



Instruction descriptive form

Domain: Natural and Life Sciences

Branch: Biological Sciences

Specialty: Plant's Biology and Physiology

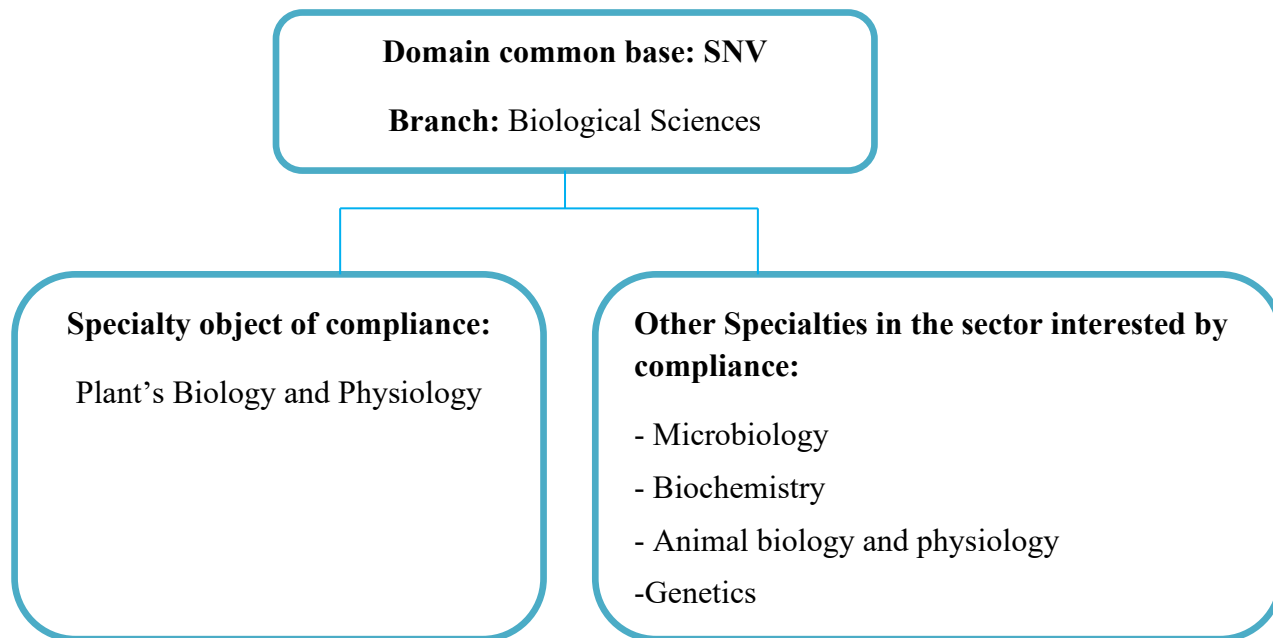
Cycle: Bachelor

Type: Academic

Attachment structure: Faculty of Natural and Life Sciences, Agronomy department

1. Formation context

This formation provides basic scientific knowledge in natural and life sciences, precisely in plant's biology and physiology, cellular and molecular biology.



2. Access conditions

The acquisition of two years in Biological Sciences common core studies

3. Objectives

Bachelor's degree in Plant's Biology and physiology aims to train competent managers in:

- Plant genetics and physiology.
- Improvement of plants.
- Genomics

The main objective is to support the dynamics of research in the production sector of Agro-food, pharmaceutical, cosmetics...etc

4. Profile and skills targeted

- Having basic knowledge of plant sciences and their agronomic, biotechnological and agro-food applications.
- Mastery of the biotechnological tool in the improvement of plant production, aiming at conservation and improvement of phyto-genetic resources, especially species of agro-economic interest.
- Students completing this training will be able to join research laboratories.
- Do individual or group private activities.
- Allow students access to further studies (Master, Doctorate).

5. Regional and national employability potential

Bachelor's studies in natural and life sciences combines fundamental and practical lessons, and offers professional opportunities in the following sectors:

- Agriculture.
- Teaching and research (graduate studies).
- Ministry of Education.
- Research offices.
- Studies centers.
- Research laboratories.
- Continuation of studies in both academic and professional master.

6. Gateways to other specialties

Primarily, the Plant's Biology and Physiology graduate will have the choice to enroll for an Academic Master in Plant's Biotechnology at the faculty of Nature and Life Sciences of Abbes LAGHROUR university of Khenchela.

Possible gateways sectors (in different graduate studies establishments on the national territory):

- Plant's biology
- Genetics and plant's improvement.
- Genetics and molecular biology
- Plant's biotechnology
- Plant's ecology.

7. Training Partners

a) Partner establishments:

ITGC (Khroub), ITCMI (Oum Bouaghi) and the pilot farm of Kais, Khenchela.

b) Companies and other socio-economic partners:

➤ Agronomic sector:

- Direction of Conservation of forests in the wilaya of Khenchela (field trips, practical training and co-supervision).
- Direction of agricultural services (D.S.A), wilaya of khenchela (reception of student trainees, co-supervision, installation of experiments in pilot farms, supply of biological material).
- ERGR Aurès company, Khenchela project
- Sagrodev, Sétif: Reception of intern students and co-supervision.

➤ Environment sector:

Public and private quality control laboratories (co-supervision, practical training

c) International partners:

Regional Center for Agronomic Research (CRRA) of the Institute of Agronomic Research (INRA), Rabat, Morocco.

