1. GENERAL			
SCHOOL	School of Agricultural Sciences		
DEPARTMENT	Department of Agriculture, Ichthyology, and Aquatic Environment (tGIYP)		
LEVEL OF STUDY	Undergraduate		
COURSE CODE	**BP2300**	**SEMESTER**	**9ο**
COURSE TITLE	**ENVIRONMENTAL PHYSIOLOGY**		

INDEPENDENT TEACHING ACTIVITIES In case ECTS credits are allocated to distinct parts of the course, e.g., Lectures, Laboratory Exercises, etc., specify them. If ECTS credits are allocated as a whole for the entire course, indicate the weekly teaching hours and the total ECTS credits.	**WEEKLY TEACHING HOURS**	**ECTS CREDITS**
	4	3

COURSE TYPE	**Elective**
PREREQUISITE COURSES	
LANGUAGE OF INSTRUCTION AND EXAMINATIONS:	Greek
COURSE AVAILABLE TO ERASMUS STUDENTS:	**Yes**
COURSE ELECTRONIC PAGE (URL):	http://eclass.uth.gr/eclass/courses/SGEB216/

2. LEARNING OUTCOMES

Learning Outcomes

The objectives of this course are to understand the role of natural selection in the development of physiological adaptations and, consequently, to familiarize students with the effects of changing environmental conditions on animals, such as temperature, water availability, oxygen availability, food availability, and salinity.

It is also essential for students to acquire knowledge about the specific adaptations exhibited by animal organisms that live in extreme environments, such as deep-sea ecosystems, deserts, northern/polar regions, and caves. This includes familiarization with the biochemical and cellular mechanisms that support these adaptations.

The ultimate goal of this course is for students to demonstrate the necessary ability to participate in common research methods, analysis, and interpretation of physiological adaptations..

General Skills

- *Search, analysis, and synthesis of data and Search, analysis, and synthesis of data and information, using the necessary technologies*
- *- Adaptation to new situations*
- *- Decision making*
- *- Independent work*
- *- Teamwork*
- *- Generation of new research ideas*
- *- Respect for diversity and multiculturalism*
- *- Respect for the natural environment*
- *- Promotion of free, creative, and inductive thinking*

3. COURSE CONTENT

Theoretical:

The Natural Environment
Climatic and Microclimatic Conditions
Natural Selection and Biogeographic Distributions of Populations
Adaptation and Acclimatization
Physiology and Phenotypic Plasticity in Response to Environmental Changes
Environment and Thermal Relations:
Thermal Acclimatization and Temperature Regulation
Basic principles of heat exchange
Ectothermy and endothermy
Life in Cold Conditions
Avoidance and tolerance of freezing in ectothermic organisms
Low temperatures and endothermic organisms
Life in Desert Environments
Water and ion balance

Low Oxygen Environments:
Diving Physiology
Deep-Sea Ecosystems
Life in Caves
Food and Bioenergetics:
Environmental Differences and Feeding Strategies
Evolution of Metabolic Pathways
Environment and Metabolic Patterns
Reproduction:
Environment and Reproductive Strategies
Physiological Differences in Reproduction

4. TEACHING AND LEARNING METHODS - ASSESSMENT

Delivery: Face-to-face, Distance learning, etc.

Use of Information and Communication Technologies: Use of ICT in Teaching, Laboratory Training, Communication with students

asynchronous e-learning platform (E-class).

Organization of Teaching:
Lectures, Seminars, Laboratory Exercises, Fieldwork, Study and analysis of bibliography, Tutorials, Practical (Placement), Clinical Exercise, Artistic Workshop, Interactive teaching, Educational visits, Project development, Essay/Assignment writing, Artistic creation, etc.
Student workload is calculated for each activity in accordance with ECTS principles.

Activity	***Workload (hours)***
LECTURES	26
PROJECT WORK	20
INDIVIDUAL STUDY	34
INDEPENDENT STUDY	***80***

ASSESSMENT OF STUDENTS:
Language of assessment, methods of evaluation, formative or summative, multiple-choice test, short-answer questions, essay questions, problem-solving, written assignment, report, oral examination, public presentation, laboratory work, clinical examination of patients, artistic interpretation, other. Explicitly specified evaluation criteria accessible to students.

- Written examinations at the end of the semester
- Assessment language: Greek
- Final written examination (70%)
- Laboratory exercises (30%)
- Essay-style questions

5. RECOMMENDED BIBLIOGRAPHY

Suggested Bibliography:

Oceanography: Introduction to the Marine Environment by A. I. Theodorou, Ath. Stamoulis Publications. Indicative bibliography.
The bibliography referenced at the end of the chapters of the taught textbook.