


KAPITAŁ LUDZKI
 NARODOWA STRATEGIA SPÓJNOŚCI

 Projekt współfinansowany przez
 Unię Europejską w ramach
 Europejskiego Funduszu
 Społecznego

UNIA EUROPEJSKA
 EUROPEJSKI
 FUNDUSZ SPOŁECZNY


Nazwa przedmiotu		Kod ECTS	
Animal population genetics		13.1.1876	
Nazwa jednostki prowadzącej przedmiot			
Stacja Biologiczna (im. Profesora Fryderyka Pautscha)			
Studia			
wydział	kierunek	poziom	pierwszego stopnia
Wydział Biologii	Genetyka i biologia eksperymentalna	forma	stacjonarne
		moduł	wszystkie
		specjalnościowy	wszystkie
specjalizacja	wszystkie		
Nazwisko osoby prowadzącej (osób prowadzących)			
prof. UG, dr hab. Andre Viola de Moura			
Formy zajęć, sposób ich realizacji i przypisana im liczba godzin		Liczba punktów ECTS	
Formy zajęć		2	
Ćw. audytoryjne		ESTIMATE OF WORKING TIME	
Sposób realizacji zajęć		Work in contact with the teacher:	
zajęcia w sali dydaktycznej		Participation in classes: 15 hours	
Liczba godzin		Consultation: 2 hours	
Ćw. audytoryjne: 15 godz.		Credit: 1 hours	
		Independent work of this student:	
		Preparation for passing - 7 hours	
Termin realizacji przedmiotu			
2023/2024 letni			
Status przedmiotu	Język wykładowy		
fakultatywny (do wyboru)	angielski		
Metody dydaktyczne	Forma i sposób zaliczenia oraz podstawowe kryteria oceny lub wymagania egzaminacyjne		
	Sposób zaliczenia		
	Zaliczenie na ocenę		
	Formy zaliczenia		
- Dyskusja	wykonanie pracy zaliczeniowej - projekt lub prezentacja		
- Rozwiązywanie zadań	Podstawowe kryteria oceny		
- Wykład z prezentacją multimedialną	Presentation based on task set during classes. To pass, students should obtain more than 50% score in the presentation. If a student fails the examination on first try, another similar presentation should be prepared in a date agreed with the lecturer. Students should attend at least 80% of lectures. Justified absences will be taken into consideration as per UG regulations.		
Sposób weryfikacji założonych efektów uczenia się			
zakładany efekt kształcenia	discussion	multimedia-based lecture	problem solving
	Wiedza		
GM1_W05	assignment work – project or presentation		
GM1_W06			
	Umiejętności		
GM1_U06	assignment work – project or presentation		
	Kompetencje		
GM1_K07	assignment work – project or presentation		
Określenie przedmiotów wprowadzających wraz z wymogami wstępnymi			

A. Wymagania formalne B. Wymagania wstępne	
Cele kształcenia <ul style="list-style-type: none"> - Overview of theoretical population genetics and its applications to animal science. - Overview of factors causing changes in genetic composition of populations over time and space, and how these changes constitute a link between molecular and ecological processes. - Case studies will illustrate how the theory and molecular techniques are applied to address questions in evolutionary biology, ecology and animal behaviour. - Practical applications of population genetics will be discussed, with the particular emphasis identifying operational taxonomic units, distinct populations of wild animals, and breeding of domesticated animals. - Students will be introduced to commonly used bioinformatic methods of evolutionary genetics. 	
Treści programowe <p>A. Lectures</p> <ol style="list-style-type: none"> 1. Theoretical basis of population genetics 2. Types of molecular markers and their application in population genetics 3. Methods of assessing genetic diversity in individuals, populations and species 4. Identify population structure and estimate number of populations in wild populations 5. Phylogeographic approaches to infer evolutionary history of populations and species; identification of cross-lineage gene flow 6. Genetic mechanisms associated with small populations; inbreeding and its consequences; mechanisms maintaining genetic diversity in wild populations 7. Introduction to genomic methods 8. Case studies based on a wide range of taxonomic groups 	
Wykaz literatury <p>Books</p> <p>Allendorf, F.W., and Luikart, G. (2011) Conservation and the Genetics of Populations. Blackwell Publishing. ISBN 1405121459</p> <p>Beebe, T., and Rowe, G. (2010) An Introduction to Molecular Ecology. 2nd Edition. OUP. ISBN 0199292051</p> <p>Freeland, J.R., Kirk, H. and Petersen, S.D. (2011) Molecular Ecology. 2nd Edition. Wiley-Blackwell. ISBN 0470748338</p> <p>Hamilton, M.B. (2009) Population Genetics. Wiley-Blackwell. ISBN 1405132779</p> <p>Hartl, D. (2000) A Primer of Population Genetics. 3rd Edition. Sinauer Associates. ISBN 0878933042</p> <p>Hartl, D. and Clark, A.G. (2007) Principles of Population Genetics. 4th Edition. Sinauer Associates. ISBN 0878933085</p> <p>Supplementary literature</p> <p>Journal articles</p> <p>Moura AE, Shreves K, Pilot M, Andrews KR, Moore DM, Kishida T, Möller L, Natoli A, Gaspari S, McGowen M, Chen I, Gray H, Gore M, Culloch RM, Kiani MS, Sarrouf Willson M, Bulushi A, Collins T, Baldwin R, Willson A, Minton G, Ponnampalam L, Rus Hoelzel A (2020) Phylogenomics of the genus Tursiops and closely related Delphininae reveals extensive reticulation among lineages and provides inference about eco-evolutionary drivers. Mol Phylogenet Evol 146:106756. doi: 10.1016/j.ympev.2020.106756</p> <p>Gaspari S, Marsili L, Natali C, Airoidi S, Lanfredi C, Deeming C, Moura AE (2019) Spatio-temporal patterns of genetic diversity in the Mediterranean striped dolphin (<i>Stenella coeruleoalba</i>). J Zool Syst Evol Res 57:721–734.</p>	
Kierunkowe efekty uczenia się <ul style="list-style-type: none"> - Understands theoretical population genetics and its applications to animal science. - Understands factors causing changes in genetic composition of populations over time and space, and how these changes constitute a link between molecular and ecological processes. - Understands methods for quantifying genetic variation in animal populations - Understands applications of population genetics principles in animal science 	Wiedza <p>GM1_W06: is familiar with the development and current state of knowledge, as well as the latest trends in molecular genetics and related fields; indicates their relationship with other disciplines of natural or medical sciences and the possibility of their practical use</p> <p>GM1_W05: knows the principles of research planning based on the achievements of biological sciences and related fields, the possibilities of using those results in practice, the principles of equipment and apparatus operation that are used in molecular genetics research, and the principle of interpreting biological phenomena and processes based on empirical data in research and practical activities, including the sustainable use of biodiversity</p>
	Umiejętności <p>GM1_U06: has the ability to make oral presentations in Polish and English on</p>

specific issues in the field of biology and to present their ideas and results in a written and oral form

Kompetencje społeczne (postawy)

GM1_K07: understands the need for lifelong learning and updating knowledge of molecular genetics and other fields

Kontakt

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