

Title: Animal biology and physiology

Language; French / English

بيولوجيا وفيزيولوجيا حيوانية/Biologie et physiologie animale

Program Overview

This training provides the student with a solid training profile in a discipline among life sciences both laboratory and field. It aims to open up prospects for training profiles and occupations in which knowledge of biological and physiological problems is important. This discipline aims at training with a wide range of knowledge and skills in animal biology and physiology allowing an opening to very diverse sectors: agronomic, veterinary, biomedical, dietetic, pharmaceutical, agri-food, biotechnology, environment....

Curriculum Highlights

The bachelor's degree in animal biology and physiology from Hassiba Benbouali Chlef University offers a comprehensive education in biology, covering biodiversity of the living world and basic tools for its management and conservation. Students specialize in molecular and cellular biology, animal physiology and bioengineering.

Through a multidisciplinary approach, the program enables students to acquire in-depth skills to understand and manage living ecosystems while developing the technical expertise required for research professions, industry and the environment.

Graduates may come from Algerian and international universities, the pharmaceutical and biotechnology industry, education, public administration or sectors of public health, agriculture and environmental protection. They may also work in engineering companies, NGOs or communities.

In addition, the training integrates models of project management, quality, human resources and innovation, thus improving the employability of students in positions of responsibility in various professional sectors

Admissions Information

This license leads to a very varied spectrum of training

- Master in Animal Biology and Physiology
- Master in Reproductive Biology
- Master in Biology and Physiology of Animal Nutrition

Core Courses

Basic courses are designed to provide students with the basics of biological science and animal physiology in order to give basic concepts necessary to understand the basic principles of specialization:

Molecular and Cellular Biology:

Studies the basic mechanisms of life at the cellular and molecular level, such as transcription, translation and gene regulation.

Brings skills to work on cell culture, recombinant DNA techniques, PCR and protein analysis.
Physiologically the main functions of animal organisms (vertebrates and invertebrates)
Analyzes the work of physiological organs (neurological, digestive, respiratory, circulatory, endocrine, etc.).
Understanding biological adaptations and interactions between the environment and organisms.
Bioengineering:
Application of biological principles for the development of technologies in the fields of biotechnology, pharmacology and bioengineering.
Includes biomolecule production, biological hydration and industrial biological production.
Management and conservation of biodiversity:
Study the classification, identification and protection of animal species.
involves developing strategies for preserving ecosystems and combating biodiversity loss.
Basic and clinical research:
Applied research in biomedical sciences and clinical trials to develop new treatments.
Integrates animal experiments and cell models to understand disease mechanisms.
Environmental protection:
analyses the impact of human activities on ecosystems and proposes solutions for sustainable management of natural resources.
Includes ecological toxicology and pollution monitoring.
Public Health and Agriculture:
Study the links between biology and the fields of medicine, nutrition and epidemiology.
Provides knowledge about animal disease management, food hygiene and health safety.
Innovation and promotion of biological products:
Explore biotechnology processes to develop products for pharmaceutical, cosmetic or agricultural use of food.
Encourages the creation of green biotechnology start-ups and projects

Advanced Topics

Advanced materials address in great depth the concepts and techniques presented in the core courses and offer more specialized areas. It is generally reserved for students who already have a solid foundation in biology and animal physiology. Here are some examples of advanced topics

1. Physiology of key functions

Study the nervous system, endocrinology, digestive system, circulation, respiratory system, output and reproductive system of animals.

It analyses the physiological organization and interactions between these systems.

2. Neurophysiology

It delves into the work of neurons, synapse transmission, and mechanisms involved in reactions and behaviors.

Study of diseases of the nervous system (neurodegeneration, neuromuscular disorders).

3. Animal endocrinology

Study hormones and their role in regulating physiological functions (growth, metabolism, reproduction, stress).

Analysis of endocrine disorders and interactions between the nervous system and the hormonal system.

4. Immunology

Study mechanisms for defending the body against infection (innate and adaptive immunity).

Analysis of immune responses, autoimmune diseases and immune diseases.

5. Evolutionary biology and embryology

Studies the stages of embryonic development in animals.

Includes cell differentiation, organic composition and growth abnormalities.

6. Comparative Physiology

The physiological adaptations of animals are compared to different environments (marine, terrestrial, aerial).

Studies of survival strategies such as hibernation, domestic heat and osmotic regulation.

