

**Subject card**

<b>Subject name and code</b>	Zoology of invertebrates, PG_00196869						
<b>Field of study</b>	Biology						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2026/2027		
<b>Education level</b>	Bachelor's studies	<b>Subject group</b>			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	1	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	1	<b>ECTS credits</b>			2.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			credit		
<b>Conducting unit</b>	Katedra Zoologii Bezkręgowców i Parazytologii -> Faculty of Biology -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr Marta Zakrzewska				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	0.0	0.0	30.0	0.0	0.0	30
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	30		2.0		18.0	50
<b>Subject objectives</b>	1. The knowledge of the major types of invertebrate animals and protists (Protozoa). 2. An understanding of the principal mechanisms and trends in the evolution of the animals discussed. 3. The capacity to distinguish the main categories of animals studied.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLL3_U07] The graduate is able to independently search for and use available sources of biological information, including electronic sources	The student independently searches for and uses available sources of biological information, including electronic sources.	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work [SU5] implementation of a problem task
	[BIOLL3_U02] The graduate is able to make observations individually and in teams, and carry out basic physical, biological and chemical measurements in the field or laboratory	The student makes biological observations on the structure and function of invertebrate organisms.	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work [SU6] demonstration of practical skills [SU8] observation of student's independent or team work
	[BIOLL3_U01] The graduate is able to use basic apparatus and research tools and follow the correct sequence of operations in laboratory and field work	The student uses basic apparatus and research tools used in invertebrate systematics and follows the correct sequence of operations in laboratory work.	[SU5] implementation of a problem task [SU8] observation of student's independent or team work
	[BIOLL3_W06] The graduate will know at an advanced level the characteristics, systematics and understand the evolution of selected groups of organisms including molecular basis and basic concepts and mechanisms of evolution	The student presents the characteristics, systematics and evolution of selected groups of invertebrates.	[SW4] test/exam - oral or written
	[BIOLL3_W03] The graduate knows and understands at an advanced level the structure and functional relationships at the cellular, tissue, organ and organismal levels	The student presents the structural characteristics of the various types of invertebrates, with particular attention to functional relationships at the cellular (Protista), tissue, organ, and organismal levels.	[SW4] test/exam - oral or written
	[BIOLL3_K06] The graduate is prepared to take responsibility for the entrusted equipment/materials and for his/her own work and the work of others	The student is responsible for the equipment/materials entrusted and their own work and respects the work of others.	[SK1] oral statement/conversation/discussion [SK8] observation of student's independent or team work
	[BIOLL3_K07] The graduate is prepared to apply the principles of bioethics consciously	The student consciously applies the principles of bioethics.	[SK1] oral statement/conversation/discussion [SK8] observation of student's independent or team work
	[BIOLL3_U06] The graduate can read with comprehension scientific biological texts in Polish and simple texts in English	The student independently searches for and uses available sources of biological information, including electronic sources.	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work [SU5] implementation of a problem task
[BIOLL3_U08] The graduate is able to learn independently, in a focused manner	The student learns independently by preparing the indicated issues.	[SU1] oral statement/conversation/discussion [SU4] test/exam - oral or written [SU5] implementation of a problem task	
Subject contents	A review of selected systematic groups of invertebrates (characteristics and systematic position) with particular reference to domestic species. A consideration of the human use of invertebrates and their economic importance and role in nature.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	entry tests	51.0%	25.0%
	colloquium I	51.0%	25.0%
	practical assessment	51.0%	25.0%
	attendance	93.0%	0.0%
	colloquium II	51.0%	25.0%

Recommended reading	Basic literature	<p>Literature used in class:  Błaszak C. (red.) 2009, 2011, 2015. Zoologia, t. 1-3. PWN, Warszawa.  Czapik A. 1992. Podstawy protozoologii. Wyd. 2. PWN, Warszawa.  Grabda E. (red.) 1989. Zoologia bezkręgowce, t. 1. PWN, Warszawa.</p> <p>Literature studied independently by the student:  Błaszak C. (red.) 2009, 2011, 2015. Zoologia, t. 1-3. PWN, Warszawa.  Czapik A. 1992. Podstawy protozoologii. Wyd. 2. PWN, Warszawa.  Grabda E. (red.) 1989. Zoologia bezkręgowce, t. 1. PWN, Warszawa.  Moraczewski J., Riedel W., Sołtyńska M., Umiński T. 1984. Ćwiczenia z zoologii bezkręgowców. PWN Warszawa.</p>
	Supplementary literature	<p>Brusca R.C., Moore W., Shuster S.M. 2016. Invertebrates. 3rd Edition. Sinauer Associates Inc. Publishers, Sunderland, MA.  Dogiel W.A. 1986. Zoologia bezkręgowców. PWRiL Warszawa.  Dzik J. 2015. Zoologia. Różnorodność i pokrewieństwa zwierząt. WUW, Warszawa.  Gębicki C., Szewo J. 2000. Owady Polski. Klucz i atlas. Kubajak, Krzeszowice.  Giłka W., Zakrzewska M. 2013. A contribution to the systematics of Neotropical Tanytarsus van der Wulp: first descriptions from Ecuador (Diptera: Chironomidae: Tanytarsini). Zootaxa 3619: 453:459.  Giribet G., Edgecombe G.D. 2020. The Invertebrate Tree of Life. Princeton University Press, Princeton, NJ.  Grabda E. (red.) 1989. Zoologia bezkręgowce, t. 2-5, PWN, Warszawa.  Jura C. 2007. Bezkręgowce. Podstawy morfologii funkcjonalnej, systematyki i filogenezy. PWN, Warszawa.  Moore J. 2009. Wprowadzenie do zoologii bezkręgowców. WUW, Warszawa.  Urbanek A. 2007. Jedno istnieje tylko zwierzę Myśli przewodnie biologii porównawczej. Muzeum i Instytut Zoologii PAN, Warszawa.</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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