

COURSE OUTLINE
URBAN GREEN MANAGEMENT

(1) GENERAL

SCHOOL	TECHNOLOGY		
DEPARTMENT	FORESTRY, WOOD SCIENCES & DESIGN		
LEVEL	POSTGRADUATE		
COURSE CODE	MB126	SEMESTER	2 nd
COURSE TITLE	URBAN GREEN MANAGEMENT		
ACTIVITIES		WEEKLY HOURS	ECTS
Lectures		2	6
TOTAL		2	6
TYPE OF COURSE	ELECTIVE		
PREREQUISITES	NO		
LANGUAGE OF TEACHING AND EXAMINATION	GREEK		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	NO		
WEBPAGE COURSE (URL)	https://eclass.uth.gr/courses/GD-LARISSA237/		

(2) LEARNING OUTCOMES

Learning Outcomes
<p>The purpose of the course is to acquaint the students with the subject of the management of the various forms of urban greenery and with the special management issues of the mixed zone of urban and forest types of land cover. More specific purposes are getting to know the challenges and risks that climate change creates for urban green management, with the institutional framework for planning and managing urban green, getting to know methods for dealing with threats and getting to know special urban ecological functions of greenery, such as those of its combination with the water element and the creation of habitats for wild fauna.</p> <p>Upon successful completion of the course students will be able to:</p> <ul style="list-style-type: none"> • They know the principles of urban green planning and management • Contribute to the development of green infrastructure through appropriate planning and management of urban greenery • Identify the special needs of the management of the zone of mixed urban and forest cover and formulate proposals of measures to the parties involved • Identify the needs to adapt urban green management to climate change in order to maintain the provision of its services • Integrate wildlife conservation requirements into urban green planning and management • They recognize the possibilities and special management needs of urban greenery that can be installed near places with a permanent or periodic presence of water • Cooperate through an organized, transparent and effective mechanism with local communities and all stakeholders in the planning and implementation of urban green management • Apply modern inventory, monitoring and supervision methods in accordance with applicable obligations and the latest results of scientific research and innovation
General Skills

(3) COURSE CONTENT

In the theoretical part of the course the student is taught and learns about:

- Ecological conditions in the urban area. Urban microclimate. Soil conditions in the urban area. Mechanical damage to trees. Air pollution. Pathogenic organisms.
- • The functions of urban green. Effect on temperature and humidity. Effect on noise dispersion. Contribute to pollutant retention. Contribution to the prevention of flood phenomena. Contribution to physical and mental health. Aesthetics of urban space.
- • Urban greenery and green infrastructure. The concept of green infrastructure. The concept of connectivity and fragmentation. The liquid element. The contribution of green infrastructure to mitigating risks and threats to citizens and infrastructure.
- • Urban green in urban planning. Minimum and optimal coverage percentages of urban space with greenery. Green space specifications. Specifications for the management of urban parks and urban greenery.
- • Urban green and rural landscape. Urban greenery in landscapes of intensively cultivated fields. The concept of the island and corridors with natural vegetation. The special functions of urban greenery in rural areas. Policies and incentives to increase and maintain urban greenery in rural areas.
- • Urban greenery as a habitat for wild fauna. Fauna species favored by urban greenery. Measures to favor species from the use of urban greenery. Measures to prevent species from using urban greenery. Collaboration with the community.
- • The challenge of climate change. Changes in the urban environment due to climate change. Increasing citizens' needs from urban greenery. Special problems: water needs, biotic hazards. Measures to adapt urban green management.
- • The mixed zone of urban and forest cover. The concept of mixed urban and forest cover zone (MAD Zone). The special management needs of the MAD zone to prevent the spread of forest fires from the peri-urban area. Their contribution to mitigating extreme conditions in the centers of settlements and cities. Cooperation with citizens and stakeholders.
- • Accompanying infrastructures of urban greenery. Traffic infrastructure, control and urban equipment. Marking, information. Water management infrastructure. Energy, communication networks. Emergency equipment. Use of alternative materials. Security and specification issues.
- • Urban greenery and archaeological sites. Monument Vulnerability. Institutional framework for urban green management in archaeological sites. Special needs for visitor management. Monumental ensembles of urban greenery or individual plants. Specific management measures: general guidelines and case studies.
- • Decision making, participatory planning and communication. Strategic planning. Communication, participatory planning and collaboration with the local community. Decision making methods.
- • Modern methods of urban green inventory and monitoring. Modern methods of inventory and monitoring of forest resources. Monitoring the achievement of the general and specific purposes of the design. Monitoring of design implementation efficiency.
- • Presentations of final course assignments.

