Report on the training activities and materials developed

Deliverable 7.5

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0	07/03/2024	Helena Vilaça	Template for the report
1	26/05/2025	Helena Vilaça	Submitted version of the report, with inputs from MAGELLAN CIRCLE

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List of Abbreviations

Acronyms	Description
D	Deliverable
EU	European Union
GA	Grant Agreement
KPIs	Key Performance Indicators
M	Month
MOOC	Massive Open Online Course
PPT	Power point
R&I	Research and Innovation
T	Task
VC	Value Chain
W2BC	**Waste2BioComp**

1. Executive Summary

Deliverable D7.5 presents the results of Task 7.3 – Training a skilled workforce in biomaterial-based manufacturing activities for the textile, footwear, and packaging value chains (VCs), implemented under Work Package 7 of the **Waste2BioComp** (**W2BC**) project. The overarching objective of this task was to support the transition towards sustainable manufacturing in the textile, footwear, and packaging value chains by training students, professionals, and industry stakeholders in innovative, bio-based technologies developed throughout the project.

Over the project lifecycle, partners successfully designed and delivered the required training sessions, including lectures, workshops, hands-on sessions, and learning modules, reaching a diverse and multidisciplinary audience across Europe. These activities integrated technical knowledge, practical skills, and real-world case studies related to topics such as:

- Bio-based polymers and composites
- Inkjet printing with bio-based inks
- Thermal analysis and processing of bioplastics
- Sustainability strategies (e.g., life cycle assessment, end-of-life alternatives)

The training was carried out in multiple formats (in-person, online, hybrid) and in several languages, with English as the base language and translations or subtitles provided to ensure broad accessibility. Where possible, training sessions were evaluated through structured feedback via participant satisfaction surveys. In some cases, participation was certified. All materials were made publicly available through the project website.

The approach was coordinated via a shared planning matrix and aligned with a set of internal guidelines developed early in the project. Training efforts were documented and reported by each partner, and subsequently synthesised in this deliverable.

By the end of the project, **W2BC** contributed to building a skilled workforce capable of driving innovation in sustainable biomaterials manufacturing, fulfilling its training-related KPI and reinforcing its societal and industrial impact.

2. Introduction

The **W2BC** project (*Converting Organic Waste into Sustainable Bio-Based Components*) addresses one of Europe's key innovation challenges: the replacement of fossil-based materials with sustainable, bio-based alternatives across industrial value chains. In doing so, the project supports the twin objectives of the European Green Deal and the EU Circular Economy Action Plan, aiming to enable climate neutrality, resource efficiency, and sustainable industrial transformation.

To achieve not only technical innovation but also ensure market readiness and uptake, the project embedded a strong capacity-building dimension through Work Package 7: Dissemination, Communication, Training, Exploitation, and Innovation Management. Within this work package, T7.3 – Training for a skilled workforce in biomaterial-based manufacturing activities for the textile, footwear, and packaging VCs, was designed to equip professionals, students, and industry stakeholders with the knowledge and skills required to engage with the novel materials, processes, and business models developed by **W2BC**.

The training programme pursued three main goals:

- Bridging the gap between scientific outcomes and industrial application, by translating R&I results into accessible and practical learning resources;
- Developing sector-specific skills aligned with the textile, footwear, and packaging industries, which were the core VCs targeted by the project;
- Contributing to European strategic objectives, including upskilling initiatives under the Pact for Skills, and fostering innovation ecosystems that support sustainable, competitive manufacturing.

This training effort was implemented within the collaboration of a group of partners, including CITEVE (Portugal), HSKL (Germany), IVW (Germany), UDC (Spain), NORA (Germany), and PROPAGROUP (Italy).

These partners collectively brought technical know-how in advanced materials, manufacturing processes, polymer science, and educational design.

The original objective defined in T7.3 was the delivery of a minimum of 26 training sessions. These sessions were to be diverse in format, ranging from workshops and technical lectures, to hands-on lab trainings and online courses, and were to be tailored to a broad target audience, including:

- Industry professionals and workers in manufacturing environments;
- Students in chemistry, materials, or engineering disciplines;
- Researchers, SMEs, and innovation stakeholders across the three targeted VCs.

In addition to pedagogical quality and technical content, the programme also emphasised:

- Multilingual accessibility: with materials produced in English and/or translated or subtitled for local audiences;
- Online openness: with many materials made freely available via the project website;
- Evidence-based evaluation: using satisfaction surveys and feedback loops to measure outcomes and iterate.

