

GREEN SKILLS FOR CITIES

Long-Term Programme Resources

Report

WU, IAAC & UNIGE

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1. FOREWORD

The “Long-term Programme” aimed at creating a transdisciplinary educational format embedded in each of the participating HEIs academic programmes. The project brings together teachers and learners from the fields of botany, technology, design, and economy involving them in an unique transdisciplinary learning environment aiming at the development of curricula targeted at working in the public sector and involves three educational institutions (Institute for Advanced Architecture of Catalonia, University of Genoa and Vienna University of Economics and Business) and one cities network (ALDA - European Association for Local Democracy).

The resources include two theoretical modules and two practical modules developed by each HEI. Flipped teaching was used as a joint teaching method across the HEIs and applied for the theoretical modules, where the students were asked to learn the material before participating in classes to address doubts. Thus, the theoretical modules were completed online. The practical modules focused on learning by doing through project-based learning, giving the students real case studies to analyse and design solutions in an in-class and in-person setting.

2. IAAC

2.1. CONTENT

The resources produced by IAAC focus on designing nature-based solutions at the urban scale, using digital simulations to collect and visualize data. The two presentations provide an introduction to urban ecology, ecological connectivity and data-driven design. More specifically, the first focuses on the concept of planetary urbanism and the role digital tools can play in design. The second presentation demonstrates how the concepts of ecological connectivity and data-driven design are implemented in rewilding and renaturing projects. All concepts and strategies are demonstrated with examples of student projects and research. Each presentation is accompanied by a video tutorial.

In addition, two in class activities were designed to see if the students understand the content of the presentations.

2.2. TEACHING METHODS

Learning by doing is used as the methodology for the activities while flip teaching is used to present the resources. Computational design is a digital tool used by many designers to design with data. The first activity transforms a digital tool into an analogue tool to test the students' understanding, while applying the activity to a real case study. The second activity includes visiting a local site and analyzing the site for themselves. Through creating a collage, the students should be able to demonstrate what they saw on site and how a nature-based solution could transform the site.

2.3. RECOMMENDATION FOR USE

The resources should first be given to the students to review. Following the review, the activities should be completed in class to test the students' understanding.

Links and the bibliography can be used for further reading.

3. UNIGE

3.1. CONTENT

UNIGE created learning material on the design of nature-based solutions from the perspective of both Botany and Technology disciplines.

The resources provided include two study-at-home presentations accompanied by video tutorials and two in-class activities. The first presentation introduces basic ideas on climate change, urban densification, biodiversity, ecosystem services, and nature-based solutions. The second presentation describes nature-based solutions in detail, providing specific content on technological aspects and characteristics and performances of plant components.

The first in-class activity is a world cafe discussing a few topics mentioned in the presentations. The second in-class activity is a design game, helping the students implement what they learned reviewing the presentations.

3.2. TEACHING METHODS

The teaching methods used by UNIGE included flip teaching for the theoretical modules, a world cafe and learning by doing methods for the in-class activities. Moreover, due to their mixed background (Botany and Architecture), the students experienced an actual multidisciplinary design process during the design game.

3.3. RECOMMENDATION FOR USE

The study-at-home material should be handed to the students before the in-class activities. Adequate time should be provided to the students for understanding and reviewing the resources. Working in a group is mandatory for the in-class activities.