8. Semester organization of lessons (one table per semester)

➤ Semester 1

Teaching units	14-16 weeks.	Study hours per week			
		courses	tutorials	practical courses	other
Fundamental U					
General and organic chemistry	67h30	1h30	1h30	1h30	82h30
cellular biology	90h00	1h30	1h30	3h00	110h00
Statistical Mathematics	45h00	1h30	1h30	-	55h00
Methodology U					
Geology	60h00	1h30	1h30	1h00	65h00
Communication and Expression Techniques 1 (in French)	45h00	1h30	1h30	-	55h00
Transversal U					
Universal History of Biological Sciences	22h30	1h30	-	-	2h30
Discovery U					
Working Method and Terminology 1	45h00	1h30	1h30		5h00

➤ Semester 2

Teaching units	14-16 weeks.	Study hours per week			
		courses	tutorials	practical courses	other
Fundamental U					
Thermodynamics and chemistry of solutions	67h30	1h30	1h30	1h30	82h30
Vegetable Biology	67h30	1h30	-	3h00	82h30
Animal Biology	67h30	1h30	-	3h00	82h30
Methodology U					
Physics	60h00	1h30	1h30	1h00	65h00
Communication and Expression Techniques 2	45h00	1h30	1h30	-	55h00
Transversal U					
Working Method and Terminology 2	22h30	1h30	-	-	2h30
Discovery U					
Life sciences and socio-economic impacts	45h00	1h30	1h30		5h00

➤ Semester 3

Teaching units		<i>Study hours per week</i>			
	14-16 weeks.	courses	tutorials	practical courses	other
Fundamental U: Code : UEF 2.1.1 Crédit : 6 Coefficient : 3					
Zoology	67h30	3h00	-	1h30	82h30
Fundamental U: Code : UEF 2.1.2 Crédit : 12 Coefficient : 6					
biochemistry Crédits : 6 Coefficients : 3	67h30	3h00	1h30	-	82h30
Genetic Crédit : 6 Coefficient : 3	67h30	3h00	1h30	-	82h30
UE Methodology U Code : UEM 2.1.1 Crédit : 4 Coefficient: 2					
Communication and Expression Techniques (en anglais)	45h00	1h30	1h30	-	55h00
U E Methodology U Code : UEM 2.1.2 Crédit : 5 Coefficient: 3					
Biophysical	60h00	1h30	1h30	1h00	65h00
Transversal U Code : UET 2.1.1 Crédit : 1 Coefficient : 1					
University Ethics and Deontology	22h30	1h30	-	-	2h30
Discovery U Code : UED 2.1.1 Crédit : 2 Coefficient : 2					
environment and Sustainable development	45h00	1h30	1h30	-	5h00

➤ Semester 4

Teaching units		Study hours per week			
	14-16 weeks.	courses		14-16 weeks.	courses
Fundamental U: Code : UEF 2.1.1 Crédits : 6 Coefficient : 3					
Botanical	67h30	3h00	-	1h30	82h30
Fundamental U: Code : UEF 2.1.2 Crédit : 12 Coefficient : 6					
Microbiology Crédits : 8 Coefficients : 4	90h00	3h00	1h30	1h30	110h00
Immunology Crédits : 4 Coefficients : 2	45h00	1h30	1h30	-	55h00
Methodology U Code : UEM 2.1.1 Crédit : 4 Coefficient: 2					
Scientific methodology and life study techniques	45h00	1h30	-	1h30	55h00
Methodology U Code : UEM 2.1.2 Crédits: 5 Coefficient: 3					
Biostatistics	60h00	1h30	1h30	1h00	65h00
Transversal U Code : UET 2.1.1 Crédit : 1 Coefficient : 1					
Informatics tools	22h30	1h30	-	-	2h30
Discovery U Code : UED 2.1.1 Crédit : 2 Coefficient : 2					
General ecology	45h00	1h30	1h30	-	5h00

➤ **Semester 5 :**

Teaching units	VHS	Weekly V.H				Coeff	Credits
	15 Weeks	Course	Directed Activity (TD)	Practical Activity (TP)	Other		
Fundamental UE						9	18
UEF 3.1.1 : Plant Physiology and Biochemistry							
Topic 1 : Plant Physiology	67h30	3h00	-	1h30	82h30	3	6
Topic 2 : Plant Biochimy	45h00	1h30	-	1h30	55h00	2	4
UEF 3.1.2 : Ecophysiology							
Topic 1 : Stress Physiology	45h00	1h30	-	1h30	55h00	2	4
Topic 2 : Eco-pedology	45h00	1h30	-	1h30	55h00	2	4
UE Methodology							
Bioclimatology	60h00	1h30	1h30	1h00	-	3	5
Bio-statistics	45h00	1h30	1h30	-	-	2	4
Discovery UE							
Molecular biology	45h00	1h30	1h30		-	2	2
Transverse UE							
Work Methods	22h30	1h30	-	-	-	1	1
Total of semester 5	375h	13h30	4h30	7h00		17	30

➤ **Semester 6 :**

Teaching units	VHS	Weekly V.H				Coeff	Credits
	15 Weeks	Course	Directed Activity (TD)	Practical Activity (TP)	Other		
Fundamental UE							
UEF 3.2.1 : Developmental biology							
Topic 1 : Ontogenesis of higher plants	45h00	1h30	-	1h30	55h00	2	4
Topic 2 : Genetic Improvement of Plants	45h00	1h30	-	1h30	55h00	2	4
Topic 3 : Reproductive Biology	45h00	1h30	-	1h30	55h00	2	4
UEF 3.2.2 :							
Applied Botany	67h30	1h30		3h00		3	6
Methodology UE							
Topic 1: Valorization of plant products	60h00	1h30	1h30	1h	60h00	3	5
Topic 2: Populations Genetics	45h00	1h30	1h30	-	45h00	2	4
Discovery UE							
Bio-informatics	45h00	1h30	-	1h30	45h00	2	2
Transverse UE							
Biological analysis technique	22h30	1h30	-		22h30	1	1
Total of semester 6	375h00	180h00	45h00	150h00	375h	17	30