This deliverable presents a detailed and structured account of the planning, execution, and outcomes of T7.3, and outlines the resources produced and lessons learned during implementation. It reflects the project's commitment not only to innovation but also to replicability, knowledge transfer, and long-term skills development within Europe's green transition.

3. Implementation approach

The implementation of the **W2BC** training programme under T7.3 was grounded in a flexible, partner-driven model. While a set of guidelines was established to ensure a coherent identity and minimum quality standards for training materials, each partner retained full autonomy over the design, content, and format of their respective training sessions. This approach allowed the consortium to tailor activities to their institutional strengths, local contexts, and target audiences.

Early in the task, there was a coordinated preparation of a practical guidance document to support partners in planning and executing their training activities (Annex 1). These guidelines provided clarity on the purpose of the training in supporting the project's innovation uptake, target sectors (textile, footwear, packaging) and audiences (students, researchers, industry professionals), minimum structure for describing each session (training plan templates), visual and editorial coherence of materials (e.g., PowerPoint style, use of logos, slide formatting), and recommendations for evaluation and certification.

Nevertheless, no strict methodology, phasing, or content requirements were imposed. Partners were encouraged to act based on their expertise and institutional capabilities, ensuring that all training reflected the core innovations of **Waste2BioComp**, but without prescribing how that should be achieved.

Training sessions varied widely in format and topic, as each partner proposed their contributions. The group convened and agreed on several practical aspects. Each session should include or highlight content related to **W2BC** innovations. There was no restriction on format, allowing a mix of workshops (e.g., hands-on lab work, prototyping, printing techniques), lectures (e.g., theory-based presentations, online seminars), and training sessions (e.g., full-day or module-based education). Materials could be delivered in local languages, but core materials or outputs had to be made available in English (including subtitles for videos where applicable). Outputs were encouraged to include:

- Presentation files (PPTs);
- Recordings or summaries;
- Attendance tracking;
- Satisfaction or learning feedback.

The consortium decided that while certificates and feedback forms were desirable, they would not be enforced uniformly across all sessions. Instead, each entity was free to implement them as suited their delivery method and audience.

CITEVE developed and shared a T7.3 Activities Matrix, enabling each partner to:

- List their proposed training activities;
- Indicate session title, format, topic, target group, timing, and language;
- Update their progress throughout implementation.

The matrix acted as a live coordination tool, not a controlling document. It helped MAGELLAN CIRCLE track overall progress towards the task's initial goal of a minimum of 26 training activities. The matrix also made it possible to monitor:

- Coverage across the three target value chains;
- Thematic balance across technical and sustainability topics;
- Partner distribution and workload.

While the content of each session was independently developed, the consortium collectively agreed to:

- Ensure visual consistency in public-facing materials (e.g., logos, fonts, layout);
- Use PowerPoint templates that could eventually be used in video lecture format;
- Avoid the use of copyrighted images unless properly attributed.

This ensured a degree of coherence in project identity without compromising partners' freedom to tailor sessions to their audiences and specialisations.

4. Overview of activities

Throughout the implementation of T7.3, the **W2BC** consortium delivered a diverse and technically rich portfolio of training activities aimed at supporting the development of a skilled workforce in biomaterial-based manufacturing. These activities were planned and executed autonomously by each partner, based on their respective expertise, infrastructure, and stakeholder networks. This decentralised model ensured strong alignment between the training content and the practical realities of the three VCs targeted by the project — textiles, footwear, and packaging — while maintaining flexibility in terms of delivery mode, duration, and audience engagement.

To facilitate coordination and ensure a baseline level of coherence across all contributions, partners were invited to fill in a shared matrix, which captured the essential details of each training session. This tool enabled the task leader, MAGELLAN CIRCLE, to consolidate information across the consortium and ensure that the task's global objective — to implement a minimum of 26 training activities — would be achieved with thematic and geographical balance. The matrix also allowed for monitoring of key elements such as session format, topics addressed, number of participants, and materials produced.

The training activities developed under **W2BC** were varied in nature. They included hands-on workshops, lecture-style sessions, and more structured training days. Some focused on technical processes, such as inkjet printing with bio-based inks, spray-coating and wet-spinning techniques, or the thermal analysis of biopolymers. Others approached the field from a materials science perspective, with in-depth exploration of natural macromolecules, composite structures, and biodegradable materials. Several sessions addressed cross-cutting issues such as sustainability, life cycle thinking, and innovation in the manufacturing of sustainable components for shoes and technical textiles.

Partners such as CITEVE, HSKL, and IVW contributed multiple training modules that combined theoretical content with practical demonstrations, while institutions like UDC and PROPAGROUP leveraged their laboratory capacity and pedagogical experience to engage more specialised target groups in the packaging VC. In total, the sessions were delivered in locations including Portugal, Spain, Italy and Germany, with audiences ranging from industry professionals and R&D teams to students in applied chemistry, engineering, and material sciences.