4. WU

4.1. CONTENT

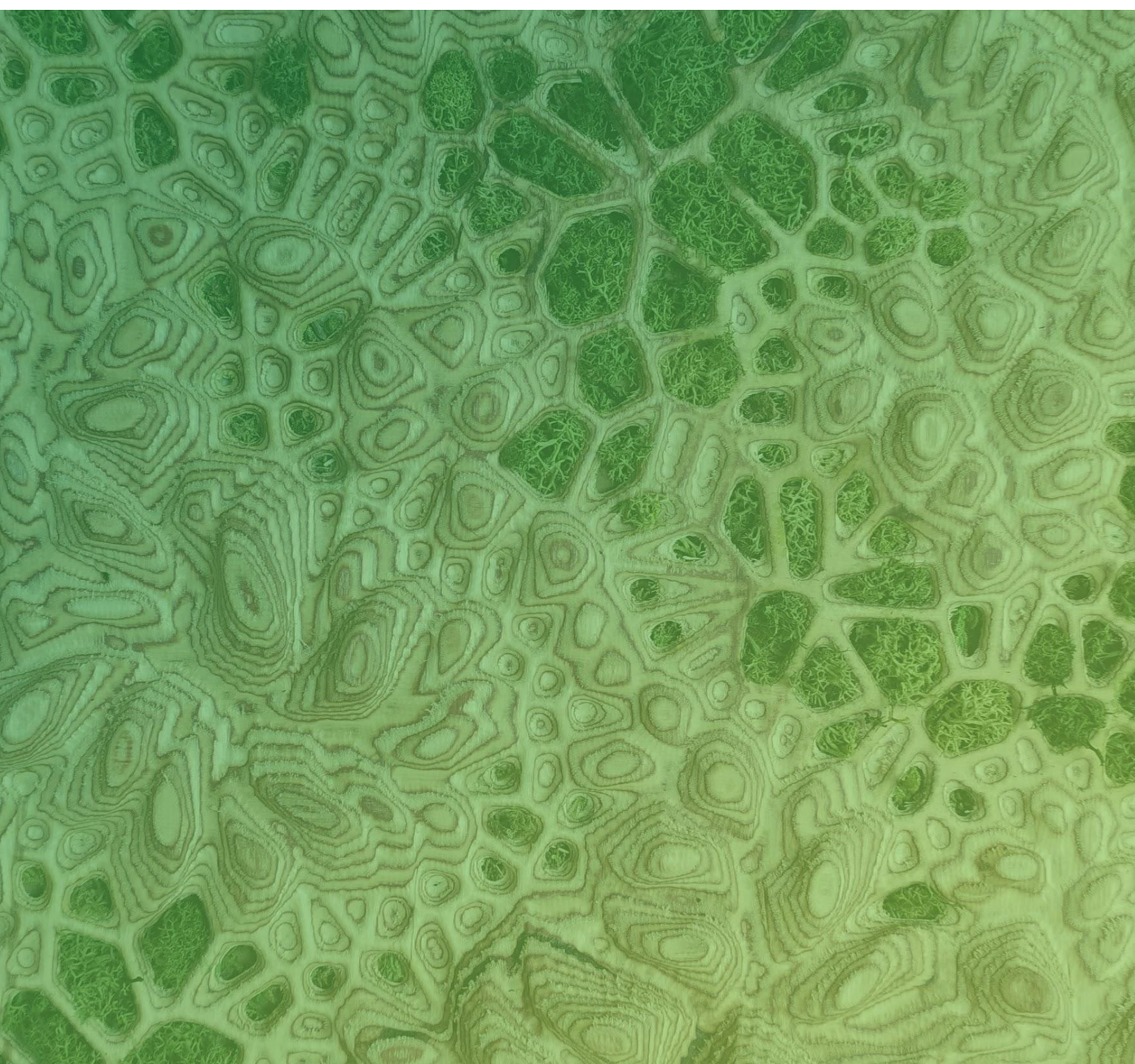
Lesson 1 of the theoretical modules introduces students to Business Sustainability and using a Business Model Canvas for NbS. They prepare for the in-class lesson by choosing an NbS and evaluating its environmental, social, and economic value. In class, they focus on elements of the Business Model Canvas for NbS: Value Propositions, Key Activities, and Key Partners. Lesson 2 of the theoretical modules covers financing NbS, relevant EU policies, and an introduction to pitching. To prepare for the in-class activity, students examine the case study "Biotope City" in Vienna to understand its financing. In-class they work in groups on various financial instruments and engage in a pitching exercise.

4.2. TEACHING METHODS

Teaching methods applied for the WU theoretical modules were flipped teaching. Students received slides and videos before the in-class lessons to prepare. Lesson 1 made use of a World Café method for the practical module. Lesson 2 used Jigsaw teaching and a pitching exercise for the practical module. All methods include group work.

4.3. RECOMMENDATION FOR USE

The resources should be handed to students before the in-class activities to ensure that they have prior knowledge on the topics. For each lesson, there is a section on "preparation for the learning activity in class", with some short activities that can be completed at the students own time at home. These give them some insight into the work they will be doing in the in class activities. In order to facilitate the activities for the teachers and trainers at the other HEIs, instructions for trainers are also included which have a step-by-step explanation of the in-class activities.



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