SZKOŁA GŁÓWNA GOSPODARSTWA WIEJSKIEGO

Evaluation and shaping of ecological structure in landscape

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.B100000K.04263.24

Lecture languages
english

Mandatory
Obligatory subjects

Block
Major subjects

Disciplines
Agriculture and horticulture

Coordinator	Beata Fornal-Pieniak
Teacher	Beata Fornal-Pieniak, Marta Stankiewicz-Kosyl, Barbara Żarska

Period	**Examination**	**Number of ECTS points**
Winter semester	Exam **Activities and hours** Lecture: 15 Laboratory exercises: 30	3

Goals

Code	Goal
C1	to provide students with the practical ability to: - prepare natural evaluation of landscape - assess and optimize the ecological infrastructure of farms and their surroundings in accordance with PROW and EU guidelines.

Entry requirements

Before starting the course the student should have general knowledge of botany, environment protection, ecology, soil science and entomology.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	types of ecological infrastructure and most valuable natural plant habitats.		Written exam, Project
W2	flora and fauna of countryside and understands mutual relationships occurring between the world of plants, animals and farmers.		Written exam, Project
W3	increase of knowledge about elements of ecological structure.		Written exam, Project
Skills – Student can:			
U1	do evaluation of ecological structure in landscape (big scale) and the current state of ecological infrastructure of farms (local scale) together with their immediate surroundings.		Project
U2	optimize the ecological infrastructure of farms and their immediate surroundings.		Project
Social competences – Student is ready to:			
K1	The student has increased sensitivity to the problems associated with biodiversity.		Project

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Classes - Topic 1. Analysis of ecological structure of seleted rural commune and formulated directions for keeping biodiversity and shaping the studies area. Classes - Topic 2. Practice classes will describe the most important types of ecological infrastructure (hedges, conservation headlands, wildflower strips and rotational fallows), the methods of their establishment and improvement. Students will learn how to evaluate their quality, what is their role in agroecosystem and differences in their utilization in various types of farms. During exercices students will learn in practice (individual projects) how to asses and improve ecological infrastructure of the farm together with enhancement of biological diversity. Leading idea of the projects is to maximize the potential of uncultivated land. Pollinators, especially wild species (solitary bees and bumblebees), their habitat and food (honey and pollen plants) preferences, biology of development will be characterized. This knowledge will help students to understand benefits of presence of these organisms in countryside.	W1, W2, W3, U1, U2, K1	Laboratory exercises

No.	Course content	Subject's learning outcomes	Activities
2.	Term of landscape evaluation, ecosystem, elements of landscape, types of plant communities, role of ecological structure in rural areas, climate changes, green infrastructure, evaluation as a proper method usefulness for management of ecological structure in rural areas.	W1, W2, W3, K1	Lecture

Course advanced

Activities	Methods of conducting classes
Lecture	Lecture
Laboratory exercises	Conversation lecture, Discussion, Teamwork, Individual work, Laboratory (experiment), learning by experiment

Activities	Examination method	Percentage
Lecture	Written exam	50%
Laboratory exercises	Project	50%

Activities	Credit conditions
Lecture	Exam - minimum 51% - possitive mark
Laboratory exercises	Student has to prepare two projects during the classes (topic 1 and topic 2).

Literature

Obligatory

1. Bałazy S., Gmiąt A. (red.) 2007. Protection of the agricultural environment in the light of the agri-environmental programs of the European Union. Małopolska Agricultural Advisory Centre, Department of Agricultural and Forest Environment Research of the Polish Academy of Sciences in Poznań, Institute of Environmental Sciences of the Jagiellonian University in CraCow.
2. Żarska B., Fornal-Pieniak B., Zaraś-Januszkiewicz E. 2014: Landscape protection and planning: selected issues. Publisher WULS.
3. Żarska B. 2006. Ecological - spatial models and principles of shaping the landscape of rural communes.Publisher WULS.

Optional

1. Franin, K., Barić, B., & Kuštera, G. (2016). The role of ecological infrastructure on beneficial arthropods in vineyards. Spanish Journal of Agricultural Research, 14(1), e0303-e0303.
2. Sikorski P. Wysocki Cz. 2014. Phytosociology in landscape protection and shaping. Publisher WULS

Calculation of ECTS points

Activity form	Activity hours*
Lecture	15
Laboratory exercises	30

Preparation for the exam	15
Preparing the project	30
Student workload	**Hours** 90
Number of ECTS points	**ECTS** 3

* hour means 45 minutes