Most of the sessions lasted between 1 and 2 hours, depending on the content and format, and participant numbers ranged from small, focused groups of 5–10 individuals to larger lecture audiences of up to 25 participants, with one session reaching 64 participants. The overall balance was 389 participants. While most sessions were held in person, some were recorded, and others were delivered in hybrid or online formats, ensuring accessibility and outreach. All partners were encouraged to document their sessions through materials such as PowerPoint presentations, photos, participant lists, and (where applicable) feedback forms or evaluations.

The resulting training programme not only fulfilled its quantitative objective but also reflected the diversity of expertise within the consortium and the broad applicability of the project's innovations. The initiative played a key role in translating **W2BC**'s technical advancements into real-world competencies, reinforcing the project's commitment to long-term impact through education, dissemination, and workforce development.

The success of these activities was underpinned by the rich set of training materials developed and deployed by partners, including manuals, slide decks, video content, and supplementary documentation, which will be presented and discussed in the following section.

5. Materials Developed

A core component of T7.3 was the generation of training materials that would support both immediate learning outcomes and the long-term dissemination and reusability of the knowledge produced within the **W2BC** project. While the content of each session was developed autonomously by each partner, the consortium worked collaboratively to ensure that the materials produced adhered to a common visual identity, were pedagogically sound, and could be shared publicly where appropriate.

The range of materials developed reflects the diversity of topics and formats across the training sessions. These materials not only supported in-person workshops and lectures but also provided the foundation for digital dissemination, particularly in the context of open access.

Most partners adopted the PowerPoint template and design guidelines provided in the T7.3 Guidelines, which ensured consistency in structure, readability, and branding. This included the use of standardised slide layouts, project and EU logos, font recommendations (e.g., Verdana), and slide structuring suitable for video narration. Several partners went further by, recording training sessions, in line with the guidelines annexed to the task framework.

These resources were designed to be both practical and modular, enabling trainers, students, or industrial stakeholders to revisit specific topics as needed. They also contributed to enhancing the dissemination potential of the project, as many of the materials were uploaded to the **W2BC** training page on the project's website, making them accessible to a wider public. The sessions which were recorded are also available on the project's YouTube channel, which will also remain available indefinitely.

In addition, several partners made use of visual documentation — including photographs, annotated diagrams, and live demonstrations — to enrich the training and provide contextual references for participants. This was particularly effective in technical sessions involving materials characterisation, fibre processing, or equipment operation. These materials, including the satisfaction questionnaires are all available on an internal project database, for data protection purposes.

Overall, the materials produced under T7.3 constitute a robust and versatile training toolkit that supports the uptake of **W2BC** technologies and methodologies, both during the project and beyond. These outputs contribute meaningfully to the legacy of the project and its alignment with EU priorities for open science, skills development, and innovation transfer in the circular economy and bio-based manufacturing sectors.

6. Lessons learned

The implementation of T7.3 provided the **W2BC** consortium with valuable insights into the opportunities and challenges associated with designing and delivering training activities in a European research and innovation context. While the task was completed and met its objectives, the process also revealed several lessons that can inform future capacity-building efforts within Horizon Europe and beyond.

One of the main strengths of the approach adopted was the decentralised implementation model. By allowing each partner to define the scope, format, and content of their training activities, the task enabled the consortium to tap into a wide range of technical expertise, pedagogical methods, and institutional contexts. This flexibility proved essential in tailoring sessions to local realities and target audiences, and was particularly effective in encouraging ownership and initiative among partners.

However, this autonomy also came with certain trade-offs. The lack of a centralised scheduling system and mandatory reporting structure made it more difficult to ensure uniformity in documentation, visibility, and evaluation. While a shared training matrix and common guidelines were useful coordination tools, some sessions lacked supporting materials, feedback data, or evidence uploads, which limited the ability to comprehensively compare or benchmark results across the consortium. In future initiatives, a light but consistent monitoring mechanism — for example, a shared calendar of activities or quarterly progress check-ins — could help streamline oversight without limiting flexibility.

Another key takeaway was the importance of format diversity. Sessions that combined theoretical inputs with practical demonstrations were consistently highlighted as more engaging and impactful, particularly when real project demonstrators or use cases were involved. This finding reinforces the value of experiential learning approaches in technical capacity-building and suggests that future training activities should continue to incorporate applied elements whenever possible.