Every one or two weeks assignments are given to practice topics related to the subject of the course, while the final (6th assignment) should be undertaken and prepared by the student (individually) until the end of the semester of the MSc.

The relevant directions are given, while rich material and instructions are posted in the E-class <https://eclass.uth.gr/courses/GD-LARISSA237/>. The final assignment includes, in addition to paper and electronic submission, a public oral presentation on the chosen topic, on a set date (usually the 12th or 13th week of classes). The presentation lasts 15 minutes and is followed by 5 minutes of questions from the students present. The teacher intervenes - if necessary - for comments, observations, corrections.

Students are graded on the overall performance of their final paper: 70% on content and editorial specifications and 30% on the preparation of the online presentation and its oral support. These grades count for a total of 40% of the overall grade that students will receive after the final written theory exam.

(4) TEACHING AND LEARNING METHODS - EVALUATION

COURSE DELIVERY METHOD	In class and remotely	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	<ul style="list-style-type: none"> • Use of PCs, ppt slides, projector. • Support of the learning process through the e-class electronic platform 	
MANAGEMENT OF TEACHING	Activity	Semester Workload
	Lectures	26
	Six (6) individual assignments related to the subject of the course	44
	Small individual practice tasks	10
	Independent Study	70
	Course Total (25 workload hours per credit unit)	150
STUDENT EVALUATION	<p>I. Written final exam (60%) including:</p> <ul style="list-style-type: none"> • Short-answer (possibly multiple-choice and true-false) questions from across the material of the book and the lectures. • Solving exercises related to the subject of the course. <p>II. Successful delivery of six (6) assignments and presentation of the individual final (6th) assignment (40%).</p>	

(5) RECOMMENDED-BIBLIOGRAPHY

- Suggested Bibliography:

- Addison P.F.E., K. de Bieand, L. Rumpff. 2015. Setting conservation management thresholds using a novel participatory modeling approach. *Conservation Biology*, 29:1411-1422.
- Alcasena F.J., A.A. Ager, J.D. Bailey, N. Pineda and C. Vega-García. 2019. Towards a comprehensive wildfire management strategy for Mediterranean areas: Framework development and implementation in Catalonia, Spain. *Journal of Environmental Management*, 231:303-320.
- Auerbach, N.A., K.A. Wilson, A.I.T. Tulloch, J.R. Rhodes, J.O. Hanson and H.P. Possingham. 2015. Effects of threat management interactions on conservation priorities. *Conservation Biology*, 29:1626-1635.
- De Ridder, K., V. Adamec, A. Bañuelos, M. Bruse, M. Bürger, O. Damsgaard, J. Dufek, J. Hirsch, F. Lefebvre, J.M. Pérez-Lacorzana,
- A. Thierry and C. Weber. 2004. An integrated methodology to assess the benefits of urban green space. *Science of the Total Environment*, 334–335:489–497.
- European Environmental Agency. 2015. Exploring nature-based solutions — The role of green infrastructure in mitigating the impacts of weather- and climate change-related natural hazards. Copenhagen. 66 p.
- European Environmental Agency. 2016. Rivers and lakes in European cities: past and future challenges. Copenhagen. 56 p.

