

STUDIO: URBAN_BIOTOPES_Urban Ecology and Planning

- Code Aalto University: MAR-E1037 (ECGS-905 in University of Helsinki)
- Duration: January-May 2020 (III, IV and V periods), Fridays from 9:15 till 17:00
- Students: 10-12 from Aalto University / 10-12 from University of Helsinki
- CREDITS:
 - FULL COURSE (10-15 credits): students undertaking the theoretical part of the course and the Case Study in Otaniemi. All students should develop the assignments included in the 10 credits course. Students undertaking extra credits should define and agree with the teacher the Learning Outcomes, Contents, Learning Methods and Assessment Methods for those extra credits.
 - THEORETICAL COURSE (3 credits): students undertaking the theoretical part of the course, participating in the reviews and writing a course report.
- Responsible teacher: Juanjo Galan (Aalto University)

INTRODUCTION:

This course is based in two initial assumptions. Firstly, because of its systemic and pattern:process methods, Landscape Ecology and Urban Ecology can activate new ways of thinking and working in other city-related disciplines, from land-use or landscape planning to architecture, engineering or social sciences. Secondly, Landscape Ecology and Urban Ecology can foster multidisciplinary and transdisciplinary approaches to the city by recognizing it as a complex and evolving socio-ecological system.

In particular, this studio course will advance in the integration of Ecology and Planning by:

- Facilitating the incorporation of theoretical and methodological inputs based on Landscape Ecology and Urban Ecology in different disciplines.
- Co-defining together new theoretical and methodological frameworks inspired by Landscape Ecology and Urban Ecology to advance in multidisciplinary and transdisciplinary thinking and in the development of more sustainable and resilient urban socio-ecological systems.
- Applying and retrofitting generated knowledge in the Otaniemi Case. Otaniemi would be approached as a complex socio-ecological system and the teams would be expected to develop their proposals based in disciplinary, multidisciplinary and transdisciplinary analyses, strategies and pilot actions to address current and new challenges such as urban densification, climate change and social, economic and cultural transformations.

The work will be developed both individually and in teams and will be structured in the following parts:

- PART1: Theoretical and Methodological approaches to the City: Landscape Ecology, Urban Ecology and Socio-Ecological Systems as catalyzers for Multidisciplinarity to Transdisciplinarity.
- PART2: A Socio-ecological and Urban Biotopes based study of current Otaniemi.
- PART3: Scenarios, Strategies and Pilot Actions for Otaniemi 2020>2050).

OFFICIAL NAME in Aalto: Landscape Ecology in Planning

LEARNING OUTCOMES: After completing the course, students can support their landscape planning and design proposals on the base of landscape ecology and/or urban ecology principles. They are capable to identify processes, changes, potentials and problems in natural systems, understand and assess the interconnection between abiotic, biotic and human factors, as well as their spatial and temporal distributions. In addition, the course contributes to the acquisition of competences for independent research on the topic and for further learning.

CONTENTS: From a theoretical and disciplinary perspective, the course researches the connections between Landscape Planning, Green Area Planning, Landscape Ecology, Ecology and/or Urban Ecology.

From a methodological point of view, the course provides some basic scientific methods to assess the interconnection between abiotic, biotic and human factors in different ecosystems, biotopes or habitats and to understand their spatial and temporal evolution in the landscape.

From a planning perspective, the course applies the acquired knowledge and tools in Sustainable Landscape and Green Area Planning by advancing in the use of Green Infrastructures, Ecosystem Services and circular metabolisms.

From a professional perspective, the course incorporates a reflection on the global and local contribution of landscape architecture for the proposed topic.

WORKLOAD:

- Full Studio (option1: 15 credits): Tutored studies 85 hrs. (lectures, seminars and feedback reviews), independent study 320 hrs. (independent fieldwork, preparation of assignments, readings), in total 405 hrs.
- Full Studio (option2: 10 credits): Tutored studies 50 hrs. (20% of total workload, including lectures, seminars and reviews), independent study 220 hrs. (20% of total workload including Independent fieldwork, preparation of assignments, readings), in total 270 hrs.
- Theoretical course (3 credits): Tutored studies 40 hrs. (lectures, seminars and feedback reviews), independent study 48 hrs. (REPORTS), in total 81 hrs.