Language and accessibility also emerged as relevant factors. While the majority of materials were produced in English and designed for wide dissemination, several sessions were delivered in national languages, especially when dealing with operational staff or industry-based participants. The inclusion of subtitles or dual-language materials was not always feasible due to time or resource constraints. A more structured approach to multilingual planning, even at the early planning stage, could improve accessibility and facilitate wider reuse of materials across the EU.

From a strategic perspective, the training activities also demonstrated their added value beyond education alone. In many cases, they acted as informal gateways to deeper stakeholder engagement, creating visibility for the project and sparking new conversations around sustainability, materials innovation, and industrial transformation. This indicates that training should be seen not only as a dissemination tool but also as a strategic instrument for fostering partnerships, building trust, and preparing the market for adoption.

In summary, while T7.3 delivered strong and diverse outcomes, its implementation offers several concrete recommendations:

- Maintain partner flexibility but complement it with light-touch monitoring tools;
- Encourage practical and interactive formats over passive lecture models;
- Ensure early planning for language accessibility and material reuse;
- Promote training activities as entry points for broader engagement, not standalone actions;
- Where feasible, integrate certification and feedback instruments more systematically.

These recommendations are not only applicable to future editions of **W2BC** -type initiatives but may also serve as guidance for other EU-funded projects seeking to translate technical innovation into meaningful and lasting capacity-building outcomes.

7. Conclusion

The training programme developed under T7.3 – Training for a skilled workforce in biomaterial-based manufacturing activities for the textile, footwear, and packaging VCs has played a central role in translating the technical advances of the **W2BC** project into practical knowledge and accessible learning formats for a wide range of stakeholders. By engaging professionals, researchers, and students across Europe, the consortium has contributed directly to building the human capital needed to support the transition to sustainable, bio-based industrial practices.

Throughout the project, partners delivered a rich and diverse set of training activities, even exceeding the target set in the Grant Agreement. These included hands-on workshops, lectures, technical sessions, and online modules, addressing key innovation areas such as polymer processing, inkjet printing with bio-based inks, fibre production techniques, and sustainability assessment methodologies. The materials developed were shared internally and publicly, helping to maximise the project's visibility and legacy, while also enabling reuse and replication.

While the training formats, content, and delivery approaches were tailored independently by each partner, a shared set of guidelines, templates, and coordination tools ensured that the training programme maintained a coherent identity and consistent level of quality. The resulting flexibility allowed partners to adapt to their local audiences and leverage their institutional strengths, while still aligning closely with the project's strategic goals.

The training activities not only enhanced technical knowledge and applied skills across the targeted value chains — textiles, footwear, and packaging — but also served as key entry points for external engagement, stakeholder dialogue, and dissemination of the project's core messages. Feedback from participants, where collected, pointed to high levels of relevance, satisfaction, and learning impact, particularly when sessions involved hands-on components or demonstrated clear links to real-world applications.

As the project concludes, the outcomes of T7.3 demonstrate the value of integrating training and capacity-building within research and innovation actions. The deliverables of this task — both in terms of content and outreach — contribute meaningfully to the broader policy goals of the European Green Deal, and the Circular Economy Action Plan.

