University of Gdańsk

Subject card

Subject name and code	Animal Migrations-Field Course, PG_00183141		
Field of study	Biology		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2025/2026
Education level	Bachelor's 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	English English
Semester of study	6	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit	Bird Migration Research Station -> Faculty of Biology -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. Magdalena Remisiewicz	
	Teachers	prof. dr hab. Magdalena Remisiewicz mgr Ignacy Gołębiewski mgr Zuzanna Marynkiewicz	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	15.0	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	10.0	25.0	50

Subject objectives

Understanding reasons, mechanisms and adaptations of animals to migrations, as an important element of animals life cycle in seasonal climates.

Learning outcomes

Course outcome	Subject outcome	Method of verification
	B2_W01: A student consistently applies and disseminates the principle of a strict, based on empirical data, interpretation of biological phenomena and processes in research and practical activities B2_W04: A student has in-depth knowledge of the animal movements. B2_U06: A student selects and applies knowledge on animal movements to interpret and conclude on empirical data related to animal movements. B2_K05: A student understands the need to use recognized sources of scientific and popular science information on animal behaviour in order to deepen knowledge.	[SK1] oral statement/conversation/ discussion [SK4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>1. General patterns and rules in animal migrations.
2. Migrations between breeding and non-breeding sites in different animals (e.g. insects, amphibians, reptiles, birds .
3. Seasonal regular migrations vs irruptive and irregular movements.
4. Demonstrating mechanisms and patterns of birds and animal orientation and navigation during migration.
5. Patterns of daily/nocturnal activities of migratory animals.
6. Novel techniques in studies of animal movements (e.g. loggers, geolocators, audio recordings etc.).</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>English at level B2</td></tr>
<tr><td>Assessment methods and criteria</td><td><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>test</td><td>60.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>1. Hansson L.-A., Åkesson S., (eds). Animal Movement Across Scales . Oxford: Oxford University Press, 2014. Oxford Scholarship Online, 2014. doi: 10.1093/acprof:oso/9780199677184.001.0001.
2. Dingle H. 1996. Migration: The Biology of Life on the Move. Oxford University Press.</td></tr><tr><td>Supplementary literature</td><td>1. Gołębiewski, I., & Remisiewicz, M. (2023). Carry-Over Effects of Climate Variability at Breeding and Non-Breeding Grounds on Spring Migration in the European Wren Troglodytes troglodytes at the Baltic Coast. Animals, 13(12), 2015.
2. Remisiewicz M, Underhill LG. 2022. Climate in Africa sequentially shapes spring passage of Willow Warbler Phylloscopus trochilus across the Baltic coast. PeerJ 10:e12964 DOI 10.7717/peerj.12964
3. Jetz W, Tertitski G, Kays R, Mueller U, Wikelski M. and Supporting authors (including Remisiewicz M.). 2022. Biological Earth observation with animal sensors. Trends in Ecology & Evolution 37 (4): 293298.
4. Milner-Gulland, E.J., J.M. Fryxell, Sinclair A.R.E.2011. Animal Migration: A Synthesis. Oxford University Press.
5. Lucas, M.C. and Baras, E. 2001. Migration of freshwater fishes. Blackwell Science.
6. Drake, V.A. and Gatehouse, A. G. 1995. Insect migration: tracking resources through space and time. Cambridge University Press.
7. Newton I. 2010. Bird Migration. Harper Collins.
8. Elphick, J. 1995. The atlas of bird migration: tracing the great journeys of the world's birds. Random House.
9. Berthold, P. 2003. Avian migration. Springer.</td></tr><tr><td>eResources addresses</td><td></td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. Observation of spring migrations of amphibians.
2. Visit at bird ringing station and observation of migrating birds, and methods of studying them.
3. Demonstrating mechanisms and patterns of birds and animal orientation and navigation during migration.
4. Demonstration of novel techniques in studies of animal movements (e.g. loggers, geolocators, audio recordings etc.).</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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