

## Syllabus / ENV/ NTR-210

### Green Spaces in Urban Development

#### FALL 2021

**Lecturer:** Philippe Boizeau, Assistant Professor

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***Class meets twice a week:***

Tuesday 12:45 - 14:00 lecture

Thursday 12:45 - 14:00 seminar

***Online course tools and materials:*** The course will be conducted online using the Zoom program. Additional tools such as Webex, Whatsapp, Skype or Google Docs can be used. Course materials will be available in the e-course system. Depending on the evolving health situation related to covid-19, a hybrid format (offline and online) will be implemented.

#### Course Overview

In 2018, the Earth has nearly 4.2 billion city dwellers and according to the latest demographic projections of the UN, 2.5 billion more will live in cities by 2050. This significant increase in the urban population raises many issues regarding the use of space and the living conditions of citizens, particularly in terms of environmental conservation. In this context, the easiest « solution » is often to destroy green spaces or to reduce their area in order to make room for housing, shops and roads. But what are the consequences on the living environment, the health and the social life of people living in cities? Shouldn't we protect and foster nature in urban areas? If so, shouldn't we favor long-term – that is, sustainable – solutions that incorporate green spaces into urban development strategies? Would it not be better to rely on these green spaces to develop a green economy in cities?

This course will first define urban green spaces in a broad sense before looking at a variety of relevant concepts such as urban tree, green and blue corridors. We will survey the latest research on trees and examine several examples of green zones in the world in order to provide answers to various questions previously asked. The main focus of the course will be the project of protection and renaturation of the Karagachevaya Rosha Park in Bishkek, implemented by the French-Kyrgyz Association of Ecotourism in partnership with the AUCA.

Students who successfully completed this course will receive a certificate of participation in a project certified COP21.

**Course objective:**

The general objective of the course is that students should acquire deeper knowledge about Green Spaces in Urban Development and get practice in the largest green space of Bishkek called EcoPark especially in the fields of tree diseases and tree planting. In case of impossibility to carry out the practical part in the field, in particular because of the Covid-19 pandemic, videos of experiments related to the learning objectives will be used. Students should be stimulated to discuss and reflect on the possibilities to protect, create and develop urban green spaces which are one of the key elements required to achieve sustainable urban development.

**Learning outcomes:***Knowledge and understanding*

For a passing grade the student must be able to acquire:

- General information on the world's remarkable trees
- Definitions and concepts of urban green spaces
- Fundamentals of tree biology and tree planting
- Knowledge of the functioning of an urban tree
- An awareness that urban trees are the main components of green spaces
- An understanding that urban trees and green spaces provide many benefits to the cities and contribute to their sustainable development
- An understanding that an urban tree is a living being with its own problems and peculiarities
- Some characteristics and properties of the main trees found in Central Asian cities and specially in Bishkek
- An awareness that cities have to protect and develop green spaces for many reasons specially to fight against global warming and air pollution
- An overview of the good practices concerning the management and the development of green spaces through examples of the greenest cities in the world and the case of Karagachevaya Rosha park in Bishkek
- General knowledges on green spaces for further study, personal development and participation in local and global environmental concerns.

*Competences and skills:*

For a passing grade the student must be able to:

- Evaluate the health of a tree according to different criteria;
- Estimate the value of an urban tree according to its location, diameter and health;
- Plant a tree properly and provide the necessary care (subject to being able to carry out field trips);
- Develop a coherent argumentation on green spaces in urban development;
- Make coherent proposals to improve strategies for the integration of green spaces in urban areas with regard to sustainable development objectives.

*Judgment and approach:*

For a passing grade the student must be able to:

- Critically assess the strengths and weaknesses of a strategy for integrating green spaces in an urban development;

**Pre-requisites:** None.

**Methodology:** The course is presented as a series of lectures and discussion sections. At the end of each lecture the questions will be discussed and several additional topics for independent study during the seminars will be offered to students.

**Evaluation and Assessment:** The grade for this course will be based on student's participation during the lectures, including the familiarity with the reading material, the quality of the regular assignments, and the performance in the oral and written exams.