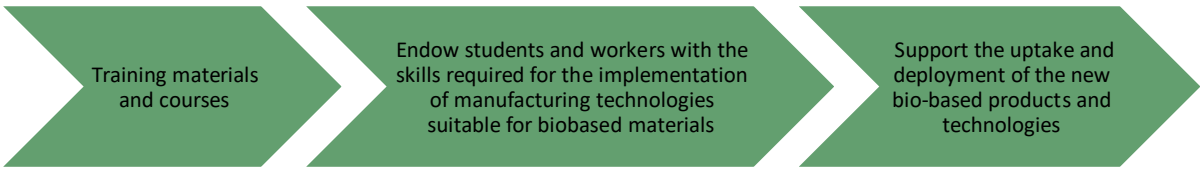
1. Annexes

1.1. Annex 1 – T7.3 Guidelines

1.1.1. Description of the approach

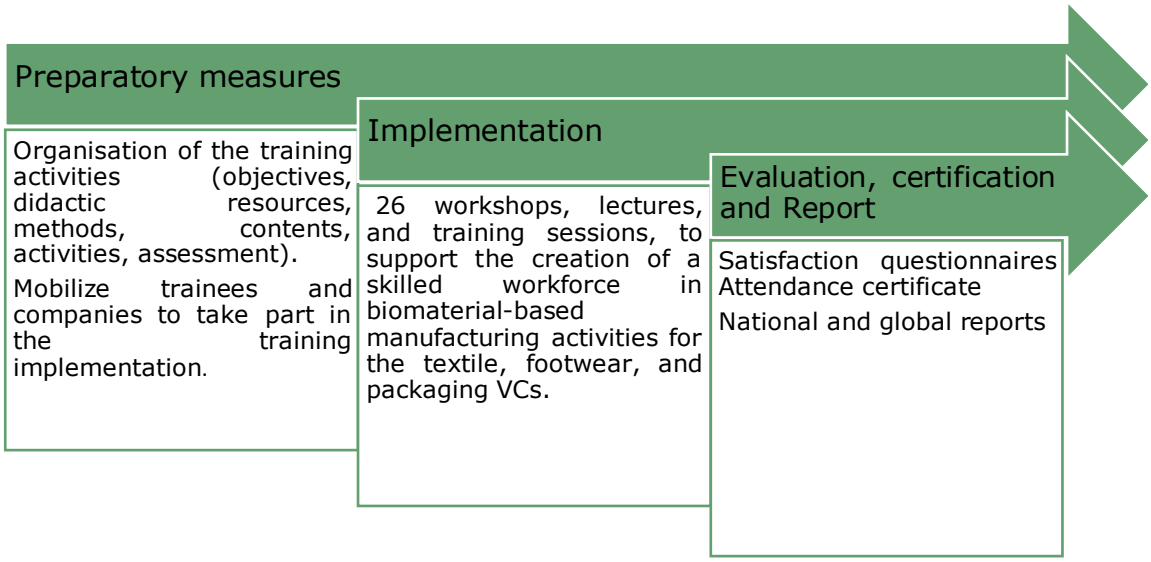
The following guidelines aim to support the preparation, development and implementation phase of the training, Task 7.3 - Training for a skilled workforce in biomaterial-based manufacturing activities for the textile, footwear and packaging VCs, that integrates WP7 - Dissemination, Communication, Training, Exploitation and Innovation.

The project's results regarding the implementation of biomaterial-based manufacturing will be integrated into the training material used by the T7.3 partners. This will allow the creation of a skilled workforce by the education and training of students, as well as experienced workers in manufacturing technologies for bio-based materials.



Activities

The implementation of this task comprises three main activities.



1.1.2. Implementation methodology

Preparatory measures

Partners involved: IVW | UDC | CITEVE | HSKL | NORA | PROPAGROUP
Start: M7 End: M17

The preparatory measures include two tasks: 1 - the definition and creation of training resources; 2 - the mobilisation of the target public for the training implementation.

1. Definition and creation of training resources

In the total training phase, the partnership will have to carry out at least 26 activities that will be divided between workshops, lectures and training sessions.

For the division of training activities, the staff's effort per participant was taken into consideration. However, it is important to reinforce that each entity can implement more than the indicated suggestion; the numbers presented serve as a starting point so that the indicator of 26 training moments is met.

	Percent of workload per task %	IVW	UDC	CITEVE	HSKL	NORA	PROPAGROUP	MTEX NS	TOTAL
		3	1	4	4	0,5	3	2	17,5
Preparatory measures	50%	1,5	0,5	2	2	0,25	1,5	1	
Implementation	45%	1,35	0,45	1,8	1,8	0,225	1,35	0,9	
Evaluation, certification and Report	5%	0,15	0,05	0,2	0,2	0,025	0,15	0,1	
	100%								

		IVW	UDC	CITEVE	HSKL	NORA	PROPAGROUP	MTEX NS	TOTAL
Workshops	50%	1	1	3	2	1	3	2	13
Lectures	35%	3	1	2	3	0	0	0	9
Training sessions	15%	1	1	1	1	0	0	0	4
	100%								26

Each entity will select the contents and resources to be used in each of the training moments, according to the R&I objectives of **W2BC**, and expected KPI(s), towards the development of sustainable biobased materials for the textile, packaging and footwear VCs.

The resources will be made in English and translated into the different partners' languages, so that they can reach the whole target group. In the case of MOOCs, only the subtitles will be translated into the different partners' languages.

Each partner entity will define the training plan for the different moments, indicating the contents, objectives, evaluation method, target public and duration.

2. Target public for the training implementation

Each partner involved will contact trainees and companies to engage them to take part in the different training activities:

CITEVE	will focus on the textile sector, by training engineering students, textile related professionals, workers from the weaving, nonwovens manufacturing and/or finishing/inkjet printing companies
UDC	will train engineering students regarding the bio-based applications in the packaging VC
PROPAGROUP	will be the manufacturing firm (end-user) which will train its own workforce
IVW	will report the project's findings on green modification and on recycling and characterisation methods for packaging applications in lectures to chemistry and engineering students. will also provide a training course for workers from companies involved in polymer film production
HSKL	will include the training in regular lectures of bachelor's and master's courses on shoe applications
NORA	will train its own workforce and external future technicians in the footwear VC
MTEX NS	will provide training to its own workforce on smart inkjet technologies and external technicians

These materials will also be used as dissemination outputs to further support the creation of a skilled workforce. The project will develop manuals, lecture slides and video recordings which will be made publicly available for free on its website and potentially in a common EU educational platform.

