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LIVING CURRICULUM

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Content

1. Introduction	4
2. The project Urban Shift.....	5
3. Methodology of the Living Curriculum	6
3.1. Approaches.....	6
3.2. Process of curriculum development.....	7
3.3. Collaborative digital tools.....	11
4. Knowledge, skills, and competences	12
4.1. Definition of knowledge, skills and competences	12
4.2. EQF.....	12
4.3. ESCO.....	13
4.4. Green Skills	14
4.5. Digital Skills	15
4.6. Business Skills	16
4.7. Transdisciplinary and resilience competences	17
5. Key actors of the learning system.....	18
5.1. Learners	18
5.2. Trainers.....	20
5.3. Coaches.....	21
5.4. Urban Experts	22
6. Key topics of the learning path	22
6.1. Batch 1 – Food Waste.....	23
6.2. Batch 1 – Urban Heat Islands	23
6.3. Batch 2 – Extreme Weather Events.....	23
6.4. Batch 2 – Urban Mobility.....	24
7. Learning Events	24
7.1. General approach - process and materials.....	25
7.2. Learning events	26
Bridging Courses 1 & 2 – 1 st batch	26
Bridging Courses 1 & 2 – 2 nd batch	27
Living Labs Kick-off Event – 1 st batch	27
Living Labs Kick-off Event – 2 nd batch	28
Advanced Skills Trainings (AST) – 1 st batch	29
Advanced Skills Trainings (AST) – 2 nd batch	29



Specialized Skills Trainings (SST) – 1 st batch.....	29
Specialized Skills Trainings (SST) – 2 nd batch.....	30
Cities Network Engagement Roundtable – 1 st batch	31
Cities Network Engagement Roundtable – 2 nd batch	32
Living Labs Closing Event – 1 st batch.....	33
Living Labs Closing Event – 2 nd batch	33
Coaching Sessions – 1 st & 2 nd batch	34
8. Evaluation Framework	35



1. Introduction

Urban Shift is a project aimed at reaching the goals of the EU Green Deal by providing ground-breaking innovations for fighting climate change in urban areas. The project will create a Living Ecosystem where educational institutions and businesses implement a Living Curriculum for transdisciplinary start-up education with learners of a diverse background.

The Urban Shift Living Curriculum takes care of implementing the overarching principles and vision of the project to significantly contribute to a green, digital European transition.

It is at the interface of the main phases of the project and ensures that every kind of knowledge, skills, competencies, and experiences is collected, evaluated, and provided in a structured way. Via the modular structure various innovative and multidisciplinary approaches are integrated. The iterative process of curriculum development ensures that formats and contents can be adapted continuously to the needs of different stakeholders, but also that newly developed approaches can be incorporated. With the thematic focus of the curriculum awareness and knowledge for Corporate Social Responsibility are fostered, especially for topics such as climate change, sustainable development, or circular economy. The curriculum aims not only to impart knowledge, but to encourage personal initiative and entrepreneurial spirit, which play a key role in tackling the current multi-faceted sustainability challenges. The curriculum addresses both, HE and VET organisations and inspires the flow and co-creation of curricula in a transdisciplinary context.

The present version of the Living Curriculum is grounded on the basic structure of the curriculum and the experiences made through implementing the first and second batch. This version is the final version of the Urban Shift Curriculum.

The document gives insights into the present state of the curriculum development and consists of eight chapters.

Chapter 1 – Introduction

Chapter 2 – The Urban Shift project

Chapter 3 – Methodology of the Living Curriculum

Chapter 4 – Knowledge, skills, and competences

Chapter 5 – Key actors of the learning system

Chapter 6 – Key topics of the learning path

Chapter 7 – Learning Events

Chapter 8 – Evaluation Framework



2. The project Urban Shift

Urban Shift (UShift) is an experimental, impact-based, and transdisciplinary education programme that focuses on creating lasting change by bringing together students from Higher Education Institutions (HEI), a Vocational Education Institution (VET), urban experts, and business partners. This is to be achieved by combining intersectional environmental education, knowledge exchange, transdisciplinary collaboration, and sustainable innovation.

By providing the learners with the necessary GREEN LABOUR MARKET SKILLS (digital, green, business and transdisciplinary/resilient skills), UShift is creating a LIVING ECOSYSTEM for 80 learners from diverse backgrounds (urban design, environmental engineering, media and business) that fosters the development of solutions to pressing urban challenges. The learners, divided into two batches, will create startup teams working on urban challenges linked to urban heat islands (UHI)/cooling, and food waste/circularity, or climate/extreme weather predictability and mobility/circularity. Thus, the project allows students to successfully transform into change makers and EU GREEN DEAL AMBASSADORS by equipping them with the knowledge and experience needed to become green entrepreneurs and/or future employees of green jobs on the global market.

The culmination of this education programme are two sets of LIVING EXHIBITIONS (8 separate exhibitions) spread across Barcelona, Genoa, Copenhagen, Stuttgart, and Vienna. Their purpose is to showcase the solutions and success stories that flourished from the UShift project lifetime in order to raise public awareness for humanity's biggest challenges (i.e., pressure on planetary boundaries, resource scarcity, persistent poverty, social injustice, exponential population growth, urbanization boom, global pandemics, etc.) and interest in the UShift LIVING LABS curricula, the European Green Deal, and the United Nations (UN) Sustainable Development Goals (SDGs). This will be done through an interactive exhibition programme made up of panel and roundtable discussions, media discourse, artistic events, workshops and knowledge exchange via the exhibition of the developed courses and start-up prototypes. The goal is to inspire individual stakeholders such as NGOs, consumers, green start-ups, policy makers, and incubators to take part in the global Urban Shift as active change makers.

Even after the project's lifetime, UShift will continue to have a positive impact via the establishment of an easily adaptable LIVING CURRICULUM template and OPEN ONLINE TRAINING sessions that will be made available on YouTube to inspire future transdisciplinary collaboration. Furthermore, the establishment of an ALUMNI NETWORK serves as a tool to foster sustainable project outputs and the continuation of the start-up teams, as well as serves as a channel for peer-to-peer learning, support, knowledge and expertise exchange, collaboration, co-creation, and mentorship between the learners, start-up teams, business partners and urban expert during and after the project.

Urban Shift is a project developed by Wirtschaftsuniversität Wien - WU (Austria), Institute for Advanced Architecture of Catalonia - IAAC (Spain), Hochschule Der Medien - HdM, (Germany), Wirtschaftsförderungsinstitut Österreich - WIFI (Austria), Multicriteria- MCRIT (Spain), Terra Institute - TERRA (Italy), Pretty Ugly Duckling - PUD (Denmark), Green Innovation Group A/S - GIG, (Denmark), and co-funded by the Erasmus+ Key Action 2 Partnerships For Innovation Alliances For Innovation 2021 Programme of the European Union.



3. Methodology of the Living Curriculum

Chapter 3 explains the approaches, frameworks and methodologies used to develop the Living Curriculum, as well as describing every step taken in the process of developing and improving it, including the process of feedback gathering and integration. It concludes with a summary of the most used collaborative digital tools.

3.1. Approaches

The development of the Living Curriculum describes an innovative learning path, that does not use conventional ready-made curriculum elements but develops them grounded on the needs of the learners in close collaboration and in continuous exchange with all key actors. That requires a different organisation of the development process and new learning approaches.

Systemic approach: The project is considered as a learning system that is built through the continuous interrelation of key actors, challenges, resources, and solutions. That calls for a solid basis of information about learners, trainers, coaches/urban experts - their skills, experiences, interests and needs - in designing the curriculum.

Challenge-based Learning approach: Real world challenges are centre-staged in students' work. But the definition of the challenges and finding solutions changes through concretely dealing with them. Sometimes ideas tend to get bigger and bigger, become confusing and the transfer to practice is no longer feasible. Therefore, it is crucial to give a clear demarcation of the urban challenges in the beginning and supportive guidance during the process of solution finding.