**Examination:** The students will take two exams: the first one is a mid-term test and the second one is an essay-type examination or an individual oral examination. The test consists of questions on short definitions and multiple-choice questions. Exam papers are composed of essay type questions, which require in-depth answers on the topics studied. Individual oral examination consists of both short questions and questions requiring developed answers on the topics studied. Students are not allowed to use books, papers etc. during the exam. Exam questions are compiled from the questions discussed during the lectures. Evidence of using additional sources of information related to the course content will be marked in the form of additional points for examination.

**Grading scheme:** All grades will be awarded in accordance with the scheme given below. *Your points for the class work cannot exceed the maximum of 40.*

**Assignment Points**

Mid-term test and final examination	20 and 30, <b>total 50</b> (maximum)
1 oral presentation, 1 home (research paper) and 1 class assignment (Multiple-choice questions)	10 (maximum for each), <b>total 30</b>
Active participation	<b>10</b>
Bonus for attending classes	<b>10</b>

Penalty for poor attendance:

**Minus 5 for each failure to attend without legitimate excuses**

<b>A</b> 100-95	<b>B-</b> 76-71	<b>D+</b> 47-42
<b>A-</b> 94-89	<b>C+</b> 70-60	<b>D</b> 41-36
<b>B+</b> 88-83	<b>C</b> 59-54	<b>D-</b> 35-30
<b>B</b> 82-77	<b>C-</b> 53-48	<b>F</b> < 30

**Work and Attendance:** Students are expected to attend all lectures and seminars. Written assignments must be submitted to the instructor by the deadline. If a student submits an assignment late (at the latest by 5 pm the day following the deadline), 1 point will be deducted from the final grade for the work (e.g., if your grade is « A » for the work, after deduction, your grade will be « B »). Mobile devices or portable computers should only be used in class for learning purposes and with the professor's permission. If a student who is late marked absent by the instructor, he is considered to be absent for the class, unless excused by the instructor.

**Documentation of reasons for absence:** Any valid reasons for absence should be reported to the Instructor as soon as possible. Legitimate excuses are the following: illness, confirmed by a doctor's note next class; a death in the family; participation in conferences or seminars with preliminary notification to the Instructor and submission of the relevant supporting documents.

### **General Course Outline**

- 1 Course Introduction, Multiple-choice Questions and General Thoughts on Green Spaces in the City
- 2 Definitions, concepts of Urban Green Spaces and the Urban Tree
- 3-4 Fundamentals of Tree Biology for Urban Trees
- 4-5 The Benefits of Urban Tree and Green Spaces in the City
- 5-6 Urban Tree is a living being with Problems and peculiarities – Aspects of Urban Tree Pathology
- 7 Midterm Review and Midterm Exam
- 8-9 Integration of Green Spaces in Urban Development: examples of the greenest cities
- 9-10 Project of protection and rehabilitation of the Park Karagachevaya Rocha in Bishkek (outdoor)
- 10-11 Acceptance for urban trees: Environmental education programs
- 11-12 Biodiversity, Urban Tree selection and planting trees
- 12-13 The Blue and Green Corridor
- 14-15 Future Scenarios, Research Presentations, Final Examination

### **References material for reading**

1. Peter Wohlleben. *The Hidden Life of Trees: What they feel, How they communicate – Discovery from a Secret World* (2017).
2. Andrews Hiron, Peter A. Thomas. *Applied Tree Biology* (2018)
3. Prof. Pascual Berrone Prof. Joan Enric Ricart Costa ana Isabel Duch T-Figueras. *Cities and the environment the challenge becoming green and sustainable Vol.1* (2016)
4. [http://file.scirp.org/pdf/JEP20110500002\\_23161240.pdf](http://file.scirp.org/pdf/JEP20110500002_23161240.pdf)

**Several articles or research papers will be given to read and study from one class to another.**

**Syllabus change:** The syllabus is tentative and may be modified as needed. Any change will be announced in class.