- European Environmental Agency. 2016. Soil resource efficiency in urbanised areas — Analytical framework and implications for governance. Copenhagen. 94 p.
- European Environmental Agency. 2016. Urban adaptation to climate change in Europe — Transforming cities in a changing climate. Copenhagen. 140 p.
- European Environmental Agency. 2020. Environmental noise in Europe. Copenhagen. 104 p.
- European Topic Centre on Urban Land and Soil Systems and Environment Agency Austria. 2018. Similarities and diversity of European cities: A typology tool to support urban sustainability. Vienna. 80 p.
- Gallent N., J. Andersson and Bianconi M. 2004. Planning on the edge: The context for planning at the rural–urban fringe. Routledge, Abingdon. 232 p.
- Guérois, M. and Pumain D. 2008. Built-up encroachment and the urban field: a comparison of forty European cities. *Environment and Planning, A*, 40:2186–2203.
- Jakes P.J., C. Esposito, S. Burns, A.S. Cheng, K.C. Nelson, V.E. Sturtevant, D.E. Williams. 2011. Best management practices for creating a community wildfire protection plan. Gen. Tech. Rep. NRS-89. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 27 p.
- Kagiali C. and T. Tsitsoni. 2019. Monumental Trees in the Historic Centre of Thessaloniki: highlighting them through a cultural route. 5th Annual Conference of the Balkan Universities Association, 2019, Thessaloniki. 6 p.
- Lovell, S. and J. Taylor. 2013. Supplying urban ecosystem services through multifunctional green infrastructure in the United States. *Landscape Ecology*, 28:1447-1463.
- Miller S.R., T. Wuerzer, J. Vos, E. Lindquist, M. Mowery, T. Holfeltz, B. Stephens and A. Grad. 2016. Planning for Wildfire in the Wildland-Urban Interface: A Resource Guide for Idaho Communities Discussion Draft v 1.0. University of Idaho, Idaho Department of Labs, Boise State University. Idaho. 167 p.
- Ong B.L. 2002. Green plot ratio: an ecological measure for architecture and urban planning. *Landscape and Urban Planning*, 965:1–15.
- Samara T., T. Tsitsoni and M. Syrpi. 2016. Biomonitoring of heavy metal pollution on the leaves of *Cupressus arizona* and *Albizia julibrissin* and their contamination sources in Thessaloniki city (Greece). *Journal of Environmental Protection and Ecology*, 17:1285-1293
- Tsitsoni T., N. Gounaris, A. Kontogianni and V. Xanthopoulou-Tsitsoni. 2015. A multidimensional assessment of urban greening aiming to the urban adaptation to the climate change. 5th International Conference on Environmental Management, Engineering, Planning & Economics, Mykonos-Greece. 8 p.
- Van Elegem B., T. Embo, B. Muys and N. Lust. 2002. A methodology to select the best locations for new urban forests using multicriteria analysis. *Forestry*, 75:13-23.
- Ασπρογέρακας Ε. 2018. Σχεδιάζοντας για την κλιματική αλλαγή: ένα πράσινο δίκτυο για την Αττική. 5ο Πανελλήνιο Συνέδριο Πολεοδομίας, Χωροταξίας και Περιφερειακής Ανάπτυξης, ΤΜΧΠΠΑ, Πανεπιστήμιο Θεσσαλίας, Βόλος. 12 σελ.
- Κρίγκας, Ν., Π. Λόλας, Κ. Αφεντούλη. 2017. Ζιζάνια ελληνικών πόλεων: συνανθρωπιστικά φυτά στο αστικό και περιαστικό περιβάλλον. Πανεπιστημιακές Εκδόσεις Θεσσαλίας, Βόλος, 192 σελ.
- Παπαγεωργίου Μ. και Γ. Γεμεντζή. 2015. Πολιτικές για το αστικό πράσινο στις μητροπολιτικές περιοχές Αθήνας και Θεσσαλονίκης: μια συγκριτική αξιολόγηση. 4ο Πανελλήνιο Συνέδριο Πολεοδομίας, Χωροταξίας και Περιφερειακής Ανάπτυξης, Βόλος. 13 σελ.

- Related Scientific Journals:

- Landscape and Urban Planning
- European Journal of Forest Research
- Landscape Ecology
- Restoration Ecology
- Unasylva
- Journal of Environmental Management