



SZKOŁA GŁÓWNA  
GOSPODARSTWA  
WIEJSKIEGO

## General Entomology

### Educational subject description sheet

#### Basic information

<b>Field of study</b> Course Offer for exchange students - second cycle studies, including uniform master studies (MA programmes)		<b>Didactic cycle</b> 2024/25	
<b>Speciality</b> -		<b>Subject code</b> PWMPWM2S_D.B100000P.06335.24	
<b>Organizational unit</b> Course Offer for exchange students		<b>Lecture languages</b> english	
<b>Study level</b> second cycle studies, including uniform master studies (MA programmes)		<b>Mandatory</b> Elective subjects	
<b>Study form</b> full-time studies		<b>Block</b> Basic subjects	
<b>Education profile</b> General academic		<b>Disciplines</b>	
<b>Coordinator</b>	Katarzyna Michalska		
<b>Teacher</b>	Katarzyna Michalska		
<b>Period</b> Winter semester	<b>Examination</b> Pass with grade	<b>Number of ECTS points</b> 3	
	<b>Activities and hours</b> Lecture: 15 Laboratory exercises: 13 Field exercises: 2		

#### Goals

Code	Goal
C1	to provide students with general, biological knowledge about this important constituent of our environment, which is also the basis for modern plant protection and environmental management

## Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
<b>Knowledge - Student knows and understands:</b>			
W1	the standards of structure and development of insects to an advanced degree		Report, Test (written or computer based)
W2	basic systematics of insects		Report, Test (written or computer based)
W3	the role of insects in land ecosystems		Report, Test (written or computer based)
<b>Skills - Student can:</b>			
U1	dissect and recognize the internal organs of insects and developmental stages in different groups of insects		Report, Test (written or computer based)
U2	classify insects and identify their orders and selected families		Report
U3	write a report referring general entomology		Report, Test (written or computer based)
U4	use the professional sources of information in the printed and electronic form		Report, Test (written or computer based)
<b>Social competences - Student is ready to:</b>			
K1	to be responsible for the condition of the environment		Report, Test (written or computer based)
K2	introducing new solutions in plant protection		Report, Test (written or computer based)

## Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Insects as the pillars of land ecosystems (diversity, evolution, food chain, relationships with other organisms, impact on humans) (2) Systematics (3) External anatomy (integument, body parts, coloration, exaggerated traits) (4) Development (eggs, embryology, morphogenesis, metamorphosis) (5) Internal anatomy and physiology (systems: nervous, endocrine, digestive, excretory, circulatory, reproductive) (6) Ecology of an individual (biotic and abiotic factors, specialization, strategies in life) (7) insects in human culture	W1, W2, W3, U3, U4, K1, K2	Lecture

2.	External anatomy of insects belonging to different orders: examination of a head, thorax, abdomen and their appendages. comparison of different types of legs and wings; their functions; dissection of mouthparts: chewing, sponging, piercing-sucking and chewing-lapping types. Internal anatomy: dissection of an insect male and female: examination of reproductive organs, respiratory, circulatory, digestive, excretory and nervous system. Morphology of insect hemolymph, observations of incomplete and complete metamorphosis in insects, identifications of types of larvae and pupae. Classifications of ametabolous, hemimetabolous and holometabolous insects: identification of insect orders, families and genera.	W1, W2, U1, U2, U3, U4, K1, K2	Laboratory exercises, Field exercises
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## Course advanced

Activities	Methods of conducting classes
Lecture	Lecture, Case study, Discussion, Presentation
Laboratory exercises	Teaching technique in the form of play, exact, task, Teamwork, Individual work, Laboratory (experiment), learning by experiment
Field exercises	Teamwork, Observation, Field observations

Activities	Examination method	Percentage
Lecture	Test (written or computer based)	60%
Laboratory exercises	Report	30%
Field exercises	Report	10%

Activities	Credit conditions
Lecture	written exam - documented in a paper form with grading
Laboratory exercises	written report on the tasks performed during laboratory classes
Field exercises	written report on the tasks performed during field classes

## Literature

### Obligatory

1. Chapman R. F. The Insects: Structure and Function 4rd ed, Cambridge Univ. Press, pp 766 Carde Ring, Resh Vincent H (eds). Encyclopedia of Insects. Academic Press, pp. 1266 Gullan, P.J., Cranston P.S. The Insects: An Outline of Entomology, 5th ed, Wiley-Blackwell, pp.624

### Optional

1. Eisner T. For Love of Insects. Belknap Press, pp.464 Triplehorn, Ch.A., Jonston NF. Study of insects. Cengage Learning, Inc., pp. 888 McGavin GC. Essential Entomology.Oxford University Press.pp 336 Speight M., Hunter. Ecology of Insects: Concepts and Applications.. pp.640 D.M. JOHN WILEY AND SONS LTD, pp.640 Gillott C.Entomology. Springer Nature, 3rd edition.

## Calculation of ECTS points

<b>Activity form</b>	<b>Activity hours*</b>
Lecture	15
Laboratory exercises	13
Field exercises	2
Preparation of the report	20
Preparation for the exam	30
Conducting literature research	10
<b>Student workload</b>	<b>Hours</b> 90
<b>Number of ECTS points</b>	<b>ECTS</b> 3

\* hour means 45 minutes