SZKOŁA GŁÓWNA GOSPODARSTWA WIEJSKIEGO

Green Roofs in the City's Ecosystem

Educational subject description sheet

Basic information

Field of study
Course Offer for exchange students - second cycle studies, including uniform master studies (MA programmes)

Speciality
-

Organizational unit
Course Offer for exchange students

Study level
second cycle studies, including uniform master studies (MA programmes)

Study form
full-time studies

Education profile
General academic

Didactic cycle
2024/25

Subject code
PWMPWM2S_D.B100000P.06337.24

Lecture languages
english

Mandatory
Elective subjects

Block
Basic subjects

Disciplines

Coordinator	Robert Popek
Teacher	Robert Popek, Mariola Wrochna

Period	**Examination**	**Number of ECTS points**
Winter semester	Pass with grade **Activities and hours** Lecture: 15 Field exercises: 5	1

Goals

Code	Goal
C1	Introducing students to the role of green roofs and living walls in stabilizing the urban ecosystem.
C2	Imparting knowledge on the historical overview, legal regulations, and methods of green roof installation.
C3	Highlighting to students the ecological, aesthetic, social, recreational, health, and educational functions of roof gardens.
C4	Raising students' awareness of the advantages, disadvantages, and environmental impact of different types of roof greening methods.
C5	Familiarizing students with various substrates, drainage materials, single and multi-layer systems, and irrigation techniques for crops in unconventional places.
C6	Developing skills in selecting appropriate vegetation for green roofs and understanding its impact on building functionality.
C7	Shaping students' ability to design and critique projects related to green roofs, vertical, and urban gardens.
C8	Equipping students with the ability to use horticultural plants in green roofs and vertical gardens.
C9	Encouraging the development of social, professional, and ethical responsibility for the quality of alternative green areas in urban spaces.
C10	Enhancing students' readiness to continuously improve their qualifications and seek new technological solutions.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	how the green roofs and vertical gardens are projected and their functions.		Project, Assessment of activity during classes
W2	the main plat species and substrates, drainage and irrigation materials which can be used on green roofs.		Project, Assessment of activity during classes
W3	the advantages and disadvantages of green roofs.		Project
Skills – Student can:			
U1	use horticultural plants in green roofs and vertical gardens.		Project, Assessment of activity during classes
U2	to prepare and comment a project of green roofs, vertical and urban gardens.		Project, Assessment of activity during classes
Social competences – Student is ready to:			
K1	the social, professional and ethical responsibility for the quality of alternative green areas in urban space;		Project
K2	raise its qualifications and look for new technological solutions.		Project, Assessment of activity during classes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Roof gardens - introduction, historical overview, law rules of green roofs installation.	W1, W3, K1, K2	Lecture
2.	Ecological, aesthetic, social and recreational, health and educational functions of roof gardens.	W1, W3, U1, U2, K2	Lecture
3.	Types of roof greening methods - advantages, disadvantages and environmental impact.	W1, W3, U1, U2, K1, K2	Lecture, Field exercises
4.	Substrates, drainage materials, single and multi-layer systems, structures and irrigation of crops in unusual places.	W2, U2, K2	Lecture, Field exercises
5.	Selection of vegetation and its impact on the functioning of buildings with various types of garden assumptions.	W1, W2, U1, K2	Lecture, Field exercises
6.	The role of urban gardening and vertical farms.	W1, W3, U2, K1, K2	Lecture

Course advanced

Activities	Methods of conducting classes
Lecture	Lecture, Discussion, Presentation
Field exercises	Observation, Field observations

Activities	Examination method	Percentage
Lecture	Project	90%
Field exercises	Assessment of activity during classes	10%

Activities	Credit conditions
Lecture	Roof garden presentation made in groups. The presentation should be graded above 51%.
Field exercises	Active participation in the field excercises.

Literature

Obligatory

1. Green Roof Ecosystems – Ecological Studies – 2015th Edition, by Richard K. Sutton
2. Green Roof Plants: A Resource and Planting Guide., 2006, by Edmund Snodgrass
3. Small Green Roofs: Low-Tech Options for Greener Living, 2011 . By Nigel Dunnett, Dusty Gedge, Edmund C. Snodgrass and John Little.

Optional

1. Green Roof Construction – Essential guide. By Landscape Architects Network and Zinco
2. Green Walls Green Roofs: Designing Sustainable Architecture, by Gina Tsarounas
3. Planting Green Roofs and Living Walls" by Nigel Dunnett and Noël Kingsbury
4. Essential Green Roof Construction: The Complete Step-by-Step Guide" by Leslie Doyle
5. Materials provided by lecturers.

Calculation of ECTS points

Activity form	Activity hours*
Lecture	15
Field exercises	5
Preparation of a multimedia presentation	8
Preparation for exercises	2
Student workload	**Hours** 30
Number of ECTS points	**ECTS** 1

* hour means 45 minutes