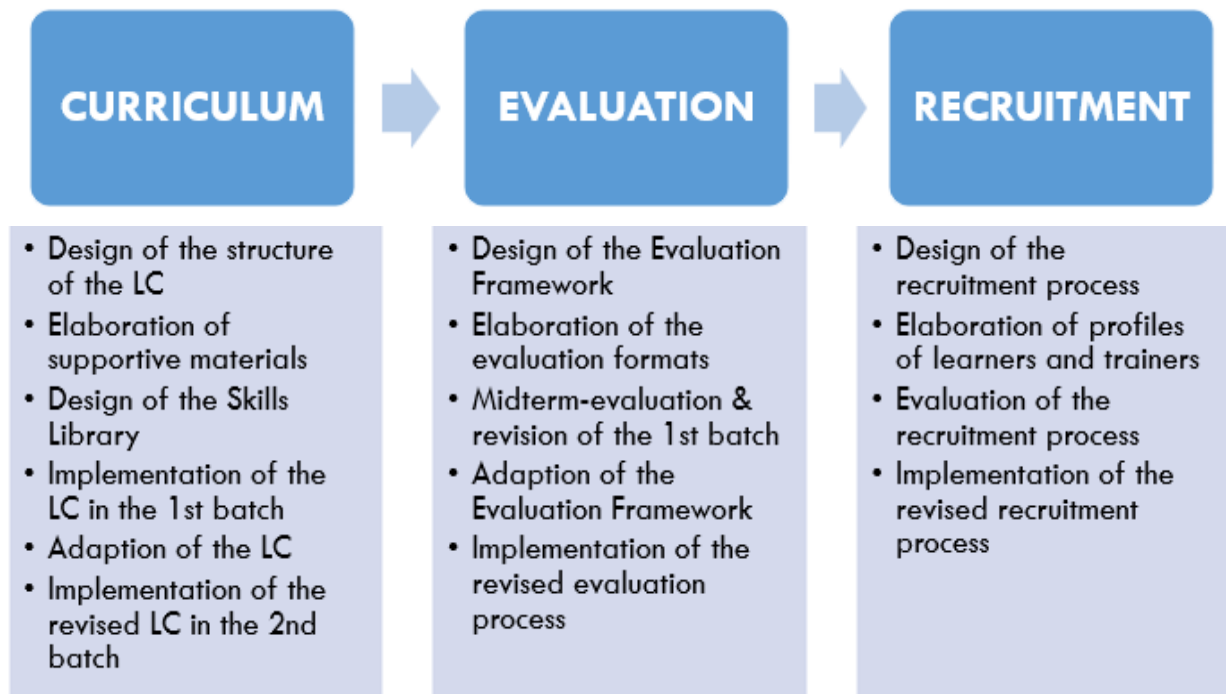
Transdisciplinary approach: The learners, as well as the trainers and coaches come from different backgrounds. Therefore, it is crucial to provide spaces and settings for transdisciplinary exchange. They are considered in the curriculum development.

Reflective approach: The curriculum is developed in a constant process of planning, implementation, reflection, and adaptation. Thus, evaluation, revision and feedback elements are crucial in every step of the curriculum as described in the Evaluation Framework.

This approach is also supported through the structure of the two batches, that offers the opportunity for improvement from one batch to the other.

3.2. Process of curriculum development

The curriculum is developed in three parallel processes that are closely interlinked and comprise the following steps, which are not strictly chronological:



CURRICULUM

Design of the structure of the Living Curriculum

In a first step, the structure of the Living Curriculum is outlined to give a basic framework which is filled with concrete contents throughout the first batch of implementation. It works with possible scenarios and experiences from former projects, like BUILD Solutions.

It puts a specific focus on elaborating:

- Key factors
- Knowledge, skills and competences
- Learning Events

The structure of the Living Curriculum is developed by the WP4 team, provided with feedback from and agreed in the Urban Shift Consortium.

Elaboration of supportive materials

Partly in the beginning, partly during the implementation phase supportive materials are developed, which allow to go more in detail and are an integral part of the curriculum. Most relevant are the following:

- Planning templates for the learning events: The aim is to structure the planning process and make it more coherent and comprehensible. The documents are also used in the evaluation process. The basic template is designed by WP4 team; the concrete templates for each learning event are filled out by the trainers of the learning events.



- Coaching templates: They aim at providing a structured documentation of the coaching units, in order to pursue the progress of the start-ups and to exchange experiences between the start-up coaches. The template is designed by WP4 team, the templates for each coaching session are filled out by the coaches. In the 2nd batch, the coaching template was converted into an online form, which made it easier both for coaches to keep track of their notes from previous sessions, and for the WP4 team to collect simultaneously feedbacks from all coaches.
- Papers on Urban Challenges: For each Urban Challenge a comprehensive description is elaborated, containing scientific background information, useful facts and good practices of how to cope with the respective challenge. They serve as knowledge pool for students as well as for trainers and coaches. WP2 team elaborates the papers and useful presentations.
- Supportive materials for the learning events: For the specific needs of each learning event additional materials are prepared, like presentations, videos, articles, etc. The materials are elaborated by the trainers and made available to the entire consortium.

Design of the Skills Library

Focussing on skills means also to build up a profound knowledge on official skills frameworks, like EQF or ESCO, and generally accepted definitions and descriptions of skills sets, the project refers to. The in-depth engagement with skills and competences concluded in the development of the Skills Library. According to the projects' ratio it is divided into four sections:

- Green skills and competences
- Digital skills and competences
- Business skills and competences
- Transversal competences

For each skill a definition and description are provided, following the standards of official skills frameworks, like ESCO.

The skills library was elaborated by WP4 team with the aim to support the planning process of the learning events, but also for evaluation purposes.

Implementation of the Living Curriculum – 1st batch

A crucial part of the curriculum development is the implementation, which provides an excellent learning system through its two batches. The first batch focuses on gaining experience with the elaborated formats, contents and methods and opens the space for innovative approaches, as the elements of the curriculum are not pre-defined but in continuous development through the findings of the feedback and evaluation processes.

Adaptation of the Living Curriculum

Based on the findings of the evaluation sessions during the first batch and the concluding revision session the curriculum is revised and adapted. Not only the contents are adapted, but also the structure, where needed.

While WP4 team outlines the new curriculum, the consortium partners contribute with feedback.

Implementation of the Living Curriculum – 2nd batch

In the second batch the focus is on the improvement and perfection of the designed curriculum elements. But it also gives space to work more in depth with the start-up teams, to consider specific needs and to find individual solutions, where needed. Particular attention is also paid to the differences and complementarities in terms of skills and competences students from HE and VET institutions bring,



and how this inter- and transdisciplinary collaboration can be organized most beneficial for all. It is one of the objectives of the project to develop an inclusive and transdisciplinary curriculum.

Second adaptation – Final version of the Living Curriculum

Based on the findings of the revision session of the second batch the curriculum is revised and finalised. Not only the contents are adapted, but also the structure, where needed.

EVALUATION

Design of the Evaluation Framework

In a first step the Evaluation Framework is designed, which describes the evaluation process, relevant tools for the different learning events and the approach to analyse the gathered data. The process for the first batch consists of three main steps:

- Midterm evaluation
- Final evaluation
- Revision session

WP4 team is responsible for the evaluation framework design, and all partners from the Urban Shift consortium contribute with feedback and decide the final version of the Evaluation Framework.

Elaboration of the evaluation formats

To assess the Urban Shift programme from different perspectives and to gather data to the relevant categories, various evaluation formats are used:

- Online surveys for learners and trainers/coaches
- Interviews with learners and coaches
- Onsite feedback session with learners
- Online revision session with partners from the consortium

The formats are developed by the WP4 team in close collaboration with WP2 team, while the final decision lies with the Urban Shift consortium.

Midterm evaluation and final revision of the 1st batch

Both, the midterm evaluation and the final revision have the aim to figure out, what worked well and should be maintained, what should be improved and upcoming new ideas.

Each learning event is evaluated, considering the chosen categories – contents and topics, methods and formats, progress of the start-up, skills and competences, communication and collaboration in the teams, and organisation. The findings are summarised in a report, which serves as basis for the final revision and therefore is available for all partners. The common online revision session opens the space for discussing the findings, collecting new ideas and deciding on improvements for the second batch.

WP4 team conducts the analysis of the evaluation data, elaborates the evaluation report, plans and conduct the revision workshop, while all partners contribute.

Revision of the Evaluation Framework

The revision session and even some learning events revealed that also the evaluation processes and tools must be adapted. We identified that we must find a balance between too much and too little evaluation. Extensive surveys, which cover more learning events turned out to be exhausting for participants and sometimes provided only general information. Therefore, we decided to reduce surveys to four to five questions, and instead provide a survey for every learning event.



WP4 teams in close cooperation with WP2 team elaborates the revised Evaluation Framework, including also adapted evaluation formats and presents it to the Urban Shift consortium.

Implementation of the revised Evaluation Framework

The overworked processes and tools are implemented in the second batch. It is again a test. The comparison with the first batch will reveal what is most effective and should be used for designing the final version of the curriculum.

Final revision of the 2nd batch

As in the 1st batch, every learning event of the 2nd batch was evaluated according to the categories described above. The WP4 team then analysed all the evaluation materials collected and wrote a report on the findings. The report was then the base for the discussion with the Consortium which took place during the revision session. The WP4 team organised and facilitated this workshop and all partners contributed to the discussion.

Final version of the Evaluation Framework

The revised Evaluation Framework seemed very accurate for the features of the program. The learners' surveys were administered on the spot, during the events, which allowed to have higher response rates, all SSTs and SSTs were evaluated also during the sessions and not solely at the Closing event, which allowed to have more insightful feedbacks from students, and finally, the surveys were more standardised which made it easier for the WP4 team to evaluate the evaluation data collected.

RECRUITMENT

Design of the recruitment process for learners

The selection of learners, in particular in transdisciplinary and innovative contexts, is key and calls for close coordination between the participating institutions. As the recruitment process for the first batch started right after the project began, it was agreed roughly between the participating institutions. The institutions referred to individual recruitment processes and used different texts for the call.

On the one hand, it led to inconsistencies, on the other hand, it also led to a big pool of recruitment approaches and valuable experiences for the second batch.

