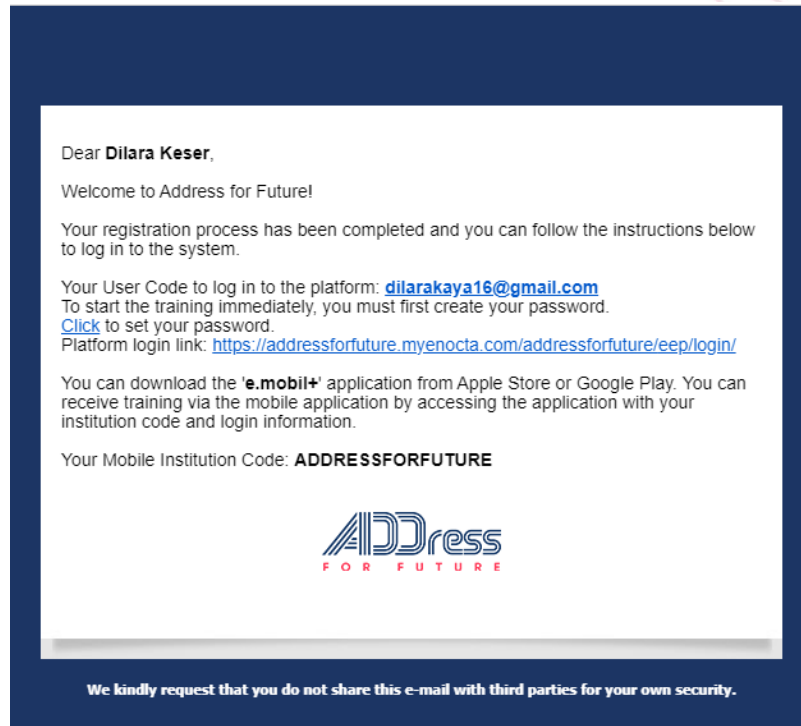
Enter the 6-digit verification code sent to your e-mail address to complete your registration.
Time left before you can enter the verification code: **58:57**

SUBMIT

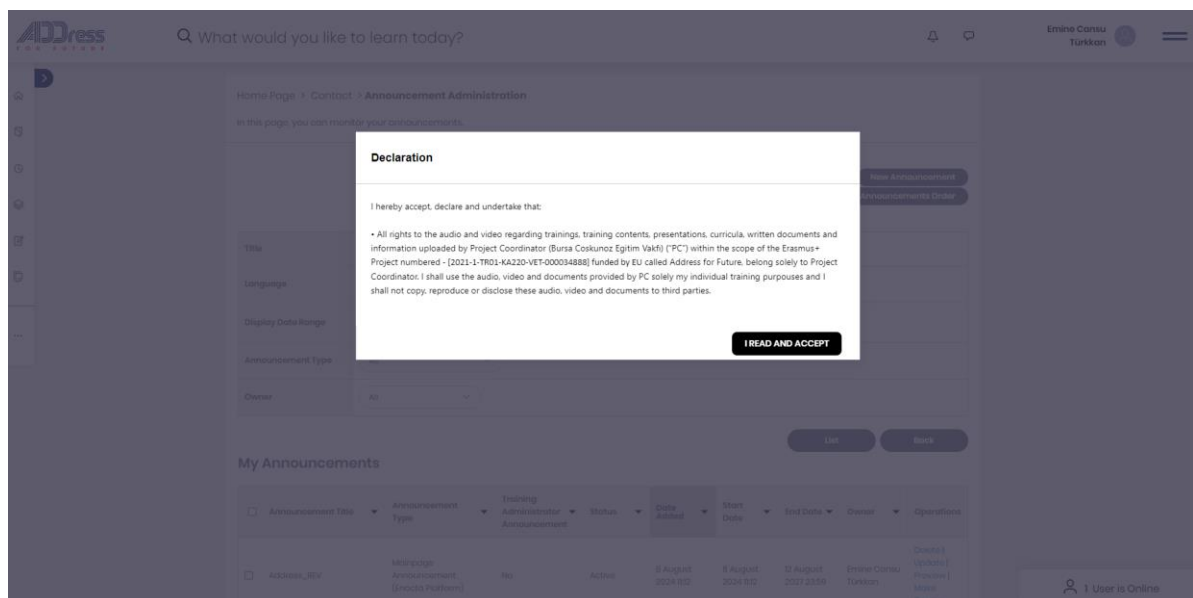
Verification code not received, [Send again](#)

