University of Gdańsk

Subject card

Subject name and code	Population ecology, PG_00154481						
Field of study	Biology						
Date of commencement of studies	October 2024		Academic year of realisation of subject	2026/2027			
Education level	undergraduate studies		Subject group	Optional subject group			
Mode of study	full-time studies		Mode of delivery	at the university			
Year of study	3		Language of instruction	Polish			
Semester of study	6		ECTS credits	2.0			
Learning profile	academic		Assessment form				
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Agnieszka Ożarowska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	15		2.0		33.0	50
Subject objectives	• To introduce students to the scope of ecological studies of plant and animal populations according to the current knowledge • To present and discuss the current knowledge on demography and mechanisms regulating the abundance and distribution of individuals within the population • To deepen the knowledge of the intraspecific/population ecological interactions in plants and animals • To understand the effects of interspecific competition on demographic growth • To understand patterns and drivers of intra/interspecific cooperation • To recognize similarities and differences in plant and animal population characteristics • To present and discuss issues concerning protection, management and sustainable exploitation of wild plant and animal populations						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOLL3_W05] The graduate knows the rules and describe the mechanisms of life at the population, biocenosis and ecosystem levels and the temporal and spatial determinants of biodiversity	Explains the factors and mechanisms influencing the size/ density of plant and animal populations	[SW4] test/exam - oral or written
[BIOLL3_W09] The graduate knows the most important laws and rules of physics and chemistry underlying biological processes and the properties of chemical elements and compounds	Recognizes the dynamic development of population ecology and indicates its relationships with other biological disciplines	[SW4] test/exam - oral or written
[BIOLL3_W14] The graduate knows the theoretical basis of experimental methods and the most important techniques of the biological sciences	Understands the relationship between fundamental population processes and the principles of sustainable use of wild plant and animal populations	[SW4] test/exam - oral or written
[BIOLL3_K08] The graduate is ready to be honest, reliable and apply the principles of savoir-vivre in academic and professional work	Systematically updates the knowledge of population ecology and knows its practical applications	[SK4] test/exam - oral or written
[BIOLL3_K01] The graduate is prepared to evaluate their own knowledge, understand the need for continuous learning and development, and is open to new ideas	Recognizes the limitations of own knowledge of population ecology and understands the need for continuous learning and development	[SK4] test/exam - oral or written
[BIOLL3_U13] The graduate is able to present their own ideas and use adequate argumentation in the context of selected theoretical and practical perspectives	Speaks English at Level B2, using specialist vocabulary in population ecology in scientific discussion	[SU4] test/exam - oral or written
[BIOLL3_U10] The graduate will be able to prepare oral presentations in Polish and a foreign language on specific topics in the field of biology	Speaks English at Level B2, using specialist vocabulary in population ecology in scientific discussion	[SU4] test/exam - oral or written
[BIOLL3_U07] The graduate should be able to independently search for and use available sources of biological information, including electronic sources	Draws correct conclusions based on the analysis and synthesis of data from various sources on population ecology and demographic factors	[SU4] test/exam - oral or written
[BIOLL3_U03] The graduate, under the guidance of a mentor, is able to carry out simple tasks or research expertise typical of the biological sciences	Selects, applies and critically confronts biological information from various sources, including internet, concerning population ecology and draws reasonable conclusions on this basis	[SU4] test/exam - oral or written

Subject contents

An overview of the definitions of a population, metapopulation, source/sink populations. Demography: population size/density, birth rate, death rate, immigration, emigration. Trends in the population size and limiting factors. Patterns and mechanisms of intra/interspecific competition and cooperation. Distribution of a population. Applied ecology: protection, management and sustainable exploitation of wild plant and animal vertebrate populations. Similarities and differences in plant and animal populations. Case studies.

Prerequisites and co-requisites

English at level B2

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written exam	51.0%	80.0%
Attendance at the lecture	85.0%	20.0%

Recommended reading

Basic literature	Krebs CJ. 2011. Ekologia. Eksperymentalna analiza rozmieszczenia i liczebności. PWN, Warszawa.Begon M., Towsend CR., Harper JL. 2006. Ecology: from individuals to Ecosystems. 4. Ed. Blackwell.Cain ML., Bowman WD., Hacker SD.2008. Ecology. Sinauer. Sunderland,Falińska K. 1990. Osobnik, populacja, fitocenoza. PWN, Warszawa.Begon M., Mortimer M., Thompson DJ. 1999. Ekologia populacji. Studium porównawcze roślin i zwierząt. PWN. Warszawa.Rockwood L.L. 2006. Introduction to population ecology. Blackwell Publishing. Malden.Newton I. 3-013. Pied populations. Harper Collins. London.

	Supplementary literature	Natoli A, Moura AE, Sillero N (2022) Citizen science data of cetaceans in the Arabian/Persian Gulf: Occurrence and habitatpreferences of the three most reported species. Mar Mammal Sci 38:235255. doi: 10.1111/MMS.12865Van Gils J. A., Lisovski S., Lok T., Meissner W., Ożarowska A., de Fouw J., Rakhimberdiev E., Soloviev M. Y., Piersma T.,Klaassen M. 2016. Body shrinkage due to Arctic warming reduces red knot fitness in tropical wintering range.Science 352 (6287): 819-821; doi: 10.1126/science.aad6351.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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