Principali informazioni sull'insegnamento a scelta	
Denominazione insegnamento	Environmental Physiology
Crediti formativi (CFU)	6
Obbligo di frequenza	yes
Lingua di erogazione	Italian
Anno Accademico	2021/2022

Docente responsabile	
Nome e Cognome	Stephan Joel Reshkin
email	stephanjoel.reshkini@uniba.it
phone	080-5443385
Visit hours	Visiting hours: everyday 10-12; 16-18 email or phone reservation

Dettaglio insegnamento	esame con voto	SSD	tipologia attività
	Exame with vote	BIO/09	Characterzation

Erogazione insegnamento	Semester	Days and hours	where
	I	Monday-Friday 09.00-11-30	Teams

Modalità erogazione	CFU lession	hours lession	CFU lab	Ore lab	CFU eserc	Ore eserc	CFU eserc field	Ore eserc field
	6	48	0	0	0	0	0	0

Organizzazione della didattica	Total hours	Teaching hours	individual study hours
	150	48	102

Calendario	Start of teaching	Fine attività didattiche
	Oct 5 2021	

Syllabus	
Prerequisiti	
Risultati di apprendimento attesi *(declinare rispetto ai Descrittori di Dublino) (si raccomanda che siano coerenti con i risultati di apprendimento del CdS, riportati nei quadri A4a, A4b e A4c della SUA, compreso i risultati di apprendimento trasversali)*	
Conoscenza e capacità di comprensione	Understanding the mechanisms of interaction of animals with their environment and how physiology is used to help optimize the evolution of species, populations and ecosystems
Capacità di applicare conoscenza e comprensione	Integration of the knowledge of ecology and zoology with the principals of physiology
Autonomia di giudizio	Obtain autonomia in the evaluation and interpretation of experimental data and of the application of pHysiological strategies in the study of ecology
Abilità comunicative	Obtain the terminology relative to environmental physiology in order to be able to understand the specific scientific research literature
Capacità di apprendimento	Obtain the capacity to read and critically understand the evolution of this discipline through the consultation of texts and research in international journals

Programma	
Contents	**I) Principi di Base** II) The nature and grades of adaptation a) Introdution b) Significance of environment c) Significance of adaptation

d) comparative methods to discern levels of adaptation

III) meccanisms of adaptation
   a) Introdution: adaptation at moleculare and genetic levels
   b) Control of thefunction of proteins of adaptation
   c) Protein Evolution
   d) Physiological Regulation genetic expression

IV) The problem of size
   a) Introdution
   b) The similarity principal: isometric/allometric scaling
   c) Scaling of metabolism
   d) Scaling of moviment
   e) Conclusions: is a there a "correct" size?

V) Adaptation in different environments

VI) Introdution: Response to the environment

VII) The acquatic environment

VIII) General Principals

IX) The marine environment: **Anobio**
   a) Introdution
   b) ionic and osmotic adaptations and water balance
   c) termal adaptations (thermalregulation)
   d) respiratory adaptations
   e) riproductive adaptations
   f) problems connected to depth, floating and movement
   g) feeding/nutrition
   h) the senses and comunication
   i) the secondary invasion of the sea

X) Intertidal and mixed zones
   a) Introduzione to the environment
   b) ionic and osmotic adaptations and water balance
   c) termal adaptations (thermalregulation)
   d) respiratory adaptations
   e) riproductive adaptations
   f) feeding/nutrition
   g) the senses and comunication

XI) Life in fresh water: **Limnobio**
   a) Introduzione to the environment
   b) ionic and osmotic adaptations and water balance
   c) termal adaptations (thermalregulation)
   d) respiratory adaptations
   e) the senses and comunication
   f) feeding/nutrition
   g) riproductive adaptations

XII) special acquatic environments
   a) transitional environments
   b) particolar environments
   c) Acquatic environments at extreme temperatures

XIII) L'ambiente terrestre: **Geobio**

XIV) General principals
   a) ionic and osmotic adaptations and water balance
   b) termal adaptations (thermalregulation)
   c) respiratory adaptations
   d) riproductive adaptations
   e) meccanical and locomotory adaptations
   f) the senses and comunication

	g) feeding/nutrition XV) Extreme terresteral environments a) thermoregulation: the response to hot and cold environments b) life at high quota c) life in the air
Testi di riferimento	'Fisiologia Ambientale degli Animali'; Willmer, Stone & Johnston (ZANICHELLI). Alcuni argomenti sono approfonditi in 'Fisiologia Animali'; Poli, Fabbri, Agnisola, Calamita, Santovito & Verri (ZANICHELLI) o (EdiSES).
Note ai testi di riferimento	
Metodi didattici	Frontal multimedial Lessons online
Metodi di valutazione *(indicare almeno la tipologia scritto, orale, altro)*	Colloquio oral e presentations of choosen scientific publications of arguments that are inherient to the arguments covered in the course.
Criteri di valutazione *(per ogni risultato di apprendimento atteso su indicato, descrivere cosa ci si aspetta lo studente conosca o sia in grado di fare e a quale livello al fine di dimostrare che un risultato di apprendimento è stato raggiunto e a quale livello)*	The capacity of the following is evaluated: Understanding the mechanisms of the the interaction of animals with their environment and the integration of understanding of ecology and zoology with the principals of physiology. Rather than asking for the details of other disciplines, the ability to obtain that which is necessary from these other disciplines to understand the role of physiology in ecology.
Altro	