[Back To Home Page](#)

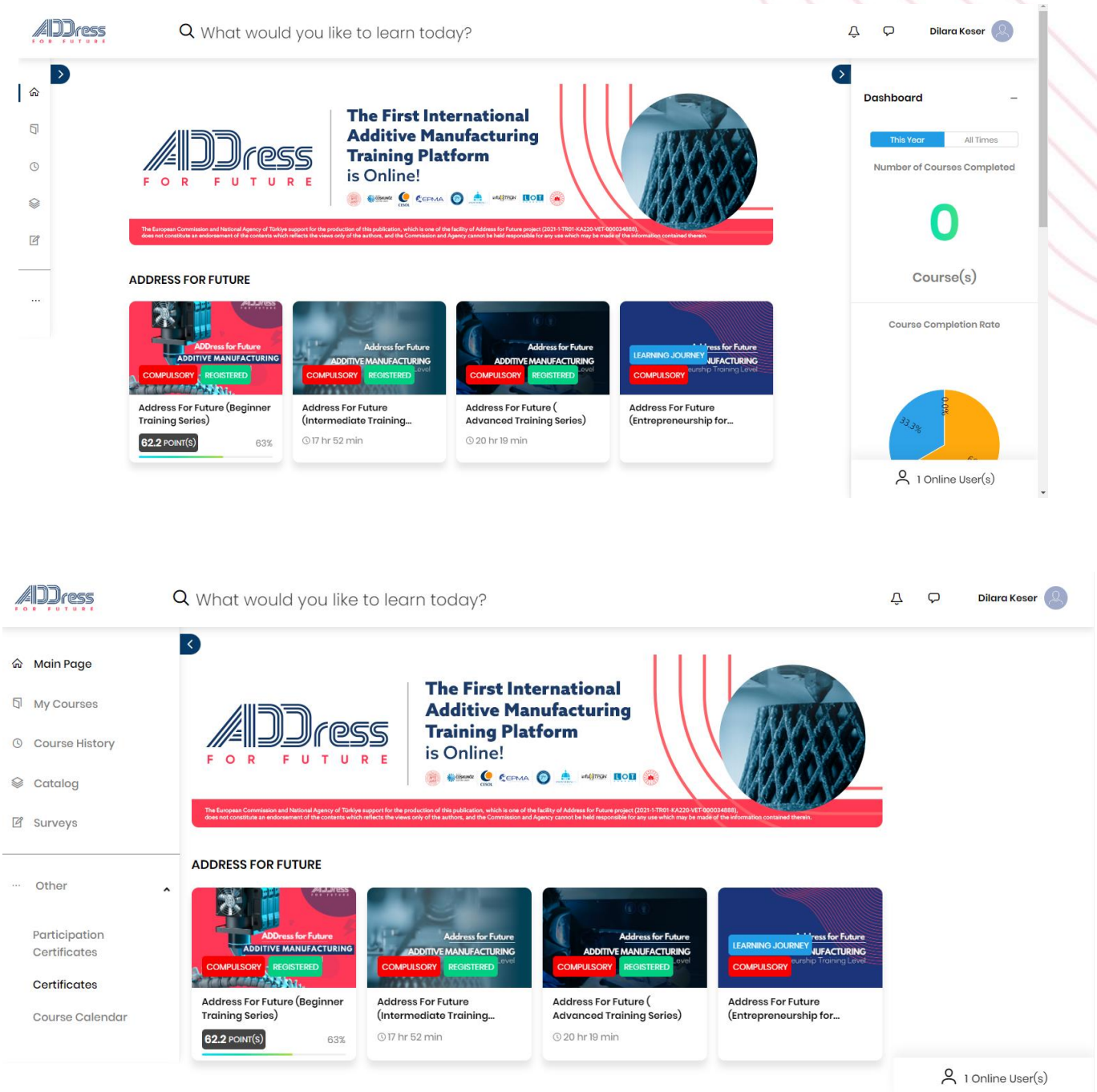
After all, the user has the message and starts to use the platform.



