PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH

MASTER'S COURSES

ACADEMIC

University	Faculty	Department
Hassiba Benbouali University - Chlef	Natural and life sciences	Agronomic Sciences

Field: Natural and Life Sciences (SNV)

Branch: Agronomic Sciences

Specialty: Water and Environment

Academic year: 2017/2018

1 - Training objectives (skills targeted, pedagogical knowledge acquired on completion of training - maximum 20 lines)

Train students in engineering while introducing them to scientific research through a multi-disciplinary environmental training program focusing on integrated water resources within the framework of a global, naturalistic vision of the resource.

Water resources are considered an essential component of the environment, directly linked to the other components (atmosphere, soil, vegetation, etc.), affecting them and being affected by them as part of a dynamic ecosystem (biodiversity-water-soil) on a landscape scale.

This course is a logical continuation of the basic training provided by the two academic degrees offered by our faculty (Soil - Water and Ecology & Environment). The aim is to capitalize on the knowledge potential acquired during this initial training and invest it in more in-depth and specialized complementary training.

2 - Profiles and professional skills targeted (*in terms of professional integration - maximum 20 lines*) :

The proposed Master's degree in "Water and the Environment" is a new specialization based on a global vision of the agronomic sciences and the management of environmental risks associated with water resources in agriculture. Water for agriculture is an important means of production, and the subject of research by various teams belonging to two accredited research laboratories (Biodiversity and Natural Resources, Water and the Environment). The environmental approach to water in the natural environment (watershed) under different climatic conditions, is the area of competence of our students at the end of their training.

3- Regional and national potential for graduate employability

On completion of their training, graduates will be in a position to intervene in any problem linked to the interaction between water and the environment in the agronomic sciences, by deducing the impact, diagnosing the situation or intervening to remedy the situation. The ultimate aim is to control water resources and their impact on the environment, a term that is very much in vogue around the world. Their work focuses on water and soil conservation techniques at watershed level, and on reducing and remedying the environmental impacts of water use.

Graduates must be able to carry out sampling and surveys, apply mathematical models, draw up GIS and thematic maps to find solutions to various problems relating to the impact of water on the environment. Finally, they will be able to apply techniques to prevent and treat these problems.

4 - Gateways to other specialties

Master's Degree in Water and Agricultural Equipment, Master's Degree in Hydropedology, Master's Degree in Bioclimatology

5 - Training follow-up indicators

Continuing education: number of trainees,

- Master's degree professional integration rate
- Number of apprenticeship students
- National mobility of students entering the Master's program
- Outgoing international student mobility
- Percentage of the school's publications in national and international reference international publications, out of total faculty publications

II - Semester organization sheet

(Please present all 4 semester cards)

1- Semester 1 :

Teaching Unit	VHS		V.H w	veekly		Cooff	Cradite	Evaluation mode	
	14-16	С	TD	TP	Travind	COEII	Credits	Continuous	Review
Fundamental EU									
UEF1(O/P) : Applied hydraulics									
River Hydraulics	67h30	1h30	1h30	1h30	82h30	3	6	40%	60%
Groundwater Hydraulics	45h	3h00			55h	2	4	40%	60%
UEF2(O/P): Environmental risks									
Environmental water chemistry	45h	1h30	1h30		55h	2	4	40%	60%
Climate-related environmental risks	45h	1h30		1h30	55h	2	4	40%	60%
EU methodology									
UEM1(O/P) : Statistical hydrology									
Statistical hydrology	60h	1h30	1h30	1h00	65h	3	5	40%	60%
UEM2(O/P): Statistical analysis									
Statistical data analysis	45h	1h30	1h30		55h	2	4	40%	60%
EU discoverv			1		1				
UED1(O/P) : Climate change									
Climate change and the environment	22h30	1h30			2h30	1	1	40%	60%
Cross-disciplinary courses									
UET1(O/P) : Communication									
Scientific English	22h30	1h30			2h30	1	1	40%	60%
Communication	22h30	1h30			2h30	1	1	40%	60%
Total Semester 1	375h	15h	6h	4h	375h	17	30		

