

Course title:	The role of insects in science and human daily life
Course title in Polish:	Owady w nauce oraz życiu codziennym człowieka
Course for discipline:	Agriculture and horticulture

Semester:	4	Status of course:	faculty	Language:	english
Academic year:	2026/27	Catalog number:	40/2025/26		

Coordinator of course:	dr hab. Mariusz Lewandowski prof. SGGW
Lecturer od course:	dr Michał Reut, dr Ewa Puchalska, dr hab. Mariusz Lewandowski prof. SGGW
Executing unit:	Department of Plant Protection, Institute of Horticultural Sciences
Ordering unit:	Doctoral School SGGW

Assumptions, goals and description of the course:	<p>The aim of the course is to present insects as a key group of organisms in the context of scientific development and their importance in everyday human life. The course covers major concepts related to the origin of insects and the key stages of their evolution, with particular emphasis on morphological, physiological, and behavioral adaptations that contributed to their evolutionary success and species diversification.</p> <p>The course also addresses the role of insects in the development of science, highlighting their importance as model organisms in biological, ecological, medical, and technological research. Examples of practical applications of entomological research are discussed, including contributions to the development of new technologies, biomimetics, agriculture, and environmental protection.</p> <p>An important component of the course is the analysis of the impact of insects on human health, well-being, and quality of life, encompassing both their positive roles (e.g. pollination, biological pest control) and negative effects (e.g. disease vectors, agricultural pests). The course aims to present insects as an integral element of ecosystem functioning and to emphasize their multidimensional role in science and human society.</p> <p>The aim of the course is to present insects as a key group of organisms in the context of scientific development and their importance in everyday human life. The course covers major concepts related to the origin of insects and the key stages of their evolution, with particular emphasis on morphological, physiological, and behavioral adaptations that contributed to their evolutionary success and species diversification.</p> <p>The course also addresses the role of insects in the development of science, highlighting their importance as model organisms in biological, ecological, medical, and technological research. Examples of practical applications of entomological research are discussed, including contributions to the development of new technologies, biomimetics, agriculture, and environmental protection.</p> <p>An important component of the course is the analysis of the impact of insects on human health, well-being, and quality of life, encompassing both their positive roles (e.g. pollination, biological pest control) and negative effects (e.g. disease vectors, agricultural pests). The course aims to present insects as an integral element of ecosystem functioning and to emphasize their multidimensional role in science and human society.</p>
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Didactic form, number of hours:	15 hours
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Teaching methods:	Problem-based lectures supported by multimedia presentations, analysis of case studies, moderated discussions, and presentation of scientific research results and practical applications of entomological knowledge.
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Limit of people in the group:	30
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Learning outcomes

KNOWLEDGE - the graduate knows and understands:	SKILLS - the graduate is able to:	COMPETENCES - the graduate is ready to:
To the extent enabling to revise the existing paradigms in the field/discipline - the world achievements, gathering theoretical background as well as general and selected detailed issues	Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline	Critically evaluate the achievements in the field/discipline represented
Major general development trends in the field/discipline	Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline	Recognise knowledge in solving cognitive and practical problems characteristic for the area of research (field/discipline) and in an interdisciplinary aspect
To the extent enabling to revise the existing paradigms in the field/discipline - the world achievements, gathering theoretical background as well as general and selected detailed issues	Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline	Support the ethos of scientific circles and conduct independent research

The method of verification of learning outcomes:	One-choice test
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Form of documentation of achieved learning outcomes:	Test form with the number of points achieved
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Elements and weights of the final grade:	Test 100%
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Place of the course:	Didactic room P/45, building 37
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Basic and supplementary literature

<p>D. Grimaldi & M. S. Engel 2005. Evolution of the Insects. xv + 755 pp. Cambridge, New York, Melbourne; Chapman, R. F. (2013) The Insects: Structure and Function; Gullan, P. & Cranston, Peter. (2021). The Insects: An Outline of Entomology, Gullan and Cranston 5th edition, 2014; Resh, V. H. & Cardé, R. T. (2009) Encyclopedia of Insects (2nd ed.)</p>
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Comments:	
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Estimated number of hours of work of the doctoral student necessary to achieve the assumed learning outcomes:	
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Learning outcomes reference to the second degree characteristics of the National Qualification Framework (level 8) covering doctoral competences:		
Symbol:	Learning outcomes:	8 level NQF
SD1_KW01	To the extent enabling to revise the existing paradigms in the field/discipline - the world achievements, gathering theoretical background as well as general and selected detailed issues	P8S_WG
SD1_KW02	Major general development trends in the field/discipline	P8S_WG
SD1_KU05	Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline	P8S_UW
SD1_KK01	Critically evaluate the achievements in the field/discipline represented	P8S_KK
SD1_KK03	Recognise knowledge in solving cognitive and practical problems characteristic for the area of research (field/discipline) and in an interdisciplinary aspect	P8S_KK
SD1_KK08	Support the ethos of scientific circles and conduct independent research	P8S_KR