Also Personal Data Protection Authority should be approved.



5.3. How to Use the Platform:



The screenshot displays the Address for Future platform interface. At the top, there is a search bar with the text "What would you like to learn today?". The main content area features a large banner for "The First International Additive Manufacturing Training Platform is Online!" with the Address for Future logo and a list of logos including Erasmus+, CERMA, and others. Below the banner, there are four course cards for "Address for Future ADDITIVE MANUFACTURING" (Beginner, Intermediate, Advanced, and Entrepreneurship series). Each card shows the course title, duration, and completion status. On the right side, there is a "Dashboard" section for user "Dilara Keser". The dashboard includes a "Number of Courses Completed" section showing 0 courses, a "Course Completion Rate" section showing a pie chart with 33.3% completion, and a "1 Online User(s)" indicator.

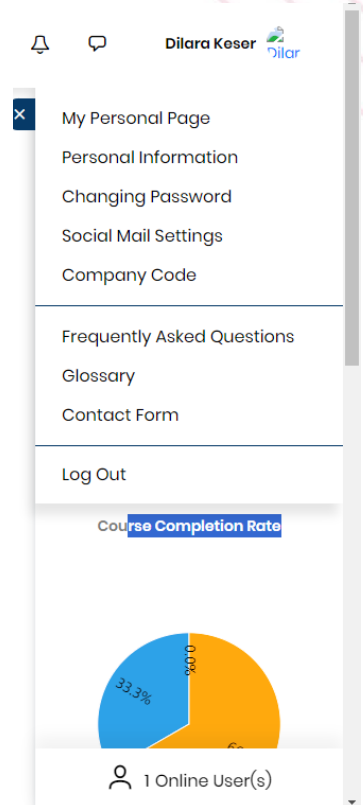
The main page of the platform contains;

- Search Bar,
- Training Series (Beginner, Intermediate, Advanced and Entrepreneurship),
- Dashboard,
- Course Completion Rates,
- Number Of Completed Courses,
- Online User Number,

- Main page,
- My Courses,
- Course History,
- Catalog,
- Surveys,
- Participation Certificates,
- Course Calendar,

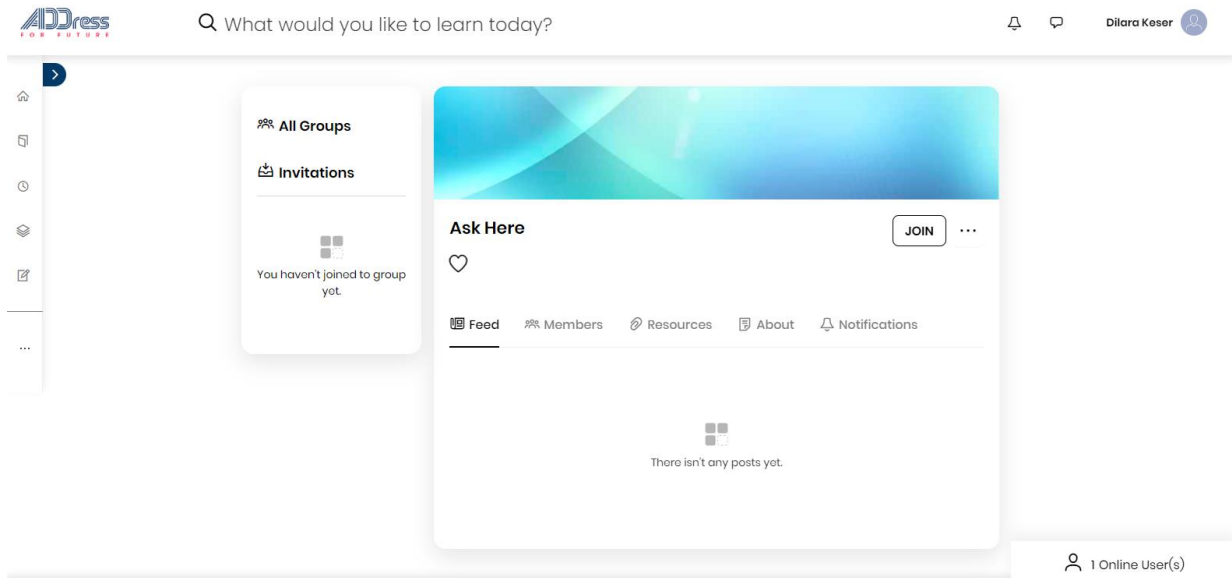
When clicking to the name of the user the following tabs will appear;