SPECIFIC LEARNING OUTCOMES:

- FOR ALL STUDENTS:
 - Incorporate landscape & urban ecology theory and methods in the student's former discipline
 - Understand the Theoretical and Methodological bases used by other disciplines involved in sustainable urban planning
 - Define multidisciplinary theoretical and methodological frameworks to work with urban nature and with landscape ecology in sustainable landscape/urban planning and to approach the city as a socio-ecological system
 - Generate a transdisciplinary theoretical and methodological framework to work with urban nature and with landscape ecology in sustainable landscape/urban planning to approach the city as a socio-ecological system
 - Discuss with solid and academic argumentations the types, roles and potentials of natural systems in the urban context and the principles of landscape and urban ecology
 - Analyze in a rigorous way the different types, processes and evolution of natural systems and biotopes in the urban context
- FOR STUDENTS TAKING THE FULL COURSE (10 or more credits)
 - Apply the above-mentioned outcomes in practical Case studies
- FOR STUDENTS TAKING MORE THAN 10 CREDITS
 - Each student taking more than 10 credits needs to decide how many extra credits they want to do and the Learning outcomes; Contents, Learning methods (field trips, readings, quantitative or modeling studies, etc.) and the Assessment methods (assignments or works) associated to those extra credits. The responsible teachers will discuss, check and approve those individual work plans.

CONTENTS (In red assignments for all the students, in green only full-course students (10 to 15 credits), in blue only for theoretical-course students, in violet for full course students taking more than 10 credits)

- **PART1: Theoretical and Methodological approaches to the City: Landscape and Urban Ecology as catalyzers for Multidisciplinarity to Transdisciplinarity.**
 - PRINCIPLES OF LANDSCAPE ECOLOGY, URBAN ECOLOGY and SOCIO-ECOLOGICAL SYSTEMS
 - **Assignment_1 (individual)**: Reading seminar (choose one reading and present a summary) + Exploring the connections between the Principles & Methods of the student's discipline with the Theory and Methods of Landscape & Urban Ecology (**TOOL1**)
 - DEVELOPING MULTIDISCIPLINARY AND TRANSDISCIPLINARY FRAMEWORKS for MULTI AND TRANSDISCIPLINARY SUSTAINABLE URBAN STUDIES AND PLANNING INFORMED BY LANDSCAPE AND URBAN ECOLOGY
 - **Assignment_2 (teamwork)**: Multi and Transdisciplinary Principles, Models and Methods for sustainable urban studies and planning informed by landscape and urban ecology (**TOOL2**)
 - **Report_2b (individual)**: Report (400-500 words) about Assignment_2
- **PART2: A Socio-ecological and Urban Biotopes based study of current Otaniemi**
 - **URBAN BIOTOPES & SOCIOTOPES** Abiotic and Biotic factors and processes in the Urban Environment + Communities and processes + Biotopes and Sociotopes in Otaniemi