7. Bioenergy and metabolism

Metabolic processes related to energy production and consumption in animals.

Study cellular respiration, metabolic pathways and thermoregulation.

8. Ethics and biology

Analysis of animal behavior (communication, reproduction, migration, learning).

Biological foundation studies and environmental impacts on behaviour.

9. Animal Toxicology

Study the effects of toxins and contaminants on animal organisms.

Analysis of toxicity mechanisms and physiological responses to pollutants.

10. Experimental techniques in animal biology:

Studies methods of studying animal biology (microscopy, cell culture, tissue science, electrical physiology).

Learn in animal models and in the lab

Tuition Fees

Free of charge. (don't change it)

Teaching Language

French/English. (don't change it)

REPUBLIC OF ALGERIA AND DEMOCRATIC
MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH



Compliance Framework

TRAINING OFFER

L. M.D

Academic degree

2015-2016

Establishment	Faculty/institute	Department
Hassiba Ben Bouali University at Chlef Sciences	Sciences	Biology

Field	Line	speciality
Hassiba Ben Bouali University at Chlef Sciences	Biological sciences	Biology and animal physiology

II. Semi-annual organizational sheet of the specialty's teachings

(S5 and S6)

(include the annexes to the common-ground orders of the field and branch)

Common Base «Natural and Life Sciences»

Semester 1

Units teaching	Subject matter		Credits	Coefficients	Hourly volume weekly			VHS (15 weeks)	Other*	Mode of evaluation			
	Code	Entitled			Course	TD	TP			CC*		Review	
U E Fundamental Code: UEF 1.1 Credits: 15 Coefficients : 7	F 1.1.1	General chemistry and organic	6	3	1h30	1h30	1h30	67h30	60h00	x	40%	x	60%
	F 1.1.2	Cell biology	9	4	1h30	1h30	3h00	90h	90h00	x	40%	x	60%
U Methodology Code: EMU 1.1 Credits: 8 Coefficients: 4	M 1.1.1	Mathematical Statistics Computer	5	2	1h30	1h30	-	45h00	60h00	x	40%	x	60%
	M 1.1.2	Techniques of Communication and of Expression 1 (in French)	3	2	1h30	1h30	-	45h00	45h00	x	40%	x	60%
U E Discovery Code : UED 1.1 Credits: 5 Coefficients : 3	D 1.1.1	Geology	5	3	1h30	-	3h00	67h30	60h00	x	40%	x	60%
U E Transversal Code: UET 1.1 Credits: 2 Coefficients : 1	T 1.1.1	Universal History of Biological Sciences	2	1	1h30	-	-	22h30	45h00	x			
Total Semester 1			30	15	9am	6:00	7:30	337h30	360h				

Other* = Additional work in semi-annual consultation; CC* = Continuous monitoring.

Semester 2

Units teaching	Subjects		Credits	Coefficients	Hourly volume weekly			VHS	Other*	Mode of evaluation			
	Code	Entitled			Course	TD	TP			CC*	Review		
U E Fondamentale Code: UEF 2.1 Appropriations: 22 Coefficients : 9	F 2.1.1	Thermodynamics and chemistry solutions	6	3	1h30	1h30	1h30	67h30	60h	x	40%	x	60%
	F 2.1.2	Plant Biology	8	3	1h30	-	3h00	67h30	90h	x	40%	x	60%
	F 2.1.3	Animal Biology	8	3	1h30	-	3h00	67h30	90h	x	40%	x	60%
U Methodology Code: EMU 2.1 Credits: 6 Coefficients : 4	M 2.1.1	Physical	4	2	1h30	1h30	--	45h00	45h	x	40%	x	60%
	M 2.1.2	Techniques of Communication and of Expression 2 (in English)	2	2	1h30	1h30	-	45h00	45h	x	40%	x	60%
U E Transversal Code: UET 2.1 Credits: 2 Coefficients : 1	T 2.1.1	Working methods	2	1	1h30	-	-	22h30	25h	x			
Total Semester 2			30	14	10.30 am	4h30	7:30	315h	355h				

Other* = Additional work in semi-annual consultation; CC = Continuous monitoring.