- My Personal Page,
- Personal Information,
- Changing Password,
- Social Mail Settings,
- Company Code,
- Frequently Asked Questions,
- Glossary,
- Contact Form,
- Log Out.



The image shows a user profile dropdown menu for 'Dilara Keser'. The menu is open, displaying a list of options: 'My Personal Page', 'Personal Information', 'Changing Password', 'Social Mail Settings', 'Company Code', 'Frequently Asked Questions', 'Glossary', 'Contact Form', and 'Log Out'. Below the menu, there is a 'Course Completion Rate' section with a pie chart showing 33.3% completion. At the bottom, it indicates '1 Online User(s)'.

There is a 'Social Group' link that all the participants can share any information, see resources, make groups and have a network about AM. Everybody can ask and answer questions at this part.



More Features of the trainings;

- Users can have the courses by clicking on them. While watching the presentations click a slide and should be waited for 3 seconds to pass the slide. There are additional materials for the parts needed. There are recommended youtube videos for some of the courses.
- There are exams which the user should have 60 points, if not s/he will watch the video again. 5 questions for each exam and the user can have the exam until s/he passes. Users can have certificates for each part.
- If the user wishes, s/he can switch to intermediate courses without taking beginner courses but cannot take advanced without taking intermediate courses.
- There are Turkish and English Languages at the platform.
- There are additional materials for the subjects if needed and there are recommended youtube videos.
- There are surveys for each training to learn if the user has enough benefit from the trainings.

5.4. Surveys:

Since the platform will continue after the project and the focus is on continuously improving the content with regular feedback, surveys have also been added to the platform. Users are specifically asked to fill out the survey about their experiences.

Note: When evaluating the 5 scale questions:

5: I totally agree, 1: I strongly disagree

1 Did the training provide you with new professional knowledge and skills that you can share with your colleagues?

☒ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

2 Did the training provide new knowledge and skills that I can apply in my organization?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

3 Did the training increase your motivation?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

4 Did/will the training contribute positively to your professional development?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

5 Does the trainer associate the content of the training with case studies?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

6 Does the trainer use visual and auditory tools effectively in presentations?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

7 Were the topics clear, understandable and appropriate for your level?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

8 Did the trainer have a good command of the subject and sufficient knowledge?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

9 Was the training method and technique appropriate for understanding the subject?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

10 Was the content of the training appropriate and sufficient?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

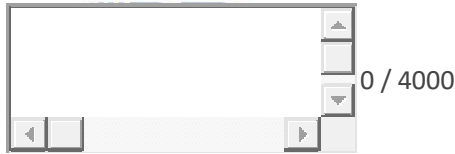
11 Is the training time sufficient?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

12 Were there not enough/explanatory visuals or videos in the presentations?

0 / 4000

13 Are there any topics that you would like to be explained in more detail in the training?



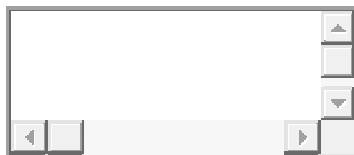
14

Is there any additional topic you would like to be added to the training?



