

Bachelor in Branch: *Agricultural Sciences*

Speciality: *Soil and Water*

Summary of objectives and training pathways

Water is one of the important factors of wealth creation in the agricultural sector. In arid and semi-arid zones which are characterized by a rainfall deficit, irrigation ensures satisfactory production thresholds, ensuring good productivity, hence a regular supply of markets. The University Djilali Bounaama of Khemis Miliana is located in the full perimeter of Haut Chélif who is supply by four major dams Ghrib, Deurdeur, Harreza and SMBT, an important alluvial aquifer, and is crossed by the largest Oued in Algeria which is the Cheliff.

The objectives of the soil and water bachelor is to train specialist executives in agricultural hydraulics who master the fields of pedology, hydrology, hydrogeology, cartography, statistics, climate change, hydraulics, irrigation water quality, conservation of soils ..., which will contribute to a rational and efficient use of irrigation water on soils potentially treated and adapted to different crops.

Field	Branch	Speciality
natural and life sciences	<i>Agricultural sciences</i>	<i>Soil and Water</i>

First Semester

Teaching unit	Matter	Credit	Coefficient	Course	TD	TP	HV
Fundamental Unit	General and organic chemistry	6	3	1h30	1h30	1h30	67h30
	cellular biology	8	4	1h30	1h30	3h	90h
	Mathematics and statistics	4	2	1h30	1h30	1h	45h
Methodological unit	Geology	5	3	1h30	1h30	-	60h
	Technique of communication and expression	4	2	1h30	1h30	-	45h

Teaching unit	Matter	Credit	Coefficient	Course	TD	TP	HV
	1 (In French)						
Discovery unit	Working method and terminology 1	2	2	1h30	1h30	-	45h
Transversale Unit	Working method and terminology 1	1	1	1h30	1h30	-	22h30

Second Semester 2

Teaching unit	Matter	Credit	Coefficient	Courses	TD	Practical Work	Volume (hour)
Fundamental Unit	Thermodynamics and chemistry of solutions	6	3	1h30	1h30	1h30	67h30
	Vegetal biology	6	3	1h30	-	3h	67h30
	animal biology	6	3	1h30	-	3h	67h30
Methodological unit	Physic	5	3	1h30	1h30	1h	60h
	Communication and Expression Techniques 2 (in English)	4	2	1h30	1h30		45h
Discovery unit	Life sciences and socio-economic impacts	2	2	1h30	1h30		45h
Transversale Unit	Working method and terminology	1	1	1h30	--		22h30

Third Semester

Teaching unit	Matter	Credit	Coefficient	C	TD	TP	HV
Fundamental Unit	Zoology	4	2	1h30	-	1h30	45h
	animal physiology	2	1	1h30	-		22h30
	Biochemistry	6	3	3h	1h30		67h30
	Genetic	6	3	3h	1h30		67h30
Methodological unit	Communication and expression techniques (In English)	4	2	1h30	1h30		45h
	Biophysics	5	3	1h30	1h30	1h	60h
Discovery unit	Environment and Sustainable Development	2	2	1h30	1h30		45h
Transversale Unit	Ethics and university deontology	1	1	1h30	1h30	1h30	1h30

Fourth semester

Teaching unit	Matter	Credit	Coefficient	C	TD	TP	HV
Fundamental Unit	Agronomy I	4	2	1h30	1h30	-	45h
	Agronomy II	4	2	1h30	1h30	-	45h
	Microbiology	6	3	1h30	1h30	1h30	67h30
	Botanical	4	2	1h30	-	1h30	45h
Methodological unit	Plant physiology	4	2	1h30	-	1h30	45h
	Biostatistics	5	3	1h30	1h30	1h	60h
Discovery unit	General ecology	2	2	1h30	1h30	-	45h
Transversale Unit	Informatical tools	1	1	1h30	-	-	22h30

Fifth semester

Teaching unit	Matter	Credit	Coefficient	C	TD	TP	HV
Fundamental Unit	General Pedology	6	3	1h30	1h30*	1h30*	67h30
	General Cartography	4	2	1h30	-	1h30	45h00
	Hydrogeology	4	2	1h30	1h30*	-	45h00
	Hydrology	4	2	1h30	1h30	-	45h00
Methodological unit	Agro meteorology	4	2	1h30	1h30	-	45h00
	Statistics and data analysis	5	3	1h30	1h30	1h	60h00
Discovery unit	climate change and water resources	2	2	1h30	1h30	-	45h00
Transversale Unit	Technical English	1	1	1h30	-	-	22h30

*Scientific outings

Six Semester

Teaching unit	Matter	Credit	Coefficient	C	TD	TP	HV
Fundamental Unit	General hydraulics	6	3	1h30	1h30	1h30*	67h30
	Irrigation and drainage	6	3	1h30	1h30	1h30	67h30
	Soil conservation	6	3	3h	1h30	-	67h30
Methodological unit	Water quality	4	2	1h30	1h30	-	45h00
	Water and irrigated perimeters	2	1	1h30	-	-	22h30

Teaching unit	Matter	Credit	Coefficient	C	TD	TP	HV
	Topography	3	2	1h30	-	1h	37h30
Discovery unit	Introduction to geostatistics	2	2	1h30	1h30	-	45h00
Transversale Unit	Operation of a hydro-agricultural structure	1	1	-	-	1h30	22h30