2- Semester 2 :

Tooching Unit	VHS		V.H w	veekly		Coeff	Crodite	Evaluation mode	
reaching offic	14-16 wks	С	TD	TP	Travind		Credits	Continuous	Review
Fundamental EU									
UEF1(O/P): Ecosystem operation									
Erosion, solid transport and siltation of dams	67h30	1h30	1h30	1h30	82h30	3	6	40%	60%
Global ecosystem functioning	45h	3h00			55h	2	4	40%	60%
UEF2(O/P): Water quality									
Water quality and treatment	45h	1h30	1h30		55h	2	4	40%	60%
Water geochemistry	45h	1h30		1h30	55h	2	4	40%	60%
EU methodology									
UEM1(O/P): Geomatics									
GIS and remote sensing	60h	1h30	1h30	1h00	65h	3	5	40%	60%
UEM2(O/P): Applied computing									
Hydro-Informatique	45h	1h30	1h30		55h	2	4	40%	60%
EU discovery			1	1					
UED1(O/P) :Scientific writing									
Scientific Writing	45h	1h30	1h30		5h	2	2	40%	60%
Cross-disciplinary courses			1	1					
UET1(O/P) : Legislation									
Legislation	22h30	1h30			2h30	1	1	40%	60%
Total Semester 2	375h	15h	6h	4h	375h	17	30		

3- Semester 3 :

Tooching Unit	VHS		V.H w	veekly		Coeff	Cradite	Evaluation mode	
	14-16 wks	С	TD	TP	Travind		Credits	Continuous	Review
Fundamental EU									
UEF1(O/P) :Modeling									
Hydrological modeling	67h30	1h30	1h30	1h30	82h30	3	6	40%	60%
Hydrogeological modeling of porous media	45h	3h00			55h	2	4	40%	60%
UEF2 (O/P): Soil									
degradation									
Salinization and physico- chemical degradation of soils	45h	1h30	1h30		55h	2	4	40%	60%
Economic impact of environmental problems	45h	1h30		1h30	55h	2	4	40%	60%
EU methodology									
UEM1(O/P): geostatistics									
Applied geostatistics	60h	1h30	1h30	1h00	65h	3	5	40%	60%
UEM2(O/P): Landscaping									
Hydraulic developments and their impact	45h	1h30	1h30		55h	2	4	40%	60%
EU discovery			I						
UED1(O/P) : Water management									
Integrated water management	45h	1h30	1h30		5h	2	2	40%	60%
Cross-disciplinary courses									
UET1(O/P) :									
Entrepreneurship	22h30	1h30			2h30	1	1	40%	60%
Total Semester 3	375h	15h	6h	4h	375h	17	30		

4- Semester 4 :

Domain	Nature and Life Sciences
Branch	Agronomic Sciences
Specialty	: Water and Environment

In-company internship culminating in a dissertation and oral presentation.

	VHS	Coeff	Credits
Personal work	100	4	15
Internship	100	3	15
Seminars			
Memory			
production			
Total Semester 4	200	7	30

5- Overall summary of training: (indicate the overall VH separated into courses, TD, for the 04 teaching semesters, for the different types of UE)

EU VH	UEF	UEM	UED	UET	Total
Courses	337H30	135H00	67H30	90H00	630H00
TD	135H00	135H00	45H00	00H00	315H00
ТР	135H00	45H00	00H00	00H00	180H00
Personal work	742H30	360H00	12H30	10H00	1125H00
Other (Internship)	100H00	100H00			200H00
Total	1450H00	775H00	125H00	100H00	2450H00
Credits	69	42	5	4	120
% in credits for each EU	57.50%	35.00%	4.17%	3.33%	100%