Target groups: Workers in the three VCs; chemistry and engineering students; researchers, universities, R&I centres; manufacturing industry, which will have more skilled and productive workforce.

Implementation

Partners involved: IVW | UDC | CITEVE | HSKL | NORA | PROPAGROUP

Start: M15 End: M30

There is no set rule for session scheduling and duration. Sessions can be set as follows:

- Workshops – between 2 and 3.5 hours
- Lectures - between 2 and 3.5 hours
- Training sessions – 4 to 8 hours (face-to-face or online sessions: between 2 and 4 hours)

All the pedagogical material developed can be made available, in this sense we propose the development of PowerPoint presentations which will be later transformed into a Video.

Each partner will have to register for the training phase. This registration will be through:

- Attendance list for each face-to-face training activity;
- Registration on the platform for online training activities (MOOCs);
- Pictures and/or small videos;
- Evaluation instruments;
- Certificates.

Table 1 Timeline for implementation – example

Workshop 1	3 hours	M17
Workshop 2	3.5 hours	M29
Lecture	3 hours	M20
Training sessions	4 hours face-to-face 4 hours online	M25 to M28

Evaluation, certification and report

Partners involved: IVW | UDC | CITEVE | HSKL | NORA | PROPAGROUP

Start: M30 End: M36

To assess the results of the training actions' implementation, we will use a satisfaction questionnaire with closed questions, using a Likert scale, and open questions.

A survey was created to collect the trainees' opinions on the training actions they have attended. The questionnaire should be applied at the end of each training activity (workshops, lectures, training sessions) because it is centred on measuring acquired knowledge, improved skills and changed attitudes as a result of training.

To facilitate the analysis of data, an online survey will be created, so trainees will be able to answer it directly online. These questionnaires will be translated into each partner's native language to make sure students/workers fully understand what they are being asked, enabling us to obtain more accurate results.

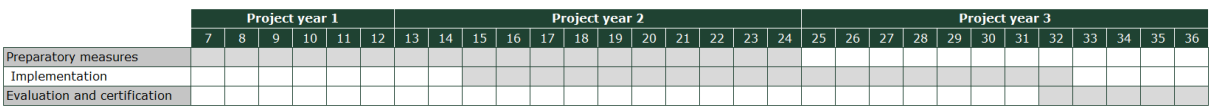
At the end of each training activity, the participant will have access to a certificate of participation.

Each partner will produce 1 report with the overall description of what was learned from the training implementation, from the preparatory measures to the training itself. This report will include the session plans, attendance lists, pictures, etc.

MAGELLAN CIRCLE will gather and synthesise all these reports and produce a summary report presenting the key findings of the training implementation.

1.1.3.T7.3 Timeline

Training for a skilled workforce in biomaterial-based manufacturing activities for the textile, footwear, and packaging VCs.



1.1.4.T7.3 Guidelines - Annexes

Training Plan

Workshop Plan

Target public		**Workshop Mode**	☐ Face-to face ☐ Online
Date / Time	__/__/ from __:__ hours to __:__ hours	**Trainer/speaker**	
Topic			
Contents			
Comments			

Workshop Plan (example)

Target public	Engineering students, textile-related professionals, workers from the weaving, nonwovens manufacturing and/or finishing/inkjet printing companies	**Workshop Mode**	☒ Face-to face ☐ Online
Date / Time	6/11/2023 from 9:30 hours to 12:30 hours	**Trainer/speaker**	Augusta Silva
Topic	Phases of the digital printing process; Pre-processing operations and their importance in the digital printing process.		
Contents	Digital printing; Phases of the digital printing process; Pre-processing operations: - types of pre-treatment - consequences of pre-treatment		
Comments	Practical demonstration of the digital printing process and sample analysis		

Lecture Plan

Target public		**Lecture Mode**	☐ Face-to face ☐ Online
Date / Time	__/__/ from __:__ hours to __: hours	**Trainer/speaker**	
Topic			
Contents			
Comments			

Training sessions Plan

Target public		**Training Mode**	☐ Face-to face ☐ Online
Date / Time	__/__/ from __:__ hours to __: hours	**Trainer**	
Objectives			
Contents		**Activities**	
Didactic resources			
Assessment			