Semester 3

Teaching units	Subjects	Credits	Coefficients	Hourly volume weekly			VHS (15 weeks)	Other*	Mode of evaluation			
	Entitled			Course	TD	TP			CC*	Review		
U E Fondamental Code: UEF 2.1.1 Credits: 8 Coefficients : 3	Zoology	8	3	2 x 1h30	1h30	1h30	90h00	45h00	x	40%	x	60%
U E Fondamental Code: UEF 2.1.2 Crédits: 16 Coefficients : 6	Biochimie	8	3	2 x 1h30	1h30	1h30	90h00	45h00	x	40%	x	60%
	Génétique	8	3	2 x 1h30	2 x 1h30	-	90h00	45h00	x	40%	x	60%
U E Methodology Code: EMU 2.1.1 Credits: 2 Coefficients: 1	Technic of Communication and Expression	2	1	1h30	-	-	22h30	20:00			x	100%
U Methodology Code: EMU 2.1.2 Credits: 2 Coefficients: 1	Working methods	2	1	1h30	-	-	22h30	20:00			x	100%
U E Discovery Code: UED 2.1.1 Credits: 2 Coefficients : 2	Biophysics	2	2	1h30	1h30	1h30	67h30	10am	x	40%	x	60%
Total Semester 3		30	13	13:30	7:30	4h30	382h30	185h				

Other* = Additional work in semi-annual consultation; CC* = Continuous monitoring.

Semester 4

Teaching units	Subjects	Credits	Co-requisites	Hourly volume weekly			VHS (15 weeks)	Other*	Mode of evaluation			
	Entitled			Course	TD	TP			CC*		Review	
U E Fundamental Code: UEF 2.2.1 Credits: 8 Coefficients : 3	Botany	8	3	2 x 1h30	1h30	1h30	90h00	45h	x	40%	x	60%
U E Fundamental Code: UEF 2.2.2 Appropriations: 14 Coefficients : 5	Microbiology	8	3	2 x 1h30	1h30	1h30	90h00	45h	x	40%	x	60%
	Immunologie	6	2	1h30	1h30	-	45h00	37h	x	40%	x	60%
U Methodology Code: EMU 2.2.1 Credits: 4 Coefficients: 2	General Ecology	4	2	1h30	1h30	1h30	67h30	20h	x	40%	x	60%
U Methodology Code: EMU 2.2.2 Credits: 4 Coefficients: 2	Biostatistics	4	2	1h30	1h30	-	45h00	37h	x	40%	x	60%
Total Semester 4		30	12	10.30 am	7:30	4h30	337h30	184h				

Other* = Additional work in semi-annual consultation; CC* = Continuous monitoring.

Semester 5:

Teaching Unit	VHS	V.H weekly				Coeff	Credits	Mode of evaluation	
	14-16 sem	C	TD	TP	Other*			Continuous (40%)	Review (60%)
EU fundamental									
UEF 3.1.1:Descriptive biology									
Subject 1: Development embryonic	67h30	3h00	1h30	3h00	60h00	3	7	X	X
Subject 2:Functional histology	67h30	1h30		3h00	60h00	3	7	X	X
Subject 3: Comparative Anatomy Vertebrate	67h30	1h30		3h00	60h00	3	7	X	X
EU methodology									
UEM1: Computer tools in statistics	45h	1h30		1h30		1	2	x	X
EU Discovery									
UED1: Population genetics	45h	1h30	1h30	1h30	45	3	5	X	x
EU Transversal									
UET1:Expression and communication	22.5h	1h30				1	2	x	x
Total Semester 5	315	10.30 am	3am	12h	225	14	30		

*Personal work

Semester 6:

Teaching Unit	VHS	V.H weekly				Coeff	Credits	Mode of evaluation	
	14-16 sem	C	TD	TP	Other*			Continuous (40%)	Exam (60%)
EU fundamental									
UEF 3.2.1: General Physiology									
Subject 1:Physiology of the great functions	67h30	3h00	1h30	3h00	50h00	3	6	X	X
Subject 2:Endocrinology Functional	67h30	3h00	1h30	1h30	50h00	3	6	X	X
Subject 3: Cellular Physiology and molecular	67h30	3h00	1h30	1h30	50h00	3	6	X	X
UEF2(O/P) :									
Subject 1: Procreation medically assisted	45	1h30	1h30		45	2	4	x	x
EU methodology									
UEM1: Culture cellulaires	45	1h30		3am		2	4	x	x
EU Transversal									
UET1:English	20	1h30				1	2	X	x
UET2:Mini-project	45h				45h	1	2		X
Total Semester 6	360	13:30	6am	9am	240	15	30		

*Personal work