- **A SOCIO-ECOLOGICAL SYSTEM** Socio-Ecological approaches to Otaniemi: Blue-Green Infrastructure, Ecosystem Services, Nature Based Solutions, Sustainable Urban Metabolisms, etc.
 - **Assignment_3 (teamwork):** ANALYSIS+ DIAGNOSIS of current Otaniemi (applying TOOLS1 and TOOL2): General Analysis of Otaniemi + Analysis of its socio ecological system (a collage of Biotopes and Sociotopes, Current Blue-Green Infrastructure, Existing supply/demand of Ecosystem Services).
 - Adjustments of the THEORY-MODEL-METHOD (TOOL2)
 - **Report_3b (individual):** Report (400-500 words) about Assignment_3
- **PART3: Scenarios, Strategies and Pilot Actions for Otaniemi 2020>2050**
 - **A CHANGING OTANIEMI:** Existing goals and Challenges, Existing Visions
 - **SOCIO-ECOLOGICAL VISIONS, SCENARIOS, STRATEGIES and PILOT ACTIONS FOR FUTURE OTANIEMI:** Towards a new and more sustainable socio-ecological system in Otaniemi (e.g. hyperperformative landscapes, multifunctional infrastructures, new Biotopes and Sociotopes and stronger connections between them, new metabolisms, etc.)
 - **Assignment_4 (teamwork):** SCENARIOS, STRATEGIES & PILOTS for a transitioning Otaniemi (2020 > 2050). (applying TOOLS1 and TOOL2):
 - Challenges and Goals (Densification, Social, economic and cultural shifts, Climate Change, etc.)
 - Scenarios, Visions and Strategies for a new Socio-Ecological system in Otaniemi
 - Strategies for upgrading the functions and evolution of nature in current and future Otaniemi
 - Pilot actions and/or thematic proposals for a transitioning Otaniemi (2020 > 2050) (applying TOOLS1 and TOOL2)
 - Adjustments of the THEORY-MODEL-METHOD (TOOL2)
 - **Report_4b (individual):** Report (400-500 words) about Assignment_4
- **FINAL ASSIGNMENT: Presentations and posters**
 - **FINAL Assignment (teamwork):** Presentation and Posters summarizing assignments 2+3+4
 - **FINAL Report (individual):** Summary and new findings from Reports 2+3+4 (10 pages)
- **ADDITIONAL ASSIGNMENT(S) (Individual or team work):** Each student taking more than 10 credits decides how many extra credits they want to do and the Learning outcomes (and contents, learning methods (field trips, readings, quantitative or modeling studies) and the assessment methods (assignments or works) related to them. The teachers approve check and approve their work plans.

LECTURES:

- PERIODS: III, IV V (10.1.2020-29.5.2020, Fridays 9:15-17:00, lunch break 12:15-13:15))
- PLACE: Aalto University (Otaniemi)
- REVIEWS: one per assignment and a final review
- LECTURES: Juanjo Galan, Johan Kotze and invited teachers

MATERIALS: Course material distributed during the course

TARGET GROUPS:

- Master & PhD Students_Landscape Architecture (Aalto University)
- Master & PhD Students_Environmental Change and Global Sustainability (University of Helsinki)
- Master students_Urban Studies and Planning (Aalto University and University of Helsinki)
- Master & PhD Students_Architecture (Aalto University)
- Students of the Creative Sustainability programme (Aalto University)
- Master & PhD Students_School of Engineering & School of Business (Aalto University, with interest and some basic education in Spatial or Urban Planning)
- Master & PhD Students_Geography & SocialSciences (with interest and some basic education in Spatial or Urban Planning)

ASSESSMENT:

The final works will be assessed by the responsible teacher with the possible help of external experts. In order to pass the course, **all the required assignments will need to be submitted and passed.**