Training sessions Plan (example)

Target public	Engineering students, textile-related professionals, workers from the weaving, nonwovens manufacturing	**Training Mode**	☒ Face-to face ☐ Online
Date / Time	01/07/2024 from 9:00 hours to 18:00 hours	**Trainer**	Augusta Silva
Objectives	Identify the main stages of the digital printing process; Recognize the main pre-processing operations and their importance in the digital printing process; Identify the new technologies and new digital printing processes; Associate the digital printing finishing process with the type of fiber and dye; Identify the main digital prints.		
Contents		**Activities**	
Advantages of digital printing Markets and production worldwide Dynamic relationship of the trinomial: printheads, inks and digital printing machines The four main components of digital printing (textile substrate, software (Rip), hardware and inks): Main fibres used in digital printing Pre-treatment - main processes specific for digital printing Design - formats and their adaptation to digital printing Digital printing Phases of the digital printing process Colouristic elements: pigments, reactive dyes, disperse dyes and acids Main digital printing technologies Identification of the different finishing processes according to fibres/dyes Key trends in digital printing technology Best practices		Interactive and interrogative methods Visit to Citeve's Training Laboratory. Practical demonstration	
Didactic resources	Case studies Samples		
Assessment	Formative through brainstorming and with an analysis of trainee satisfaction at the end of the training.		

PowerPoint presentations

The training unit consists of:

- Video lectures: 2 PowerPoint[1] transformed into 2-3 video lectures;
- Quizzes: to reinforce trainees' learning and to help them self-evaluate their level of knowledge of the contents;
- Resources/materials: to provide further readings, relevant open educational resources, links to online websites, etc.

During the preparation of the training unit, the author will have to:

- Organise teaching materials: identifying and arranging contents;
- Prepare the slides of the video lectures: it is recommended that the content is clear, brief and presented schematically to make both the exposure and the learners' fruition;
- Prepare the audio script of the video lectures using the provided template: write (in a Word document) a short text for each slide (maximum 30-40 seconds/300-450 characters including spaces), so as to have balanced content for each slide;
- Prepare quizzes useful to strengthen and support the learning process;
- Prepare learning resources/materials to enable learners to expand their knowledge of the video lecture topic.

Preparation of the Video Lecture:

- Each video lecture must have a duration of 3-5 minutes maximum, and has to be divided into slides according to the following instructions:
    - Each PPT should open with a cover slide containing the title of the video lectures;
    - Each PPT must include between 7 and 10 slides (without cover and end slide);
    - Each PPT should end with a credits slide containing the project logo, EU logo and partners logo;
    - To make reading on the screen more comfortable, the font used must be Verdana size 24 (text) to 30 (titles).

Practical tips

- Avoid building slides with lots of text; the slide should contain the structure of the topics addressed, as well as recall and highlights of the main contents. It is preferable to use schematizations, bulleted lists, summary table;
- It's better not to put more than one graph per slide;
- Avoid the use of clip art or images for which you do not owe royalties. Use images accompanying the text only if they are a real support to comprehension;
- Always insert the source of diagrams, data or any images;
- Punctuation: Never put a period at the end of titles. White space is inserted after every punctuation mark, not before;
- Lists: the sentence that introduces a list shall always end with a comm,a and you should wrap each item;
- It is advisable not to abuse the use of capital letters. In particular, do not write in capitals whole sentences.

Audio script instructions

- The audio script is a Word document consisting of the comments to each slide.

Important: Do not insert images, diagrams or tables within the text. The speech should be prepared as a Word file with all the text of the video divided by slide, namely writing the number and title of each slide before the text.

Practical tips

The duration of the comment text of each slide must be about 30-40 seconds, corresponding to about 300-450 characters, including spaces.

[1] Project PPT template

- To make reading the text more natural and fluid, it is important to prefer short and direct sentences and prevent individual items of bulleted lists from being too long;
- Avoid references to time or other sections of the course;
- Avoid the use of personal presentations by the teacher or preamble.

After preparing a first draft of the script, reread and study it to improve it. Keep an eye on:

- Long phrases: be brief and clear. You have limited time. If there is a simpler way to say it, this is the way you should use;
- Irrelevant info: Good video scripts are decisive. Remove anything that does not need to be there.

