COURSE OUTLINE

1. GENERAL INFORMATION

FACULTY/SCHOOL	School of Plant Sciences		
DEPARTMENT	Department of Crop Science		
LEVEL OF STUDY	Postgraduate		
COURSE UNIT CODE	120102	**Semester:**	**W-1**
COURSE TITLE	Urban and Suburban Ecology		
INDEPENDENT TEACHING ACTIVITIES *in case credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the entire course, give the weekly teaching hours and the total credits*		**WEEKLY TEACHNG HOURS**	**ECTS**
	Lectures	2	3
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4			
COURSE TYPE *Background knowledge, Scientific expertise, General Knowledge, Skills Development*	Scientific expertise		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)			

2. LEARNING OUTCOMES

Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate (certain) level, which students will acquire upon successful completion of the course, are described in detail. It is necessary to consult:

APPENDIX A

- *Description of the level of learning outcomes for each level of study, in accordance with the European Higher Education Qualifications' Framework.*
- *Descriptive indicators for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and*

APPENDIX B

- *Guidelines for writing Learning Outcomes*

Upon completion of the course lectures, which have both theoretical and applied aspects, students will have developed specialized knowledge that will prove useful to them as landscape architects, as well as to continue at the doctoral level or to work as specialized scientists. Specifically:

- they will be familiar with and understand the functioning of urban ecosystems,
- they will be able to assess and address major urban environmental issues and discern how anthropogenic activities affect natural and semi-natural ecosystems,
- they will know and understand the methods of impact assessment and the practical applications of ecological knowledge for managing urban and peri-urban parks,

- they will have understood the basic principles of urban agriculture and the ways of managing natural resources in the urban environment.

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General Competences	
Taking into consideration the general competences that students/graduates must acquire (as those are described in the Diploma Supplement and are mentioned below), at which of the following does the course attendance aim?	
Search for, analysis and synthesis of data and	*Project planning and management*
information by the use of appropriate	*Respect for diversity and multiculturalism*
technologies,	*Environmental awareness*
Adapting to new situations	*Social, professional and ethical responsibility and*
Decision-making	*sensitivity to gender issues*
Individual/Independent work	*Critical thinking*
Group/Team work	*Development of free, creative and inductive thinking*
Working in an international environment	*……*
Working in an interdisciplinary environment	*(Other…….citizenship, spiritual freedom, social*
Introduction of innovative research	*awareness, altruism etc.)*
	…….

Search for, analysis and synthesis of data and information by the use of appropriate technologies
Adapting to new situations
Decision-making
Individual/Independent work
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for diversity and multiculturalism
Environmental awareness
Critical thinking
Development of free, creative and inductive thinking

3. COURSE CONTENT

Flora and vegetation of Mediterranean ecosystems. Vegetation zones in the Mediterranean and Greece, geographical distribution, and climatic characteristics of each zone. Major habitat types of each zone and representative plant species. Morphological and ecological characteristics of plant species. Plant diversity in urban and suburban areas of Greece. Flora of Attica (Athens, coastal areas, and mountains). Fauna of Greece. Fauna of various ecosystems. Mammals, Reptiles, Birds. Wildlife management. Cities – Historical Overview – Types of cities – Models of cities – Urbanization – Megacities and Favelas – Demographics. Contemporary cities – Green cities – Soft cities – Smart cities – Future cities. Ecology – Urban Ecology. Principles of sustainable natural resource management. Fragmentation of ecosystems – Ecological corridors – Greenways. Biodiversity and urban ecosystems. Examples of protection and enhancement of biodiversity in cities. Urban pollution with an emphasis on Atmospheric - gaseous and particulate pollution - impacts on humans and plants. Toxic metals in the urban environment – Studies of heavy metal bioaccumulation in playgrounds in Athens. Noise pollution – light pollution – Thermal pollution – Impacts on health and biodiversity – the use of suitable plant species to address them. Indoor pollution and phytoremediation of it. Management of polluted areas – phytoremediation: the use of plants in decontamination. Bioindicators, biometric indices of atmospheric pollution. Sustainable management of solid and liquid urban waste – Environmental National and European legislation. Circular economy – recovery-reuse – sustainable management in the urban fabric.

4. TEACHING METHODS--ASSESSMENT

MODES OF DELIVERY *Face-to-face, in-class lecturing, distance teaching and distance learning etc.*	The teaching of the coursetakes place in-person, in a well-equipped classroom/studio, complete with the necessary audiovisual equipment for conducting lectures and presentations. Additionally, teaching can also be conducted remotely through video conferencing.

<table>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in teaching, Laboratory Education, Communication with students</td><td>Slide Presentations in PowerPoint format are used for teaching purposes.
Video projection.
Communication with students is facilitated through email.
The learning process is supported through the digital platform Microsoft Teams.
Access to online databases is provided for research purposes.</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, Internship, Art Workshop, Interactive teaching, Educational visits, projects, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of self-directed study are given following the principles of the ECTS.</td><td><table>
<tr><th>Activity/ Method</th><th>Semester workload</th></tr>
<tr><td>Lectures</td><td>20 hours</td></tr>
<tr><td>Written assignment/presentation</td><td>55 hours</td></tr>
<tr><td>Total of Course (25 hours of workload per ECTS)</td><td>75 hours</td></tr>
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<tr><td>STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS
Detailed description of the evaluation procedures:

Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice tests, short- answer questions, open-ended questions, problem solving, written work, essay/report, oral exam, presentation, laboratory work, other……etc.

Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.</td><td>The evaluation language is Greek (and English if required). Evaluation is conducted through literature review, oral presentation (using PowerPoint or other digital means), and/or a project related to the design, installation, and management of plantings based on ecological principles. The grade is determined by assessing the literature review, the content and delivery of the oral presentation, and the correctness, clarity, and aesthetic presentation of the design, installation, and management of plantings based on ecological principles.</td></tr>
</table>

5. SUGGESTED BIBLIOGRAPHY:

- Suggested Bibliography:

Gaston, K. J., Davies, Z. G., Edmondson, J. L., Evans, K. L., et al. 2010. Urban Ecology. Editor: Kevin J. Gaston, Cambridge University Press, ISBN: 9780521743495

Kevin J. Gaston, Thomas Elmqvist, Thomas M. Kinzig, and Peter H. Warren (Eds). 2020. Urban Ecology: Emerging Patterns and Social-Ecological Systems. Oxford University Press. ISBN: 9780199663309

James Girard. 2013. Principles of Environmental Chemistry. ISBN-10: 1449693520, ISBN-13: 978-1449693527. Ελληνική Έκδοση: James Girard. 2018. Αρχές Περιβαλλοντικής Χημείας - Επιμέλεια Ελληνικής Έκδοσης: Μ. Πολυσίου, Π. Ταραντίλης, Χ. Παππάς. Επιστημονικές Εκδόσεις Παρισιάνου Α.Ε. ISBN 9789605830618

Frank R. Spellman. 2021. The Science of Environmental Pollution. CRC Press. ISBN:9781000400076, 1000400077

- Related Scientific Journals:

- Urban Ecosystems
- Urban Ecology