

## THE PORTFOLIO

**Course aim** - to explore a wide spectrum of ecosystem services provided by urban green areas in relation to the well-being of local inhabitants under climate change threats. It integrates theoretical and practical perspectives of the ecology of urban greenery, studies of recognized cases of urban trees mapping/ inventory, community engagement in urban forestry management, and its linkage with urban sustainability and global health.

**Format:** 2 weeks online (week 20 and 21 with 5 lectures + 5 seminars weekly), 1 week on site in Uppsala (week 22, 27-31 May 2024 with 2 lectures + 1 seminar, 1 visit to municipality, fieldwork, final coursework presentations). Course schedule is available [under this link](#).

### **Course planning:**

1. The teachers' group has been finally formed under the course concept in spring 2024 and the planning process started in the fall via series of online meetings.
2. To finalize the course schedule, to decide on pedagogical methods as well as forms of evaluation and assessment, we met for an onsite 2-days planning in Tartu University in March 2024. During the meeting we connected course' learning outcomes with the thematic blocks set in the course schedule ([link to the integration process](#) in a form of a table connecting the outcomes and course themes).
3. We followed up in an online format until all has been set for a course start.
4. Rooms booking, course content placing in the Canvas, assisting international students with registration in UU has been done by the course team within a year prior the course start.
5. The course has been additionally promoted with the poster at the T&L conference in 2023 and via personal contacts.

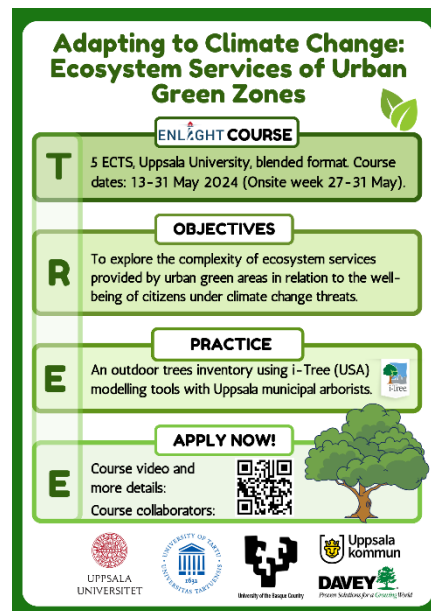
**Informal and teambuilding activities during an onsite week**, aiming to create a trust and friendship atmosphere in the group, to explore Uppsala together, and to enjoy multicultural diversity:

- A round of icebreakers using applied drama/theater techniques at the first morning in the classroom;
- Potluck lunch on the grass at the first day with students and teachers sharing some local cuisine from their countries;
- Guided tour around UU with Mikael Norrby, the university guide, at the first evening after classes.
- A short evening hike around Uppsala on Wednesday with one of the teachers.

### **CRITERIA FOR THE 2024 AWARD**

#### ***Transversal competences that support innovation and creativity***

The course has a narrow yet interdisciplinary topic that determines a big variety of professional background of the student group and trains their trans-disciplinary communication skills. Leadership and



**Adapting to Climate Change: Ecosystem Services of Urban Green Zones**

ENLIGHT COURSE

**T** 5 ECTS, Uppsala University, blended format. Course dates: 13-31 May 2024 (Onsite week 27-31 May).



**OBJECTIVES**

**R** To explore the complexity of ecosystem services provided by urban green areas in relation to the well-being of citizens under climate change threats.

**PRACTICE**

**E** An outdoor trees inventory using i-Tree (USA) modelling tools with Uppsala municipal arborists.

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**E** Course video and more details:   
Course collaborators: 

UPPSALA UNIVERSITET | UPPSALA KOMMUN | DAVEY



collaboration in intercultural environment is being developed by intensive group work online, outdoor fieldwork with urban trees in mini groups in Uppsala, and using innovative teaching formats like public debates. This combination of online and onsite activities with a diverse teachers group on board fosters problem-solving and critical thinking. Challenge-Based Education is ensured by working with various stakeholders during the course: from Uppsala municipality to the developers of the ecosystem services modelling tool iTree Eco (based in USA) and thus exploring various worldwide recognized cases on urban greenery planning. In Uppsala, students focus on real life challenges connected to ecosystem services of urban greenery, by visiting the municipality and measuring the trees during the onsite week. They use creativity while designing tree tags that inform local citizens on what ecosystem services trees provide for them. In this way, students learn in practice how to communicate science to local communities. By using online ecosystem services modelling tool iTree Eco to assess Uppsala trees, they gain more of digital competencies.