1.2. Annex 2 – Trainings matrix

Partner	Type of training	Duration (h)	Proposed date(s) (month in the project)	Theme	Coluna1	Coluna2	Number of expected participants (optional)	# of participants	Location of the training	Target group(s)	Other KPIs?
CITEVE	Workshops	4	M30	Inkjet printing and bio-based inks			max 20	3	CITEVE	Workers of the textile industry	Teaching materials (pdf); demo; questionnaire
CITEVE	Training sessions	3	M25	Inkjet printing - hands-on			max 8	8	CITEVE	Workers of the textile industry	Teaching materials (pdf); demo; questionnaire
CITEVE	Lectures	1	M30	Alternative sustainable fibers			20-30	19	online	Workers of the textile industry	Teaching materials (pdf); questionnaire
CITEVE	Training sessions	3	M31	Spraying and wet-spinning to produce fibers			max 8	4	CITEVE	Workers of the textile industry	Teaching materials (pdf); demo; questionnaire
CITEVE	Workshops	3	M29	LCA			20-30	29	online	Workers of the textile industry	Teaching materials (pdf); questionnaire
CITEVE	Lectures	1	M29	biocomposites			20-30	20	online	Workers of the textile industry	Event recording; questionnaire
CITEVE	Workshops	1,5	M30	End of Life Alternatives: color removal & reprinting			20-30	16	online	Workers of the textile industry	Event recording; questionnaire
HSKL	Lectures	4	M16	macromolecules in nature / use of modified biogenic polyr			19	19	HSKL	courses applied chemistry and	power-point presentation; blackboard writing
HSKL	Lectures	4	M18	macromolecules in nature / use of modified biogenic polyr			19	19	HSKL	courses applied chemistry and	power-point presentation; blackboard writing
HSKL	Workshops	6	M21	Measuring crystallinity of bio-PES by DSC			5	5	HSKL	courses shoe production	teaching materials + experiments
HSKL	Workshops	8	M25	Development of shoe-foams			10	10	HSKL	courses applied chemistry and	project oriented learning
HSKL	Lectures	4	M28	macromolecules in nature / use of modified biogenic polyr			25	25	HSKL	courses applied chemistry and	power-point presentation; blackboard writing
HSKL	Lectures	4	M31	macromolecules in nature / use of modified biogenic polyr			25	25	HSKL	courses applied chemistry and	power-point presentation; blackboard writing
HSKL	Lectures	4	M29	macromolecules in nature / use of modified biogenic polyr			17	17	HSKL	courses applied chemistry and	power-point presentation; blackboard writing
IVW	Lectures	1	M12 - M18	Chemical modification of bio-polymers as way for their pro			7	6	IVW-HSKL	Master students	power-point presentation; blackboard writing
IVW	Lectures	1	M20 - M24	Chemical modification of bio-polymers as way for their pro			7	5	IVW-HSKL	Master students	power-point presentation; blackboard writing
IVW	Workshops	1	M20 - M24	"(Nano)encapsulation as a method of achieving/improving			70	64	IVW	scientific community	power-point presentation; blackboard writing
IVW	Lectures	1	M25	Bio-based and bio-degradable polyesters: synthesis and ap			5	5	IVW-HSKL	Master students	power-point presentation; blackboard writing
NORA	Lectures	1	M20 - M24	biodegradable PHAs in foam production and other possible			20		online	global R&D departments	PPT Presentation
NORA	Workshops	1	M30 - M36	Biobased Foams for shoe insole production			20	17	nora	R&D department	PPT Presentation + discussion
PROPAGROUP	Workshops	1,5	M35	Biopolymers and PHA production - workshop			14	13	PROPA conference r	Internal operators, manageme	PPT Presentation + discussion + training assessment
PROPAGROUP	Training sessions	1	M36	PHA re-granulation process - training			6	6	PROPA production sit	Internal operators and skilled p	Interactive and interrogative methods - demo production
PROPAGROUP	Workshops	1,5	M35	PHA-based film extrusion - workshop			14	12	PROPA conference r	Internal operators, manageme	PPT Presentation + discussion + training assessment
PROPAGROUP	Training sessions	1	M36	PHA-based film extrusion - training			6	6	PROPA production sit	Internal operators and skilled p	Interactive and interrogative methods - demo production
UDC	Lectures	3	M23 - M24	Biodegradability analysis in different media			between 35 and	29	UDC-Faculty of Scien	Bachelor students; scientific co	Teaching materials (pdf) + questionnaire
UDC	Workshops	2	M21	Bio-PHA particles preparation and active substance's loadi			between 2 and 5	3	UDC-CITENI	Bachelor students; scientific co	Teaching materials (pdf) + questionnaire
UDC	Training sessions	2	M21	Processing techniques applied to PHAs with packaging app			between 2 and 5	4	UDC-CITENI	Bachelor students; scientific co	Teaching materials (pdf) + questionnaire

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