15

Which topic remained in your mind in detail after the training? (Examples given in the presentation, examples given verbally by the trainer, videos or visuals in the presentation, etc.)



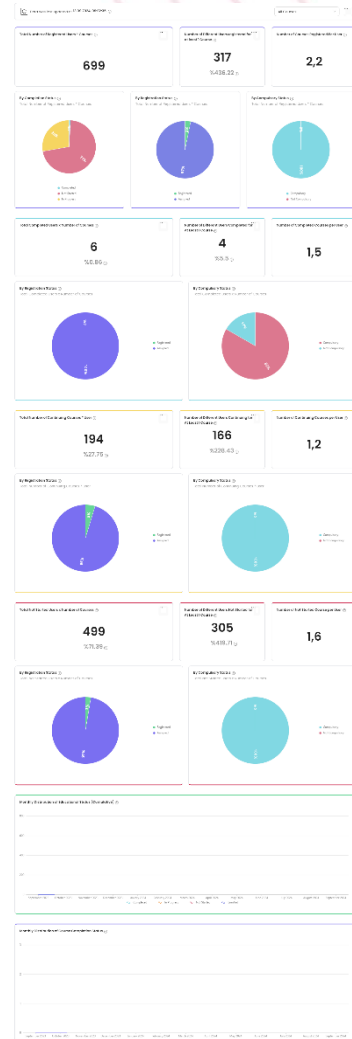
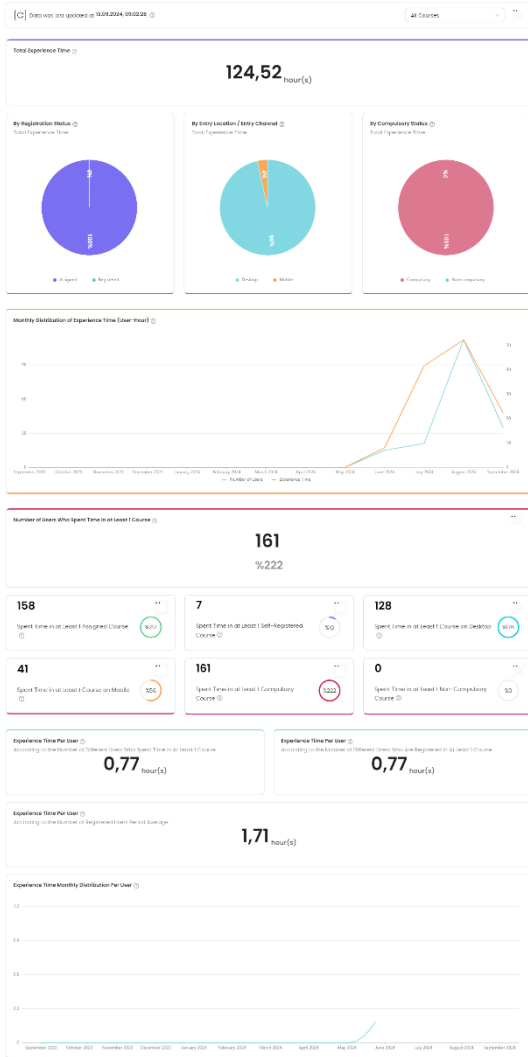
In the surveys applied in likert type questions; 75% of the users answered “I strongly agree” 1, 2 and 3, 62% in questions 4 and 5, 88% in questions 6, 9, 10 and 11, and 100% in questions 7 and 8. These rates indicate that the satisfaction rates of the users are high. None of the questions were marked as “I strongly disagree” or “I disagree”. This shows us that the trainings were evaluated positively.

When we look at the general answers to the open-ended questions, there is a common opinion among the users that the presentations and videos are sufficient. It is planned to make the necessary arrangements and additions in the future according to the feedback received from the survey results.