Compilation of learners' and trainers' profiles

As skills and competences are centre staged in the curriculum, it is necessary to get an overview of existing and needed skills in an early stage of the project for both, learners, and trainers.

Based on individual profiles, a compilation of skills was elaborated for both, learners, and trainers to figure out matches and gaps.

WP6 team develops the profiles, WP4 team does the compilation of profiles.

Evaluation of the recruitment process

In parallel to the final evaluation of the contents, the recruitment process was evaluated with the aim to improve the routines but also materials for the second batch to make it more consistent. The relevant information was taken out of the surveys with learners and trainers, in particular the following:

- Recruitment process and tools
- Selection criteria and tools for team formation
- Support for team building

The findings were discussed in a revision meeting with the Urban Shift consortium, new ideas were exchanged and common decisions on the adaptation of the process were made.



Implementation of the revised recruitment process

The recruitment in the second batch follows the revised process, that pursues two goals: (a) to be as coherent as possible to benefit from synergies, (b) to be as different as necessary to consider specific pre-conditions and needs of the four HE- and VET institutions.

After the second batch, categories like recruitment process and tools, team formation and team building will be evaluated carefully, in order to give the best advice in the final version of the curriculum.

Recruitment process of the second batch

In the second batch, HE- and VET institutions (except for IAAC due to its different integration of the project in the Master's program) used a coherent recruitment process. First of all, when applying to the program, learners were asked to reflect upon the same questions (in written form), and then the selected learners had to sign a letter of commitment. The learners profile were also examined better by all institutions. This resulted in a more uniform group of learners regarding their age, their previous professional experience and their objectives regarding the U-Shift Program.

SUGGESTIONS FOR FUTURE DEVELOPMENT: As a result of the discussion and exchange among the Consortium members carried out in the Closing Event, it was agreed that a program like Urban Shift would need at least six months for the preparation of the curriculum and organization of the Batches. As a matter of fact, it was rather challenging to start the project in September 2022 and start the 1st Batch with the learners two months later. Therefore, if this 3-year program had to be “rescheduled”, the Consortium suggests that the first 6 months are necessary for planning and getting to know the other Project Partners, the following two years for the two Batches, and the last 6 months for the last reporting, communication and dissemination duties and the Closing Event.

3.3. Collaborative digital tools

Digital tools play a central role throughout the project for communication, development, and exchange of contents and for storage of relevant data.

MS Teams

It is the main communication tool for the project consortium, used for the development and storage of relevant documents and for the communication and exchange with U-Shift members.

In the second batch it is also the main tool for the communication with and amongst learners. As they participate over a guest account, the continuity of the communication has to be ensured over a different channel after finishing the batch.

Slack

It was the main communication tool for both, consortium members and learners, in the first batch. The big advantage of this tool is that it is easy to use and free of charge. But there are several functions only available in the professional version, amongst others the data storage. That is the reason why we switched to MS Teams.

Zoom

It is used for all kinds of virtual meetings and events - for consortium meetings, as well as for meetings with learners, online lectures and workshops and for bigger events with an external auditorium. The big advantage of this tool is its user friendliness and accessibility without charge for all key actors.

Mentimeter

It is the main tool for evaluation and surveys referring to learning events, as it provides useful analyses and graphical presentations of the results. It is also used as teaching method in online and onsite classes, as it provides an interactive access to contents through polls and short surveys.



Miro Board

Digital tools, like Miro Board, are used on occasions where creativity and the collective intelligence is requested. For instance, to develop new ideas collaboratively, and for energizers and warmups.

4. Knowledge, skills, and competences

Chapter 4 aims at achieving clarity on the different concepts of skills and competences used throughout the project. It contains a description of the ESCO and EQF framework and a definition of the main categories of skills – green, digital, business skills and transversal/resilience competence.

4.1. Definition of knowledge, skills and competences

As both the Consortium and the learners include a wide variety of individuals with different cultural, linguistic, demographic and educational backgrounds it is important in this project to develop a “common terminology” that all understand and agree upon. The main goal of the project is that of endowing the learners with the appropriate knowledge, skills and competences to be able to face the current and future Urban Challenges.

- By the term “*knowledge*” we mean the understanding of or information about a subject that you get by experience or study. Knowledge could be both practical and theoretical.
- With “*skill*” we understand the ability to use one's knowledge effectively and readily in the execution of a task.
- Very similarly, a “*competence*” is the quality or state of having sufficient knowledge, judgment, skill, or strength for a particular task.

As visible above, the definitions of “*skill*” and “*competence*” are rather similar. In the project we will mostly use the term “*skill*”. It might occur that “*competence*” appears, but it shall be considered with the meaning stated for “*skill*”.

4.2. EQF

The European Qualifications Framework (EQF) is a tool developed to translate more easily national qualifications. By being able to compare and understand evaluation systems of different countries, this framework supports cross-border mobility of learners and workers, promoting lifelong learning and professional development across Europe.

Comparability is made possible by focusing on the learning outcomes of an educational program on three different dimensions: **knowledge, skills and responsibility and autonomy**. In the context of EQF, knowledge is described as theoretical and/or factual; skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments), and responsibility and autonomy is described as the ability of the learner to apply knowledge and skills autonomously and with responsibility. Based on the complexity of the program's learning outcomes, 8 levels were developed in which the 1st level represents the obtainment of basic knowledge, skills and low responsibility and autonomy, and the 8th level represents highly advanced knowledge, skills and high responsibility and autonomy.

As our learners are university students or young professionals, our curriculum should meet the learning outcomes of the 6th level, corresponding to those of a bachelor's degree.

LEVEL	KNOWLEDGE	SKILLS	RESPONSIBILITY & AUTONOMY
Level 6	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups

4.3. ESCO

ESCO is the European multilingual classification of skills, competences, qualifications, and occupations. One of ESCO's main missions is to build stronger bridges between the world of education and training and the world of work, contributing to reduce skill mismatches and supporting the better functioning of the labour market. The vision behind ESCO is the provision of a common reference language that could support transparency, translation, comparison, identification, and analysis of the content of a qualification, thus helping to indicate how those relate to the skills and occupations needed across occupations and sectors. It works as a dictionary, describing, identifying, and classifying professional occupations and skills relevant for the EU labour market and education and training.

ESCO provides descriptions of 3.008 occupations and 13.890 skills linked to these occupations, translated into 28 languages. The ESCO classification consists of three pillars:

Skills pillar: It distinguishes between a) skill/competence concepts and b) knowledge concepts by indicating the skill type, but not between skills and competences. Every skill concept includes an explanation in the form of description. The skills pillar is structured in a hierarchy which contains four sub-classifications.

- Knowledge
- Skills
- Language skills
- Transversal skills

Occupations pillar: It organises the occupation concepts in ESCO. It uses hierarchical relationships between them, metadata as well as mappings to the International Standard Classification of Occupations (ISCO). Each occupation is mapped to exactly one ISCO-08 code. ISCO-08 can therefore be used as a hierarchical structure for the occupations pillar. ISCO-08 provides the top four levels for the occupations pillar. ESCO occupations are located at level 5 and lower.

Each occupation comes with an occupational profile. The profiles contain an explanation of the occupation in the form of description, scope note and definition.

Qualifications pillar: They are the formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards. Information on qualifications at European level is displayed in Europass.

Green Skills and Knowledge Concept in ESCO

Beyond the basic framework, ESCO responds to the needs of the European Green Deal and the European Skills Agenda, which emphasises that the green transition requires investments in skills of people and presents a set of concrete actions to support the acquisition of skills for the green transition. Three groups of skills were identified, considering the impact on the green transition:

	DEFINITION	EXAMPLE
BROWN SKILLS	Knowledge and skills which increase the negative impact of human activity on the environment	Production of electricity by coal (ILO, Skills for a Greener Future)
WHITE SKILLS	Knowledge and skills which do not increase nor reduce the negative impact of human activity on the environment	Test computer or software performance (Australian Skills Classification)
GREEN SKILLS	Knowledge and skills which reduce the negative impact of human activity on the environment.	Cogeneration of heat/cool and power from geothermal energy (EU Taxonomy)

A total of 571 ESCO skills and knowledge concepts are labelled as green. This includes 381 skills, 185 knowledge concepts and 5 transversal skills.

Digital skills and Knowledge Concept in ESCO

To support the twin transition, ESCO also introduced the label of digital skills. Digital skills/competences are defined following: “Digital competence involves the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competences related to cybersecurity), intellectual property related questions, problem solving and critical thinking.” (Council Recommendation on Key Competences for Lifelong Learning)

A total of 1,201 ESCO skills and knowledge concepts are labelled as digital. This includes 718 skills, 475 knowledge concepts and 7 transversal skills. The higher share of digital knowledge concepts is justified by the fact that ESCO includes a significant number of IT software and technologies. Looking at the reusability level of digital concepts, around half of knowledge and skills concepts is sector-specific, followed by cross-sector and occupation-specific concepts.

How to use ESCO in the curriculum development?