- **DIAGNOSTIC ASSESSMENT:** Preliminary self-assessment of each student according to the learning outcomes and assessment criteria of the course (see tables of rubrics) + Identification of their main interests and expectations.
- **FORMATIVE ASSESSMENT:** mid-reviews and open discussions with peers and teacher
- **SUMMATIVE ASSESSMENT:** Mainly in the final review
- **FINAL ASSESSMENT:** by teacher with the possible collaboration of invited experts (70%) and Peer-Self Assessment (30%). The assessment will be based on the level of achievement of the intended learning outcomes, the level of understanding of the course contents and the capacity to generate consistent, innovative and well-presented proposals. In addition, the critical, effective and constructive participation in the discussions of the course and the advance in transversal learning outcomes will be positively valued.
- **FINAL GRADE:** The final grade will be highly informed by the assignments developed during the course. In addition, it will consider the capacity of the student to synthesize those assignments in the final review and the demonstrated capacity to assimilate and incorporate the feedback received during the mid-reviews and discussions.
- **SELF AND PEER ASSESSMENT SKILLS** The mid-reviews and the final review will support the development of self and peer assessment skills. The assessment of the level of achievement of the general and specific Learning Outcomes of the course and the advance in the acquisition of transversal Learning Outcomes will be based in a table of rubrics presented by the teacher at the beginning of the course and approved/adjusted after a collective discussion.
- In the course MAR-E1037, the assignments will have the following weight in the final grade:
 - **FOR STUDENTS TAKING THE FULL COURSE (10 credits)**
 - Assignment 1 (10%)
 - Assignment 2 (15%)
 - Assignment 3 (20%)
 - Assignment 4 (30%)
 - Final Assignment (20%)
 - Final assessment of Transversal skills (5%)
 - **FOR STUDENTS TAKING THE THEORETICAL COURSE (3 credits)**
 - Assignment 1 (10%)
 - Report_2b (15%)
 - Report_3b (20%)
 - Report_4b (30%)
 - Final Report (20%)
 - Final assessment of Transversal skills (5%)
 - **FOR STUDENTS TAKING MORE THAN 10 CREDITS:**
 - The additional credits will be assessed according with the assessment criteria agreed by the student and the teachers. The final grade will be a weighted average between the grade in the 10 credits course and the grade in the extra credits
- **NOTE1:** The assessment will be based in the proposed **LEARNING OUTCOMES** and in the **ASSESSMENT CRITERIA** (Tables of Rubrics as discussed and adjusted with the students). At a general level, the assessment will value positively the consistent use of the concepts introduced in each assignment and in the generation of complete, innovative and well-presented solutions for the proposed tasks. The assessment of the final assignment will also consider the quality of the final deliverables (graphic, narrative and conceptual). The final grade will also consider the evolution of the student during the whole course, her/his level of involvement and his/her capacity to generate relevant discussions and to provide constructive feedback to peers.
- **NOTE2:** Students will be guided by tutors and peers during the tutoring sessions and mid-reviews to improve their performance in each assignment. Due to the continuous character of the course, students will be able to improve their work in the following assignments and in the final one.

The delay of submitted course work (assignments, etc.) affects its assessment:

- If the work is delayed but submitted by the **FIRST** official submission date of the Department (1. jalkipalautuspäivä), the grade is lowered with one point (i.e. 3 becomes 2),

- If the work is delayed but submitted by the SECOND official submission date of the Department (2. jälkipalautuspäivä), the grade is lowered with two points. (i.e. 3 becomes 1)
- At the end of the course, the instructor may also accept unsubmitted work that is almost accomplished, but the unfinishedness of the work is taken into consideration in the grading and the earned credits.

REGISTRATION FOR COURSES:

- Weboodi (Aalto University)

LANGUAGE OF INSTRUCTION: English.

SCHEDULE

10.1.2020 (2 hours approx.)_classroom M203 (Otakaari1, R001)

- Introduction to the course + Review of Contents, Assessment Criteria & Table of Rubrics + Self-Diagnostic Assessment & Suggestions for the course
- **Workshop:** Pechakucha “What I am expecting from this course” (2-3 slides, 5 minutes per student) + Discussion with the students taking more than 10 credits

17.1.2020 (4 hours approx.)_classroom M203 (Otakaari1, R001)

- **Lecture 1:** Principles of Landscape Ecology (Juanjo Galan)
- **Lecture 2:** Principles of Urban Ecology (Johan Kotze)
- **Workshop:** Discussion

24.1.2020 (4 hours approx.)_classroom M203 (Otakaari1, R001)

- **Lecture 3:** Methods in Landscape Ecology (Juanjo Galan)
- **Lecture 4:** Methods in Urban Ecology (Johan Kotze)
- **Workshop:** Discussion

31.1.2020 (5 hours approx.)_classroom M203 (Otakaari1, R001)

- **Lecture 5:** New Paradigms and Concepts for Urban Nature (Juanjo Galan)
- **Review: ASSIGNMENT1 (individual)_GROUP 1 of students:** Reading seminar (choose one reading and present a summary) + Exploring the connections between the Principles & Methods of the student’s discipline with the Theory and Methods of Landscape & Urban Ecology (TOOL1)

7.2.2020 (5 hours approx.)_classroom M203 (Otakaari1, R001)

- **Lecture 6:** Cases & Methodological Examples on Urban Ecology (Johan Kotze)
- **Review: ASSIGNMENT1 (individual)_GROUP 2 of students:** Reading seminar (choose one reading and present a summary) + Exploring the connections between the Principles & Methods of the student’s discipline with the Theory and Methods of Landscape & Urban Ecology (TOOL1)