5.5. Statistics:

Admin can see a lot of statistics about the platform. For example;

- If any user registered the system more than one
- The completion rates of the trainings and exams
- The success rates exams
- Total time spent and time spent per person
- Content based completion chart
- Content based experience time chart
- Exam score average
- Success Rate for each exam
- Activity Evaluation Survey Response Rate



6. DISSEMINATION

Platform launched for all EU Levels of target groups. There were 3 levels of communication to encourage platform use. These levels are called mainstreaming, multiplication and sustainability.

First of all, the partners announced the opening of the platform to their entire networks with the prepared visuals. The platform was announced on the official online accounts of Address for Future. Announcements about the platform were also made in areas such as EPALE.

In addition, a detailed presentation about the platform was made at the Address for Future Network Members Conference and Contest Ceremony, and this broadcast was shared on YouTube in Turkish and English.

The dissemination activities in this work package can be examined in Appendix 35. Utilization of Results Report.

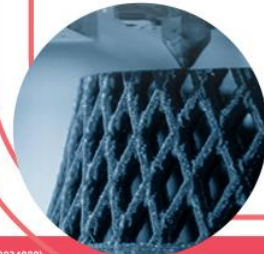


The slide features logos at the top: Türkiye Ulusal Ajansı, Co-funded by the Erasmus+ Programme of the European Union, and Erasmus+. The title is "Europe's Most Comprehensive Additive Manufacturing (AM) Curriculum has been launched". Below the title, a list of bullet points describes the curriculum's features, and a row of logos represents the participating organizations. The Address for Future logo is in the bottom left corner.

- Prepared by more than 20 AM experts from
- Personalized Learning by Level of Individual
- Three Level Certification as Beginner, Intermediate and Advanced
- More than 50 hours videos, presentations and exams
- Free of Charge
- Click on <https://addressforfuture.myenocla.com>

Logos included: TÜRKİYE ULUSAL AJANSI, Co-funded by the Erasmus+ Programme of the European Union, Erasmus+, and various partner logos including COSKUNÖZ, CESOL, EPMA, and others.

The First International Additive Manufacturing Training Platform is Online!



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Funded by
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Future production method at your fingertips!

EUROPE'S MOST COMPREHENSIVE ADDITIVE MANUFACTURING (AM) CURRICULUM LAUNCHED

Prepared by
more than
20 AM experts

Personalized
Learning by Level
of Individual

More than 50 Hours
Videos, Presentations
& Exams

Three Level Certification
as Beginner, Intermediate
& Advanced

Click on:

addressforfuture.myenacta.com

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FREE OF CHARGE

7. CONCLUSION

As a conclusion the Work Package 6 of the ADDRESS for Future Project is an e-learning platform containing Beginner, Intermediate, Advanced Level Additive Manufacturing Trainings besides Entrepreneurship Trainings.

The aim of the work package is to provide an online, accessible, sustainable, equal, unlimited source for all the individuals who are interested in AM Technologies for potential work areas in the Project time and also after the Project finishes.

The most important output of this work package is the e-learning platform. 108 Presentations, 171 Videos ve 71 Exams added to the platform as beginner, intermediate, advanced levels for AM and entrepreneurship trainings.

As project partners, we aimed to reach the target of 350 people on the platform by the end of the project, but as of October, the number of users exceeded the target and for this reason, additional quota was purchased from the platform.

Modules	Participant Number
Address For Future (Beginner Training Series)	400
Address For Future (Intermediate Training Series)	400
Address For Future (Advanced Training Series)	61
Address For Future (Entrepreneurship for Manufacturing)	16

No. of Users in platform as of October, 24

There are 400 registered users of the platform for now. It's open for engineers, engineering students, employed or unemployed potential technical workforce, industry institutions, academicians, entrepreneurs and any people who wants to know about Additive Manufacturing. There are 239 student, teacher and academican, 46 trainees from abroad, 11 unemployed persons as user of the platform as of October 2024.

ADDRESS for Future Project achieved its goal for this workpackage.



addressforfuture.com