Skills of learners and trainers are pre-defined by the learners and trainers, aligned to the structure of green, digital, business and transversal skills. Those, which are intended through the different learning events are predefined by the HEI and VET institutions following the same structure. The pre-defined skills are reflected against the ESCO framework by WP4 team to ensure to use common categories. These categories are used in the evaluation process, again on the basis of ESCO.

4.4. Green Skills

The transition to a low-carbon, resource-efficient economy requires systemic changes that will result not only in new products and services but also in changes in production processes and business models. This will inevitably change the skills required and the tasks involved in many of the existing occupations. That’s why we talk about “green skills”, which, even if to different extents and in different ways, will be needed by all sectors and all levels in the workforce. An established definition of green skills does not yet exist. The CEDEFOP (European Centre for the Development of Vocational Trainings) defines green skills as knowledge, abilities, values, and attitudes needed to live in, develop and support a sustainable



and resource-efficient society (CEDEFOP, 2012). Urban Shift tackles these needs for green skills which are addressed on a global level as well as in concrete urban challenges.

The Green General Skill Index identifies four groups of work tasks that are especially important for green occupations:

- (a) **Engineering and technical skills:** hard skills encompassing competences involved with the design, construction and assessment of technology usually mastered by engineers and technicians.
- (b) **Science skills:** competences stemming from bodies of knowledge broad in scope and essential to innovation activities, for example physics and biology.
- (c) **Operation management skills:** know-how related to change in organizational structure required to support green activities.
- (d) **Monitoring skills:** technical and legal aspects of business activities.
- (e) **Transversal skills:** in addition, a range of soft skills, regarded as “skills for the future” are also considered to be increasingly important, in particular, skills related to design thinking, creativity, adaptability, resilience, and even empathy (Green General Skills Index, 2015).

Within the European Skills Agenda for Sustainable Competitiveness, Social Fairness and Resilience, Urban Shift will tackle all these categories of skills which are addressed on a global level as well as in concrete urban challenges.

A few examples of the green skills that were treated in the batches follow. More extensive context information of the learning events where they were applied, trained and/or acquired is to be found in the corresponding learning events planning templates:

- ability to understand the European Green Deal & Agenda 2030's background and objectives and to put them into practice
- ability to think and act circular and to apply it to product development and design
- ability to understand and apply green technologies, in particular in the field of renewable energies, eco-building, and mobility
- ability to create an integrated view and to transfer it to life cycle management
- carbon footprint calculations
- ability to perform sustainability reporting, sustainability financing, and design thinking
- understanding of social & environmental responsibility
- promoting responsible consumer behaviour
- Green Lean Business Model Canvas
- Company Sustainability Assessment

4.5. Digital Skills

In today's world digital skills are becoming more and more fundamental for our everyday life as private citizens as well as professionals. Regarding the social and ecological transition that we are experiencing, digital skills will become even more important as they offer possibilities such as dematerialization (and consequent resources saving), opportunities for exchange across the world, data gathering, communication and advertisement, partnerships, and business relations, which are greatly amplified by the digital world. Start-ups and SMEs need to have an advanced know-how on online marketing, social media, web positioning, e-commerce, cyber security, and digital image & video editing. Unfortunately, such skills are rarely part of education and training programs, due to the fact that standard educators do not tend to have such skills. Urban Shift's goal is that of interrupting this vicious circle by developing



a high-performing digital education ecosystem. In this Curriculum learners will learn how to set up good digital events and what it needs to make networking and a feel-good atmosphere also online. Additionally, they are provided with the basics of working with big data, AI, VR and AR where needed. In doing so, we will contribute to location-based SMEs and start-ups to either bring their business better into the digital world or even to scale online via e-courses or marketing/content strategies.

A few examples of the digital skills that were treated in the two batches:

- conduct web searches
- user research
- create digital content
- prototyping (digital fabrication)
- social media
- simulation
- 3D rendering & 3D modelling
- data processing
- presentation skills
- using digital tools
- graphic & digital tools

More extensive context information of the learning events where they were applied, trained and/or acquired is to be found in the corresponding learning events planning templates.

4.6. Business Skills

Even in the era of Artificial Intelligence, people's talent remains of crucial importance. Now more than ever, any business requires people capable of making decisions, executing plans, and performing tasks that can lead toward sustainable success and future viability. These tasks are particularly important for start-ups that, as their name suggests, are just "starting up" as a business, implementing innovative ideas. Additionally, start-up staff is initially rather limited, meaning that very often it is not possible to have a single professional dedicated to each task, rather, a few people have to be able to carry out multiple tasks. As a result, it is important to train all the employees and give them at least some basic knowledge skills on how to make a business work.

A few examples of the business skills that were transferred and trained in the two batches:

- promote ideas, products, services
- show entrepreneurial spirit
- applying entrepreneurial and financial skills and competences
- sales promotions, sales argumentation, sales techniques, sales strategies, sales pitches
- management and administration
- design thinking
- LEAN methodology (including validated learning)
- value proposition
- developing financial and business plans
- sustainability business practices
- CSR
- ethical decision making
- market needs analysis
- competition analysis
- risk management



- funding

More extensive context information of the learning events where they were applied, trained and/or acquired is to be found in the corresponding learning events planning templates.

4.7. Transdisciplinary and resilience competences

Obviously, every start-up and SME has its own focus and the people that are part of it need to be highly prepared and efficient in their field to allow the viability of the company. Nonetheless, it occurs more and more that expertise from different disciplines and the ability to speak to different professionals are a winning factor.

Consequently, the Curriculum reflects the professional diversity of our Consortium, including elements and knowledge from the HEIs and VETs study programs (architecture, business and economy, media and communication) as well as the practical business content coming from the business partners.

In addition to transdisciplinary elements, the Curriculum will make the learners train their resilience competences. Resilience is the capacity to withstand or to recover quickly from difficulties. In a world of changing climate and finite natural resources, we constantly have and will have to face challenges (extreme weather events, loss in biodiversity, pandemics, wars, economic instability, inflation, harsh interruptions in supply chains, raw materials scarcity, and so on), that is why it is important that the companies of the future launch their business keeping in mind that they have to be resilient. We are convinced that operating in this transdisciplinary setting, allows a resilient and holistic solution-finding approach and increases the likelihood of generating truly innovative solutions and outcomes within this project.

Transdisciplinary and resilience competences can sometimes overlap with some of the categories above and especially with business skills. Being “outcome-oriented” or having “team leading” skills can also be seen as important business skills, nevertheless, following the ESCO database and skills library we elaborated, we decided to keep them within the transdisciplinary and resilience competences.

A few examples of these skills that were transferred and trained in the two batches.

- transdisciplinary communication skills (collaborative interdisciplinary reasoning)
- respect the diversity of cultural values and norms
- work in teams, handle team dynamics, collaborate on tasks
- address audiences, present ideas, lecture, deliver a speech
- evaluate environmental impact of personal behaviour
- meet commitment, meet targets, show reliability, show responsibility, work to deadlines
- accept critic & feedback, negotiating, self-assessment, delegate responsibilities
- manage emotions, handle frustration, recognize own potential, show capacity to deal with stress, control impulses, manage disappointments
- conflict resolution, empathy
- reflection competence & learning from failure
- networking

Indeed, these are just the skills the Consortium intended to transfer; undoubtedly, the learners in their autonomous work within the team have acquired and trained these as well as other skills independently.

Supporting materials
Urban Shift's Skills Library

5. Key actors of the learning system

Chapter 5 describes the key actors of the project, their roles and tasks and the processes to involve them in the project. Furthermore, it provides links to supporting materials which are used to collect information in a structured way.

5.1. Learners

As the success of the project is closely linked to the learners, a careful design of the selection process and process of team formation are crucial. An evaluation session in the Urban Shift consortium, considering the experiences of the first batch, set the ground for sharpening the target group and redefining the selection process for the second batch.

Envisaged target groups

Considering the specific requirements of each participating institution, but also needs of the interdisciplinary teams, the target groups were sharpened. While it is essential to have the greatest possible diversity in skills and study approaches on the one hand, it is crucial to have homogeneity in terms of study progress or age group of the students on the other hand, as the following compilation shows:

	HdM STUTTGART	WU VIENNA	IAAC BARCELONA	WIFI VIENNA
STUDENTS	Late Bachelor or Master students	Late Bachelor or Master students	Master students	Start-up community of WKO
STUDY PROGRAMMES	• Media Management • Business Communication • Business Informatics • AV Media Creation & Technology • Mobile Media, Advertising & Market Communication	• Master in International Management – CEMS • Master in Business Communication • Master in Management • Bachelor - Internationale Betriebswirtschaft • Master in Marketing • Bachelor of Business and Economics • Master in Export & Internationalisation Management • Master in Digital Economy • Master in applied Economics	• Advanced Architecture • Design for Emergent Futures • Robotics and Advanced Construction	• Start-up and sustainability related communities • Engineering courses for mobility and housing • Economic courses, such as carbon emission and circular system

		• Master in Quantitative finance		
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Recruitment process

Based on the experiences of the first batch, each team defines a recruitment process that aligns with the academic institution, considering common steps, which were agreed in the consortium. But due to different pre-conditions and embeddedness of the Urban Shift programme, the recruitment process is different for each institution.