### **Replicability in the ENLIGHT community**



The theoretical part of the course is represented by several thematic packages and worldwide-recognized cases of urban tree mapping (such as the New York City Street Tree Map), and community engagement including regional (EU), and local Swedish cases; all of those are openly available for replication and use. Topics covered in the course include ecology and biodiversity of urban green areas, municipal inventory systems for urban vegetation, planning and management of urban greenery, as well as related legislation and policies in Sweden and the EU. Furthermore, the course covers related global health aspects, social inequality, cultural aspects, microclimate formation, air and water quality impact, and climate change mitigation in relation to urban green areas. These thematic packages are quite self-sustainable and are ready-to-use for being embedded into other courses upon request.

The practical part of the course is based on the application of an open-source ecosystem services modelling tool iTree Eco that is well presented in Europe and can be used by other ENLIGHT universities as well. An outdoor fieldwork part of the course does not require any expensive or very special equipment to be performed, thus is technically accessible for everyone.

### **Reflection on learning and teaching is embedded in the learning process**

The course consists of 2 weeks online and 1 week onsite, following BIP format. At the end of the every online week, students are required to deliver individual learning journals that are specifically focused on reflection on the learning and teaching during the week. This is how the task is formulated for students:

“The purpose of the Learning Journal is to record your reflections and learning experiences throughout the course week. It is not just a diary or record of what you have done during the week, but a record of what you have learned, tried and critically reflected upon. It helps you personalize and deepen the quality of your learning, both individually, and collectively, by means of *writing reflectively*. One of the most important things it contains is your reflections about how what you have learnt is relevant to you and how you will use the new information/ knowledge/ skills/ techniques in current and future practice.”

### ***Innovative approaches to student involvement***

In the course, a variety of pedagogic techniques is being used, from traditional group work to innovative formats like public debates, creative visualization of course concepts using digital boards (f.i. Miro), World Café format for group discussions online in zoom breakout rooms, etc. Teachers of the course encourage students to keep a conversation during the lectures, transforming traditional way of information delivery to more interactive one. During the onsite week, a reach program has been



designed for students, to keep them being involved in both formal course activities and non-formal ones outside class hours. Among formal ones, an outdoor fieldwork can be mentioned, including tree tags placing on trees and communicating the inventory results to citizens. Among non-formal, we arrange a guided tour through Uppsala University by Mikael Norrby, the university guide; we go for the common hike with students and teachers; we organize a potluck lunch on the grass together at the first onsite day. At the beginning of onsite week, a number of icebreakers and theatre techniques are used to create a positive group dynamics as well as enhance communication and collaboration.

### ***Multi-stakeholder approach***



In this course, a multi-stakeholder approach is used to ensure a variety of perspectives and experiences on the course topics. The core teacher group consists of architects and urban planners (University of Basque Country), biologists and environmentalists (Uppsala University), and public health experts (Tartu University). Besides that, the course engages an arborist consultancy company Trädkontoret AB that has a profound experience in using iTree Eco in Sweden. The course has on board developers of iTree Eco with an introductory

lecture happening online from USA, and city planners from Uppsala municipality that host the student group introducing green areas of Uppsala as a case study and conducting tree inventory together. We believe that this combination of different stakeholders and experts from many countries and backgrounds makes our course a truly unique journey into the world of urban trees, unpacking their importance in face

of climate change for comfortable life in cities. The core of the course is to take care about communities by taking care about trees – that makes the whole theoretical part of the course very meaningful. We basically change the world for better together with all hands on deck!

### **Students' feedback**

*"They created wonderful environment. So caring, friendly and lovely people."* (a direct citation from the course evaluation form)



According to students, the course was well organized, with enriching topics and lectures. Communication was clear and organized, with a possibility to meet people with different backgrounds and experiences, with many lectures by experts in the field. The format was quite diverse with theoretical lectures, computer practice, and fieldwork with an all-in-one experience to discover this topic. Students appreciated a possibility to quantify benefits brought by trees, since that way society can understand better

the value of trees. An opportunity to learn more about ecosystem services, about Uppsala and Sweden.

Comments on lectures: Quality content and direct appreciation; lecturers' engagement and passion; multidisciplinary point of view; the connection between theoretical knowledge and their application in practice.

Comments on group work: A variety of cultures with different points of view; a creativeness of the mixed group; getting better in communication skills.

Comments on assignments: Diversity of assignments, we had a possibility to try different methods and study modes: weekly learning journal help me digest what I learned each week; lots of different assignments mean more chances for people to show their strength, not JUST written or oral participation; new skills about tree measuring.

The full course report is available [following this link](#).

### **Course visual materials**

[Link to selected pics](#) / Selected short videos made by students: [video 1](#), [video 2](#) / [Link to all pics and all short videos](#)



Course educators team working onsite (from left to right): Urtza, Margareta, Oleksandra, Elisabet, and Johan