14.2.2020 (5 hours approx.) (NOTE: only for FULL course students)_classroom M203 (Otakaari1, R001)

- **Lecture 7:** Introduction to Otaniemi and Urban Biotopes (Juanjo Galan)
- **Workshop:** Creation of Multidisciplinary Groups + Workshop_Developing a Multi and Transdisciplinary Theory and Methods for this Course (team work)

21.2. 2020 (5 hours approx.) (NOTE: only for FULL course students)_classroom M205 (Otakaari1, R001)

- **Review: ASSIGNMENT2 (teams):** Multi and Transdisciplinary Principles, Models and Methods for sustainable urban studies and planning informed by landscape and urban ecology (TOOL2)

28.2. 2020 (4 hours approx.)_classroom M203 (Otakaari1, R001)

- **Free tutoring (specially for teams working in the FULL course)**

6.3.2020_classroom M203 (Otakaari1, R001)

- **Free tutoring (specially for teams working in the FULL course)**

13.3.2020_classroom M203 (Otakaari1, R001)

- **Review: ASSIGNMENT3 (teams): ANALYSIS+ DIAGNOSIS** of current Otaniemi (applying TOOL1 and TOOL2): General Analysis of Otaniemi + Analysis of its socio ecological system (a collage of Biotopes and Sociotopes, Current Blue-Green Infrastructure, Existing supply/demand of Ecosystem Services).

20.3. 2020 (7 hours approx.; Otakaari 1, U135a U7 PWC (Otaniemi))

- **Full day lecture:** Current ecological research by Heikki Setälä and Johan Kotze of the Urban Ecosystem Ecology Group in Lahti

27.3.2020 (7 hours)_FIELDTRIP to LAHTI

- **Fieldtrip to Lahti:** Visiting active Research Sites in Lahti,

3.4. 2020_classroom M203 (Otakaari1, R001)

- **Lecture 8:** Scenarios, Alternatives and Visions in Planning (Juanjo Galan)
- **Free tutoring (specially for teams working in the FULL course)**

17.4. 2020_classroom M203 (Otakaari1, R001)

- **Voluntary Workshop for FULL course students:** Adjustments of the THEORY-MODEL-METHOD (TOOL2)

24.4.2020 (2 hours) _classroom M203 (Otakaari1, R001)

- **Review: ASSIGNMENT4 (teams): SCENARIOS, STRATEGIES & PILOTS** for a transitioning Otaniemi (2020 > 2050). (applying TOOL1 and TOOL2):
 - Challenges and Goals (Densification, Social, economic and cultural shifts, Climate Change, etc.)
 - Scenarios, Visions and Strategies for a new Socio-Ecological system in Otaniemi
 - Strategies for upgrading the functions and evolution of nature in current and future Otaniemi
 - Pilot actions and/or thematic proposals for a transitioning Otaniemi (2020 > 2050). (applying TOOL1 and TOOL2)

8.5. 2020 (4 hours approx.) _classroom M203 (Otakaari1, R001)

- **Voluntary Workshop for FULL course students**

15.5. 2020_classroom M203 (Otakaari1, R001)

- **Free tutoring (specially for teams working in the FULL course)**

22.5. 2020_(4 hours approx.) _classroom M203 (Otakaari1, R001)

Review: FINAL ASSIGNMENT:

- A compilation of the Assignments 2+3+4 (1 powerpoint + 4-6 A1 posters)

	JANUARY 2020				FEBRUARY 2020				MARCH 2020				APRIL 2020				MAY 2020			
PART	10.1.20	17.1.20	24.1.20	31.1.20	7.2.20	14.2.20	21.2.20	28.2.20	6.3.20	13.3.20	20.3.20	27.3.20	3.4.20	10.4.20	17.4.20	24.4.20	1.5.20	8.5.20	15.5.20	22.5.20
1	INTRO			REVIEW ASSIG_1	REVIEW ASSIG_1		REVIEW ASSIG_2													
2										REVIEW ASSIG_3										
3											FULL DAY LECTURE	FIELD TRIP				REVIEW ASSIG_4				FINAL REVIEW