	HdM STUTT GART	WU VIENNA	IAAC BARCELONA	WIFI VIENNA
ANNOUNCEMENT	Open call for students (2 nd round with MA focus)	Open call for students	Optional seminar course in the framework of a Master Programme	Identifying the sources of internal & external departments Mailing to a defined interest group
INFORMATION	Online information session			
APPLICATION	CV of applicants Motivational letter with defined questions	CV of applicants Motivational letter with defined questions	Students rank the possible seminars based on their first choice & preferences	CV of applicants Motivational letter with defined questions
INTERVIEW	Interview with selected learners	Interview with selected learners		Interviews with selected learners
SELECTION – CRITERIA	Motivation, Personality Subject-specific media competencies Commitment Enthusiasm	Time commitment Study progress Willingness to start own business Interest in sustainability	Grades Previous academic performance - skills, Relevance to the development of their thesis, their profile	Qualification Availability Fit in teams Motivation for the project Contribution to the challenges

The applicants are selected internally in each institution following criteria, which were decided in the consortium, in particular:

- Willingness to bring in engagement and initiative and to cope with a workload exceeding normal university courses.
- Willingness and ability to work in an interdisciplinary team also with remote phases.
- Strong skills in the individual discipline.
- Entrepreneurial spirit and ability to pursue a common start-up idea.



Each selected learner signs a Letter of Commitment and provides a personal profile, containing the following information:

- Personal biography
- Personal interests
- Top skills
- Sustainable superpower
- Profile foto

Process of team formation

As the students work together closely, at least for four months, the team formation must be thought through carefully. Two main criteria are decisive for the pre-selection of the teams: (a) interest and knowledge on a certain urban challenge, (b) personality and how it fits into a particular team.

The preparation of the Living Labs in WP3 serves the team formation through several occasions:

- Bridging Course 1: Students get to know the urban challenges and students from other institutions through discussion rounds.
- Bridging Course 2: Students have to select one of the given urban challenges and work on specific problems in a pre-defined team.
- Personality test: Each participant has to fill in a personality test, which is considered in the pre-formation of the teams.
- Kick-off: The real starting point of the team formation is the Kick-off, where all team members get to know each other in person.

Even though the team formation process is carried out carefully, it is crucial that all participants have the opportunity to change the team in the first month.

Supporting materials

Announcement:	Invitation text for participants
Selection:	List of selection criteria
Team formation:	Letter of Commitment
	Learners' Profile
	Personality Test

5.2. Trainers

Role and required skills of trainers

The main task of trainers is to plan, organize and conduct the different learning events of the Urban Shift curriculum on an institutional and/or transnational level. They facilitate group processes and provide knowledge in the different phases of the project.

Therefore, they need a defined set of skills, including:

- Discipline knowledge with a focus on green, digital or entrepreneurial knowledge
- Facilitation skills
- Didactic and methodological skills
- Ability to use practical methods
- Ability to listen and to understand problems
- Ability to moderate group processes and to cope with conflicts
- Solution orientation



Process of appointment

To provide a great variety of skills and to meet the needs of learners, all project partners nominate trainers: each HEI and VET institution two, each business partner at least one trainer. It is also possible to recruit external trainers, specifically for the SSTs, if specific knowledge is not available internally.

All trainers provide a personal profile, which is available for the students. These profiles contain in particular:

- Profession
- Disciplinary knowledge
- Skills and competences
- Professional experience
- Interests

Supporting materials

Appointment: Personal profile of the trainers

Living Labs: Aggregated list of available trainers

5.3. Coaches

Role and required skills of coaches

Coaches accompany the start-up teams in the initial journey developing their business solutions. They help to structure the process, to set milestones and give feedback to the single steps. Coaches also support the teams in organising additional knowledge in certain phases of the start-up design. Therefore, they need an overview of the competences and knowledge, which are available in the consortium and outside, but they do not have to be experts in a certain thematic field.

Moreover, they keep the motivation and spirit up, structure group processes and give advice if conflicts occur, but they do not solve group issues for the team. The main task of coaches is more to raise the “right” questions and less to give answers.

To ensure a smooth process, at least monthly meetings with the team are recommended. The teams provide the coaches with questions and needed topics before the meeting. Afterwards, the coach writes a protocol to document the progress of the start-up and to share experiences with the other teams.

Coaches need a defined skills-set, which includes amongst others:

- Overview of available resources and competences
- Ability to structure processes
- Ability to define goals and milestones
- Ability to give constructive feedback
- Listening and questions competence
- Cope with group dynamics and conflict competence
- Strong motivation
- Encouragement & support

Process of appointment



Each project partner nominates at least one coach, who brings experience in facilitating group processes.

All coaches provide a personal profile, which is available for the students. These profiles contain in particular:

- Profession
- Disciplinary knowledge
- Skills and competences
- Professional experience
- Interests

Based on the profiles the coaches are matched with the start-up teams in the kick-off. If the match does not fit, it is possible to change the coach during the first month. A continuous exchange between the coaches, but also with the trainers, turned out to be very fruitful. A “Train the coach” session in the starting phase and an additional session during the Living Labs is foreseen for this purpose. In the 2nd batch the coaching sessions during the Kick-off event were anticipated and increased, in order to ease and speed up the creation of a relationship between the team and their coach.

Supporting materials

Appointment:	Personal profile of the coaches
Coaching process:	Coaching template

5.4. Urban Experts

Role and required skills of urban experts

Urban experts provide their knowledge related to the specific urban challenges, give constructive feedback in the context of pitching events, and give advice to the start-up teams. They play a defined role in the following events:

- Cities Network Engagement Roundtable
- Closing Event
- Defined parts of the SST trainings

They need a defined skills-set, in particular the following:

- Discipline knowledge with a focus on green, digital and/or entrepreneurial skills
- Strong feedback skills
- Ability to motivate and empower the teams

Process of appointment

The urban experts are proposed by the WP3 team, supported with proposals from all consortium members. It is crucial that the experts are from all disciplines which are in the project, in order to cover all business ideas and the questions that may arise. It is also important that the urban experts come from different countries to give insights into specific national regulations, e.g. when it comes to funding opportunities or helpful contacts.

6. Key topics of the learning path

Chapter 6 digs deeply on the challenges selected for this project both for the first and second batch. Firstly, the challenges are described, and secondly, the contents provided by the different institutions



(WU, WI, HdM, IAAC) which is content-wise specific and tailor-made for the needs of the learners will have, in order for them to face the urban challenges with their start-ups.

6.1. Batch 1 – Food Waste

Food Waste is one of the two challenges covered by the first batch of the Urban Shift Project. The activities related to food scene in fact among many industries and sectors: from agriculture to transport, from storage to packaging, from gastronomy to disposal, from food processing to energy production. Therefore, the whole food supply chain requires large inputs in terms of natural resources (energy, water, chemicals, soil), manpower and machinery, resulting in large impacts on the environment and the climate. If this is then juxtaposed to the great world population growing quantitatively and qualitatively, it is easily understandable why the waste and loss of all these resources have terrible consequences on the planet, on the society and finally on the economy.

For this reason, the Urban Shift project aims at dealing with the Food Waste Challenge to support young entrepreneurs to develop innovative solutions to limit this problem on the urban context.

Thorough reading materials together with more concise inputs were developed by MCRIT and delivered to the learners right after BC1 so that they could get acquainted with the overall topics and start thinking about possible business ideas. These materials include background information of food waste with data, statistics and clarifications on where it occurs. Afterwards, extensive information is given on the consequences of food waste on environmental and human dimensions, on the current strategies to prevent food waste and on the barriers. Finally, a documentation of 10 case studies is provided.

6.2. Batch 1 – Urban Heat Islands

Urban Heat Islands is the other challenge covered by the first batch of the Urban Shift Project. The world is urbanizing quickly, which means that more and more people live in towns and cities instead of the countryside. At the same time, global temperatures are increasing due to the human-induced climate change. The result of these two phenomena are very high summer temperatures in urban environments, that seem to become more frequent and are causing criticalities in the well-functioning of the cities. In addition, urban heat islands have very dangerous consequences for human health and wellbeing. Warmer countries such as the Mediterranean ones are increasingly being jeopardized by this effect and are trying to find strategies to deal with the situation.

For this reason, the Urban Shift project aims at dealing with the Urban Heat Islands Challenge to support young entrepreneurs to develop innovative solutions to mitigate this problem.

Thorough reading materials together with more concise inputs were developed by MCRIT and delivered to the learners right after BC1 so that they could get acquainted with the overall topics and start thinking about potential business ideas. These materials include background information and the causes of this phenomenon as well as the effects in Europe. Afterwards, extensive information is given on the consequences of urban heat islands on the environmental and human dimensions, on the current strategies to prevent or mitigate them and on the barriers to their mitigation. Finally, a documentation of some case studies and mitigation strategies is provided.

6.3. Batch 2 – Extreme Weather Events

Extreme Weather events is one of the two challenges covered by the second batch of the Urban Shift Project. Our climate is constantly at flux, warming and cooling over the passage of millennia, but in the past century, these changes have increased significantly, putting ecosystems, human health, and economies, at risk. In addition to a general increase in temperatures worldwide, the Earth has experienced more frequent, more intense, and longer extreme weather events. Extreme weather



events (EWEs) are natural occurrences, seen across the globe since before anthropogenic times. The more frequent occurrence of these events is what urges us to take action.

The Urban Shift project is an opportunity to take action and an attempt for young entrepreneurs to develop innovative solutions to deal with the Extreme Weather challenge.

Thorough reading materials together with more concise inputs were developed by MCRIT and delivered to the learners right before BC1 so that they could get acquainted with the overall topics and start thinking about potential business ideas. These materials include background information and the causes of this phenomenon, as well as the negative consequences on the environmental and human dimensions. Afterwards, extensive information is given on the extreme weather events already happening in Europe with some forecast for the future trends. Finally, a documentation of strategies to mitigate extreme weather events and the relative barriers is provided.

6.4. Batch 2 – Urban Mobility

Urban Mobility is the second challenge covered by the second batch of the Urban Shift Project. The concept of mobility has encompassed the ability to move and access various destinations and opportunities. It includes not only the physical act of transportation but also the social, economic, and behavioural aspects associated with movement. Mobility involves the choices people make regarding their travel patterns, the accessibility of transportation options, and the impact of transportation on quality of life, social inclusion, and environmental sustainability. As said before, the world population has already moved from the countryside to more urbanized areas, and will continue to do so, for this reason the need for mobility within and between cities and towns in the context of an ecological transition must be tackled.

The Urban Shift project is an opportunity for young entrepreneurs to reflect upon the subject matter and an attempt to develop innovative solutions for smarter mobility practices.

Thorough reading materials together with more concise inputs were developed by MCRIT and delivered to the learners right before BC1 so that they could get acquainted with the overall topics and start thinking about the business idea. After some background information on what mobility is and why it is necessary to consider it more and more, the materials focus on the challenges the European mobility system and infrastructure is facing, as well as the opportunities of a good mobility system in an economy that tends to become more and more circular. Additionally, the current barriers and future trends of mobility are presented. Finally, the current strategies and a collection of case studies are proposed.

Supporting materials

Food Waste:	Paper and Powerpoint
Urban Heat Islands:	Paper and Powerpoint
Extreme Weather Events:	Paper and Powerpoint
Urban Mobility:	Paper and Powerpoint

7. Learning Events

Chapter 7 describes (a) the basic process of designing the learning events and (b) an overview of each learning event, focusing on objectives, contents, methods and addressed skills and competences. The current Curriculum provides information of both batches. After every event a paragraph summarizing “Suggestions for future development” is included. This paragraph contains measures for improvements which were raised in the revision session of the 2nd batch and were agreed upon by the Consortium.

The learning path of the Urban Shift Curriculum is marked by seven learning events, which aim at structuring the learning process and providing opportunities for feedback and re-design of the curriculum:

- Bridging Courses
- Living Labs Kick-off
- Specialized Skills Training
- Advanced Skills Training
- Cities Network Engagement Roundtable
- Living Labs Closing Event
- Coaching Sessions

7.1. General approach - process and materials

For the curriculum development it is crucial to develop each learning event collaboratively, coherent and in time, following a jointly agreed process:

Preparation: Each learning event is prepared in the project consortium, following the structure below, which is agreed in the consortium as well. While the responsibility for the planning process lies with the WP responsible, the detailed elaboration of parts can be assigned to different consortium partners. WP4 team prepares a planning template, that can be used for single parts of more complex formats, like the Living Labs Kick-off, as well. WP4 team also takes care that all necessary decisions have been made and that the completed templates are available before the start of the learning event.

<i>ELEMENTS</i>	<i>DESCRIPTION</i>
<i>OBJECTIVES</i>	What are the main objectives of the format? Describe the concrete learning objectives and the contribution to the curriculum objectives
<i>CONTENTS</i>	Which contents are tackled? Go into detail if they are known before the start Describe the process if contents are developed during the course Why were these contents selected? Describe the needs of students they refer to Or other reasons for the selection What are the sources of the selected contents? Indicate, if partners or urban experts provide the contents Or other sources, like other study programs, open-source contents
<i>MATERIAL</i>	Which study material will be used? Describe the material for trainers and for students and how it can be accessed
<i>FORMATS & METHODS</i>	Which formats and methods are used for different parts of the formats? Describe which learning approaches, formats and methods will be used and why
<i>ADDRESSED SKILLS</i>	Which skills are addressed in the format? Assign to green, digital, business, and transversal skills, as far as possible
<i>TRAINERS</i>	Who are the trainers for which part of the format? Indicate the trainers for the different parts and their role

<i>ORGANISATIONAL FRAMEWORK</i>	How is the format organized? Place: onsite, online, blended learning Timeframe Specific requirements
<i>PREPARATION</i>	Are there specific preparation requirements for students? Indicate, if any survey, preparation of material, etc. are planned
<i>EVALUATION</i>	How is the evaluation process planned? Describe the evaluation tools for feedback of students and trainers

Implementation: Each learning event is conducted according to the agreed structure. If changes are necessary, they have to be communicated, at least in the documentation. The WP responsible and trainers take care that the planning templates, learning materials and other resources are stored on TEAMS. If the learning event lasts over a longer period, it is recommended to take notes on observations and experiences that flow into the final evaluation.

<i>ELEMENTS</i>	<i>DESCRIPTION</i>
<i>CONTENTS</i>	Which contents were tackled? Are the addressed contents appropriate to meet the objectives? Any adaptations necessary?
<i>FORMATS & METHODS</i>	Which formats and methods were used? Are the formats/methods appropriate? Any adaptations necessary?
<i>ADRESSED SKILLS</i>	Which skills were addressed? Assign to green, digital, business, and transversal skills, as far as possible
<i>ORGANISATIONAL FRAMEWORK</i>	Was the organisational framework appropriate?
<i>OBSERVATIONS</i>	Do you have additional observations?

Evaluation: After or at the end of each learning event a two-folded evaluation is conducted. One is addressed to the students, either in form of online surveys or interviews, and conducted by the trainers; the other is addressed to the trainers and conducted by WP4 team. Both evaluations follow the same structure to compare and verify the outcomes. For the evaluation a common template is created that is used for each format with adaptations, if necessary, by WP2 and WP4 team.

7.2. Learning events

Bridging Courses 1 & 2 – 1st batch

The two Bridging courses took place in December 2022 and February 2023. The focus on these two learning events was to make the learners acquainted with how the project would function, with the two urban challenges as well as with the other participants. In particular, the learners participated in 6 “speed dating sessions” in which they could introduce themselves and share their academic as well as professional background. Afterwards, the learners participated in 2 rounds of deep discussions on the Urban Challenges. All learners had the chance to join the discussions for both topics. The learners also



participated in some activities to start working with tools useful for elaborating a business idea as well as with exercises to foster team creation and spirit. In particular, BC2 focused on the Problem canvas. After an explanation from the consortium, the learners took part in 2 discussion rounds and tried to develop their own Canvas applying it to previously selected sub-topics connected to the Urban Challenges. An inspirational keyword list was shared with them beforehand. Additionally, learning materials were provided as well as the request to create a profile of their own personality and skills.

Bridging Courses 1 & 2 – 2nd batch

The two Bridging courses took place in November 2023 and January 2024. The focus on these two learning events was to make the learners acquainted with how the project would function, with the two urban challenges as well as with the other participants. In particular, in the first BC learners participated in 2 rounds of “speed dating sessions” facilitated by Mcrit in which in parallel the two challenges were discussed “Mobility/ Circularity” & “Extreme Weather Events”. This was followed by a detailed description of the project schedule. The second BC was very hands-on. The business canvas methodology was presented by WP3 applied to the two urban challenges. Afterwards, the learners were divided into two groups (according to their favourite Urban challenge) and the Problem Canvas methodology was applied and tested by the learners with the help of the Consortium. There was then a deep introduction by GIG on the Design Thinking methodology with the group all reunited in the main “Zoom-call”. Finally, the Kick-off agenda was presented, together with the homework in preparation for the next steps.

SUGGESTIONS FOR FUTURE DEVELOPMENT: As a result of the feedback data collected in the 2nd batch and the discussions from the revision session, the Consortium agreed that:

1. It should be allowed to students that ask for it, to work on both challenges during the bridging courses.
2. Informal opportunities for interaction before the Kick-off such as “non-compulsory gatherings” could be organized to speed up team spirit.

Supporting materials

Planning template

Living Labs Kick-off Event – 1st batch

The Kick-off event took place in Vienna for five days in March 2023. The overall goal was creating teams based on common interest (personal, urban challenge) and complementary skills (background knowledge, personality traits). The Teams went through a design thinking process:

1. Problem analysis: to deeply understand the challenge, get insights from people who have these problems.
2. Solution finding: to ideate and test the potential solutions.

From the very 1st day, learners were placed in preformed groups based on their interest in a specific urban challenge, interest in creating a product or a software solution, different educational backgrounds and personality types. They underwent two deep rounds of analysis on the problem using the problem canvas, specifically for narrowing down the problem to be tackled to something very specific. In this phase, learners were very focused, and the sessions intense, nonetheless they were always accompanied by breaks in which learners had the chance to talk to the other teams (and swap teams if wished), and teambuilding exercises. The 2nd day was dedicated to problem validation. The teams elaborated a survey on the problem they wanted to tackle, which they administered to up to 50 people in the city of Vienna. They then analyzed the data collected on the field and drew some useful conclusions to step from the problem statement to the solution idea. Throughout the day they also had



the opportunity to select their coaches and have their first coaching sessions with them. The learners were given the possibility of swapping teams until the end of the 2nd day. The 3rd day was all about the solution idea: the first half of the day focused on reducing their idea to the two best solutions, and the second half, on validating these ideas through another session of market validation, collecting data on the field (new interviews). On the 4th day the learners were introduced the pitching techniques and had coworking sessions to prepare their pitches and deliver it to the jury in the late afternoon. The 5th and last day had some free working sessions for the teams, coaching sessions, and some final presentations from the Consortium on the next steps to take with their prototype and their team, as well as some hints on how to best work remotely and at long distance.

Living Labs Kick-off Event – 2nd batch

The Kick-off event took place in Vienna for five days at the end of February – beginning of March 2024. As for the 1st batch, the overall goal was creating teams based on common interest (personal, urban challenge) and complementary skills (background knowledge, personality traits). The Teams went through a design thinking process:

1. Problem analysis: to deeply understand the challenge, get insights from people who have these problems.
2. Solution finding: to ideate and test the potential solutions.

From the very 1st day, learners were placed in preformed groups based on their interest in a specific urban challenge, interest in creating a product or a software solution, different educational backgrounds and personality types. They were given the possibility of swapping team until the following day. The focus of the first day was getting to know the team and identify the problem. The learners were asked to pitch in their team on the problem, its urgency and the personal connection to it. Throughout the day, several coffee breaks were organized, in which learners could talk/pitch to their peers and swap teams if they felt like it. Additionally, the Consortium gave some talked on the Problem Canvas for problem identification. Finally, a scavenger hunt was organized to facilitate team building. The 2nd day was dedicated to problem validation. The day started with an inspirational talk from Klimatile, the team winning the 1st batch. Then, the Consortium gave some inputs on the importance of field-validation of the teams assumptions. Learners were asked to create a survey (Google form) to be administered to up to 50 people. In the afternoon, they had a chance of getting inputs on their problem from the other teams and on working on the data and feedback collected. At the end of the day, the learners got an input from the consortium on physical and digital prototyping possibilities. The 3rd day was all about ideation and solution validation. Teams were asked to discuss potential solution ideas, rank them reflecting upon their impact and their feasibility, and finally start “killing” some ideas. Learners were then asked to prepare a second survey to be administered to experts for solutions validation. By the end of the day, learners aligned on one idea. They then got inputs from the Consortium on the next steps: making a sellable prototype, making a market entry plan, sketching the idea, preparing an investor pitch, setting roles and tasks within the team and be prepared to work remotely. On the 4th day, the coaches were assigned to the teams and the first coaching sessions took place. Additionally, the teams were asked to continue their validation with some cold calling, market research and market validation (surveys). Then the teams got an introduction to pitching and were asked to work on their own pitch. Finally, an important session on communication, conflict resolution and team work took place. The day ended with a feedback session organized and facilitated by Terra and Mcrit. The 5th and last day had some working sessions for the teams, coaching sessions, the final pitch and the celebration concluding the event.

SUGGESTIONS FOR FUTURE DEVELOPMENT: As a result of the feedback data collected in the 2nd batch and the discussions from the revision session, the Consortium agreed that:



1. A session with an expert from the industry might be implemented to five more technical, sustainability and discipline-oriented know-how during problem definition and ideation.
2. The teambuilding activities should be less “structured” especially in the last 3 days of the event (to reduce stress and time pressure), but at the same time more space for informal gatherings should be provided to make team members get to know each other.
3. In specific cases, the Consortium might intervene more in the team formation, if the team lacks important skills.
4. Allocating more time to the ideation phase and market research, and a bit less on problem validation (which can still be done after the Kick-off).

Supporting materials

Planning template
Presentations

Advanced Skills Trainings (AST) – 1st batch

The ASTs aimed at creating an entrepreneurial spirit, equipping the learners with business related knowledge, and tools and offering opportunities to apply them. They received inputs to deepen the understanding of global interlinkages and dependencies, and how to build up social and environmental responsibility. The ASTs sessions took place from March onwards and dealt with the following topics: Design Thinking & Lean Start-up, Pitching & Market entry, and Sustainability Assessment & B Corp Framework. The first and the third were organized as a group training, whereas the second one was an individual training. The sessions made use of highly interactive and hands-on tools and methods, such as design thinking, the Double Diamond Innovation Framework, Discussion around Market needs analysis, the Green Lean Business Model, and Break-out rooms. All the ASTs were organized and carried out jointly by GIG and PUD.

Advanced Skills Trainings (AST) – 2nd batch

In addition to the ASTs from the first batch, the second one had a course on Brand Management organized by HdM. That is because this topic was seen as relevant for all learners.

SUGGESTIONS FOR FUTURE DEVELOPMENT: As a result of the feedback data collected in the 2nd batch and the discussions from the revision session, the Consortium agreed that:

1. The ASTs sessions should be recorded for further use.
2. Programs should be shared in advance, so students can decide if they need that inputs or not (some were found repetitive by some learners)
3. Given that on-line sessions were challenging for the trainers, organising hybrid sessions could be an option, for example learners can watch a recorded session and then can meet in-person and/or on-line to discuss it.

Supporting materials

Planning template
Presentations

Specialized Skills Trainings (SST) – 1st batch

The SSTs were topic and institution-specific sessions organized by all educational institutions both online and onsite. These courses took place from March onwards. A list of the trainings follows.

Organisation	Content	Format
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HdM	Course “Advance” with 20 units: - Problem interview - Project management - Prototyping light - Brand Strategy - Validation - Market + Competition - Patents + IP - Business Modelling - Growth Hacking - Crowd Funding	Onsite & online
IAAC	Study course with 8 units: - Introduction to Urban Shift - Green Deal & Technology Readiness Level - Design Market Research & Analysis - EU Funding Framework - Update on start-up development 1 - Update on start-up development 2 - Computational and Fabrication Support and Strategies - Fabrication of the prototype - practical session	Onsite
WIFI	Product & Process Development	Online
	Carbon Footprint & Circular Economy	Online
	Ecosystem & Stakeholders	Online
	Risk Management	Online
WU	Best Practice Case Sustainable Business Model	Onsite
	Development of the start-up: one-on-one	Onsite: one-on-one
	Vienna Entrepreneurial Ecosystem + Funding opportunities + SDGs	Onsite
	Preparation of the pitch	Onsite One-on-one

Specialized Skills Trainings (SST) – 2nd batch

As for the first batch, in the second batch the SSTs were topic and institution-specific sessions organized by all educational institutions both online and onsite. These courses took place from March onwards. A list of the trainings follows.

Organisation	Content	Format
WU	Sustainable Business	Onsite
WU	Business Strategy and Funding Ecosystem	Onsite
WU	SDG-Intro and Impact Strategy	Onsite & written homework
WIFI	- Customer-Centric Product Development (Everything using the example of energy and/or building technology) - Co-Creation - How do I build my product together with my customers? - Core technologies – Digital Twins, IoT/sensors, cloud	Online
WIFI	- Carbon Footprint - Climate change - Design projects without environmental burden	Online

WIFI	- Funding, finding and communication to investors - Contract with investors - Practical contact from the car industry	Online
IAAC	- Intro & Innovative Case studies - EU Green Deal & Technology Readiness Level - One-on-one Check-ins (after the Vienna Kick-off) - One-on-one Design Reviews (3 sessions) - EU Research Framework - Digital Fabrication Workshop	Onsite
HdM	- How to be a Greenpreneur	Online
HdM	- How to be a Social Impact Entrepreneur + - Sustainability, Innovation & Collaboration Impact	Online & Onsite
HdM	- Design of virtual/ digital products	Onsite

SUGGESTIONS FOR FUTURE DEVELOPMENT: As a result of the feedback data collected in the 2nd batch and the discussions from the revision session, the Consortium agreed that:

1. As a general feedback to all Institutions, it was suggested to organize some pre-training sessions to get to know learners needs and knowledge. The programs could then be adapted to this whenever possible. This is not easy in the case of IAAC, since the SSTs are part of the pre-defined Master's program and cannot deviate a lot.

Supporting materials

Planning Templates

Presentations

Cities Network Engagement Roundtable – 1st batch

This was an online event taking place in May with the participation of 8 urban experts. Some of these high-level professionals were active on the fields of the two challenges working in academia, for public authorities and for the private sector. Others instead were involved in the startup's environment, working with and for startups. Details on the experts follow:

- Coordinator of the Joint Office for Sustainable Food of the Metropolitan Strategic Plan of Barcelona (PEMB) - Specialized in the field of food sovereignty (commercial circuits, education, health, and public procurement)
- CEO & Co-Founder of Spootainable, one of the 10 most innovative start-ups in Germany
- PhD architect, Professor in Urban Design and Planning at University of Genoa
- CEO & Co-Founder of Naked Innovations, Mentor startup accelerators and incubators in the agrifood industry, with over 500 startups graduating through them
- Head of Strategic Planning and Partner of MCRIT/Multicriteria Consulting Specialist in urban, regional, and strategic planning, sustainability, and environmental evaluation
- Project Director at Fundació BIT Habitat (Barcelona City Council), Project Director with an engineering and urban planning background and experience of more than 15 years in urban planning, design of urban policies, and economic development strategies
- Landscape Architect and GIS analyst at the LAND Research Lab. Currently, she is the project manager in UrbAlytics (H2020), which focuses on the Urban Heat Island effect in cities and implementation of Nature Based Solutions for climate adaptation



- Head of Startup-Services at Austrian Federal Economic Chamber | StartupNOW, and European Digital Leader at the World Economic Forum. Former CMO & COO at primeCROWD, Austria's biggest network for startup investors

Throughout the event, the experts presented the state of the art, and the learners were able to ask questions. In the second phase of the event, the learners pitched their startup ideas, receiving high-quality feedback from the experts both on the business idea, as well as on the business model and financial viability of the startup.

Cities Network Engagement Roundtable – 2nd batch

This was an online event taking place in April with the participation of 6 urban experts. Some of these high-level professionals were active on the fields of the two challenges working in academia, for public authorities and for the private sector. Others instead were involved in the startup's environment, working with and for startups. Details on the experts follow:

- Head of Strategic Planning and Partner of MCRIT/Multicriteria Consulting Specialist in urban, regional, and strategic planning, sustainability, and environmental evaluation
- Civil engineer, Head of the Mobility Service in ATM Barcelona - He has been responsible for managing and coordinating the development of the new Director Mobility Plan (pdM 2020-2025), covering the twelve regions that form the mobility system of the Barcelona metropolitan area.
- Mcrit Business Developer & Legal Advisor, Multicriteria Consulting - a Corporate Lawyer with private equity and management consulting experience, now contributes to Spain's startup ecosystem. After his MBA at IESE, he is leading the development of a cleantech spin-off from Mcrit, focused on innovation and sustainability.
- ÖVG General Secretary & Managing Director Austrian Transport Science Society – she builds connections across the mobility sector through events and conferences, often speaking or moderating at international forums. She previously led partnerships at startups in shared mobility and bicycle subscriptions.
- Co-founder and CEO at Energytrack / Ambassador for GOOD - he is a former Urban Shift participant, is Co-founder and CEO of Energytrack, focused on helping businesses manage electricity costs and reduce emissions. He has co-founded other sustainable startups and serves as an ambassador for GOOD, a sustainable search engine.
- PostDoc at TU Dortmund - is a postdoc at the Chair of Land Policy and Land Management in the School of Spatial Planning. Previously, he worked on resilience, flood risk management, and spatial planning at the Centre of Spatial Planning and Mobility. He holds master's degrees in Marine Spatial Planning and Landscape Planning.

Throughout the event, the experts presented the state of the art, and the learners were able to ask questions. In the second phase of the event, the learners pitched their startup ideas, receiving high-quality feedback from the experts both on the business idea, as well as on the business model and financial viability of the startup.

SUGGESTIONS FOR FUTURE DEVELOPMENT: As a result of the feedback data collected in the 2nd batch and the discussions from the revision session, the Consortium agreed that:

1. As a general feedback, it was very difficult to find high-profile experts willing to participate for free to the Urban Shift event. As a consequence, for the future it is suggested to foresee part of the budget as a remuneration for experts.
2. The event might be divided into two sessions, one per Urban Challenge so that all learners and trainers are able to see all startup pitches.



3. The information on the event should be send out to leaners earlier on, in order for them to have more time to prepare for such a “challenging” event.

Supporting materials

Planning Template

Living Labs Closing Event – 1st batch

The Closing Event took place in Barcelona in June 2023 for 4 days. Its main objectives were learning about the importance of the first customers or pilot project, learning tricks for sales such as cold calling, framing the startups final pitches and receiving very valuable feedback from experts of the fields during the final presentations. In particular, on the 1st day, among some teambuilding activities and the visit to Valldaura (detached property of IAAC in the outskirts of Barcelona), the learners participated in some sessions on the importance of having a first client, did some pitching training, made some cold calling with potential clients and did some coaching sessions. On the 2nd day, the start-ups attended some sessions on the bureaucratic process for registering a start-up, on shareholder’s agreement, on how to handle the next intense steps of the start-up life. Then, the Living Exhibition Events were presented, and the teams were asked to select a representative. Afterwards, the teams had two individual working sessions, in which the teams could finalize their prototypes and their pitches, in the meanwhile the Consortium was available for questions and doubts. The Consortium then organized a feedback activity to collect the learners’ impressions on the project. Finally, the start-up teams participated in the final pitching event where a jury of highly qualified experts evaluated their prototypes, their business idea, and the solidity of their start-up. In the following two days, the Consortium and the start-ups did a debriefing session on the pitching event and exchanged on potential funding opportunities at national as well as EU level and crowdfunding. PUD and GIG then offered support to review the business plans. Finally, the learners did some teambuilding activities and did some individual working sessions without the Consortium’s support.

Living Labs Closing Event – 2nd batch

The Closing Event took place in Barcelona in June 2024 for 4 days. Its main objectives were learning about the importance of the first customers or pilot project, learning tricks for sales such as cold calling, framing the startups final pitches and receiving very valuable feedback from experts of the fields during the final presentations. In particular, on the 1st day, among some teambuilding activities, the learners shared the prototypes they have been working on, and can finalise the last details, then a visit to Valldaura (detached property of IAAC in the outskirts of Barcelona) was organized. During the visit to Valldaura the Consortium facilitated a feedback and reflection session for the learners. On the 2nd day, the start-ups participated in some sessions on the importance of having a first client, on the bureaucratic process for registering a start-up, on shareholder’s agreement, on how to handle the next intense steps of the start-up life, and on potential funding opportunities at national as well as EU level and crowdfunding. Then, the Living Exhibition Events were presented, and the teams were asked to select a representative. Afterwards, there was a last session on pitching and then the teams had individual working sessions, in which the teams could finalize their pitches, in the meanwhile the Consortium was ready to support. The 3rd day was all about getting ready for the pitch, with teams working individually as well as together with their coach. There was also a mock pitch session, in which teams pitched in from of the Consortium and received feedback. On the 5th day, after a short working session, the final Pitching with the jury of experts took place. As in the 1st batch, the jury evaluated the prototypes, the business idea, and the solidity of the start-up team. Afterwards, the celebration for the conclusion of the batch took place.



SUGGESTIONS FOR FUTURE DEVELOPMENT: As a result of the feedback data collected in the 2nd batch and the discussions from the revision session, the Consortium agreed that:

1. As a general feedback, the need of planning, facilitating and mediating better the internal discussions on how to proceed with the start-up raised. The teams seemed to be not prepared for this and were very unsure about the next steps. It is suggested to involve in the project much more and on a regular basis an expert on communication and conflict resolution.
1. As not all coaches were very experienced, it was suggested that all teams could have a chance to exchange with the most experienced coaches in the Consortium.

Supporting materials

Planning template

Presentation on pitching, cold calling, first customers, funds and investors, etc.

Coaching Sessions – 1st & 2nd batch

Obviously, the topics and contents dealt with during the coaching sessions varied a lot depending on the business ideas the startups had. But also, other issues were touched such as team dynamics, business strategy, remote cooperation, and so on. The coaching sessions started in the Kick-off event, when the startups selected their coach and finished after the Closing event, when some of the teams still met their coach for advice on the next steps. The coaches reported meeting their team every 3 weeks on average and being always available and reachable for the team. What appeared to be a good practice, was from the team to send the coach before the meeting a list of points they wanted to discuss, which made the coaching sessions very productive.

SUGGESTIONS FOR FUTURE DEVELOPMENT: As a result of the feedback data collected in the 2nd batch and the discussions from the revision session, the Consortium agreed that:

1. As a general feedback, coaches felt the need for more exchange with the other coaches. The “Train the Coach” sessions organized by PUD were seen as very useful, yet should be planned on a more structural basis.
2. Coaches should be more trained to face teams’ dysfunctions. Sessions on this topics should be organized also for the learners and be made compulsory.
3. Coaches should push teams to look for skills even outside the projects, for example by integrating other young professionals in their team. This would solve some problems due to the lack of knowledge on specific topics.
4. Organizing opportunities for the teams to have feedbacks and inputs from more than one coach.

Supporting materials

Coaching template



8. Evaluation Framework

Chapter 8 deals with the evaluation framework based on the EQF and ESCO. The evaluation, and the consequent feedback integration is a fundamental component of this project and of the Curriculum, as it is supposed to be “living”, flexible and on-going, to adapt to new challenges, to new learners and to different structural conditions. The Final evaluation Framework is part of a separate document.