



**Popular Democratic of Algeria**

**Ministry of Higher Education and Scientific Research**



**Abbes Laghrour University Khenchela**

## **Studies identity sheet**

### **Fundamental and applied ecology**

**Domain: Natural and life sciences**

**Branch: Ecology and Environment**

**Specialty: Fundamental and applied ecology**

**Cycle: Master**

**Type: Academic**

**Attachment structure: Faculty of natural and life sciences/  
department of Ecology**

## **Context**

### **Conditions of access**

If several Masters are offered or already supported at the level of the establishment (same training team or other training teams), indicate in the following diagram, the position of this project in relation to the other courses.

### **Objectives**

This training is of a transversal nature in which the teachers of the Faculties intervene: natural and life sciences, Earth and Universe Sciences, sciences and techniques, legal and administrative sciences, economics and management sciences. Therefore, the targeted candidates must have a bachelor's degree in natural and life sciences (option: ecology and environment) and science of the earth and the universe (option: hydrogeology, water and water sciences). environment).

Algeria is currently experiencing an upward socio-economic development. Social and industrial development in particular requires economic, scientific and legal support. On the other hand, the region of the Algerian highlands is the seat of a great industrial and demographic boom. In addition to the industries (chemicals, food, textiles, construction, metal, etc.) established in the various towns and centers of the region, an industrial zone project is in the process of being carried out on the territory of the wilaya of Khenchela, which aims to set up various industrial activities.

To ensure a good brand image and sustainable development, the environmental component must be integrated into companies from the design stage and into society as a human component. The requirements of this development require the implementation of provisions for the improvement of quality and the environment. This can only be achieved through targeted awareness and training programs. Aware of the role it must play to support this industrial and urban change, the Khenchela University Center is undertaking several actions including graduate and post-graduate training for mastery of knowledge related to the functioning of the natural environment on the one hand and on the other. share a mastery of knowledge related to the functioning of society and its means of action, which mainly concern fundamental sciences, economics, law and social sciences.

To this end, and as part of the opening of the university to its socio-economic environment, we offer a Master's degree course that meets the needs of national regional development in the field of the environment. This multidisciplinary training is provided by a panel of university teachers. In addition, this training is a continuation of the various training courses developed within the University of Khenchela in the ecology and environment sector (engineering in ecology and environment and LMD in ecology and environment)

Some topics of this training are carried out within the framework of research projects approved by the ministry and are also part of one of the axes of the research laboratory of the University of Khenchela: laboratory of Structures, Properties and Inter-Atomic Interactions (LASPI2A), devoted to water pollution.

The objectives of this training are:

- ✓ Participate in the research training of students who wish, during their thesis, to work in the field of the environment, by providing them with knowledge and methods enabling them to approach the intrinsic complexity of this field;
- ✓ Make available to companies, and especially design offices, high-level employees with extensive skills who can offer their project owner, in particular local authorities, a global response to an environmental problem .
- ✓ Develop students' knowledge of management and environmental management
- ✓ Make available to the socio-economic sector graduates capable of acting and improving the business environment), in order to initiate, in this sector, new approaches in the field of the environment (areas of water, soil and environmental rights).
- ✓ Train high-level executives capable of developing a diagnosis of water, air and soil pollution and their evolution and of managing problems related to environmental nuisances and pollution

### **Profiles and skills targeted**

This kind of Master training with the Environment label within our university takes into account the environmental concerns of the high plateau region in general and the wilaya of Khenchela in particular, the orientations of the research axes in the field and the demand of the socio-economic sector in know-how in the field of analysis, management, management of the environment and protection of ecosystems.

The benefits of this training can be summarized in:

- ✓ development of cooperation with our national partners and international
- ✓ Contribution to the development of scientific and technical research in the field of environmental analysis and assessment
- ✓ Training of qualified graduates in the field of management and environmental management
- ✓ Sensitization of the beneficiaries of this training to the interest of integrating the “Environment” component in any project with a view to sustainable development
- ✓ Participation in the sustainable development of Algerian companies
- ✓ Support for socio-economic actors in the region in the integration and management of the environment to facilitate their integration into national and international policy concerning clean production and environmental protection

### **Regional and national employability potential**

- ✓ Researcher and teacher-researcher positions within universities and research organizations
- ✓ facilitate the integration of the graduates of this training into the world of work: industrial companies, municipalities, etc.
- ✓ provide the winners of this training with decision-making tools to facilitate the creation of their own companies or consulting firms specializing in the field of environmental management.
- ✓ Provide sanitation offices across Algeria, wilaya directorates, municipal hygiene offices, public and private companies and river basin agencies with high-level executives and skills
- ✓ In addition, the national sanitation program aims at the management and sanitation of urban discharges from all agglomerations across Algeria, in particular the wilaya of Khenchela through the construction of 09 (nine) wastewater treatment plants water and 04 solid waste landfill and recycling stations. This sector is also very important and generates jobs, particularly in the field of environmental management and engineering.

## **Gateways to other specialties**

Bridges exist between this master and the “water and environment” and “ecology and environment” research masters.

## **Training Partners**

### **Other academic institutions:**

- ✓ University of Annaba
- ✓ University of Guelma
- ✓ University of Oum-El-Bouaghi

### **Companies and other socio-economic partners:**

- ✓ National Sanitation Office (ONA)
- ✓ River Basin Agency (ABH)
- ✓ Department of the environment of the wilaya of Khenchela
- ✓ SOFAMEC
- ✓ EURL SID-LABORATORY for water analysis and control
- ✓ Avignon Hydrogeology Laboratory
- ✓ University of Avignon and the Pays de Vaucluse
- ✓ Geosciences and Environmental Techniques Lab Faculty of Sciences University Chouïb Doukali El Jadida- MOROCCO

## Semester organization of lessons

### Semester1

Teaching units		<i>Study hours per week</i>			
	14-16 weeks.	courses	tutorials	practical courses	other
<b>Fundamental U</b>					
Hydrology, hydrogeology and ecology	45	1,5	1.5	0	50
Water Chemistry	60	1.5	1.5	1	60
Micropollutants	60	1.5	1.5	1	66
Environmental Microbiology	45	1.5	1,5	0	50
<b>Methodology U</b>					
Group dynamics	45	1.5	1,5	0	50
Tools and Environmental Analysis	45	1.5	1,5	0	50
<b>Transversal U</b>					
Communication	22,5	1,5	00	0	2,5
<b>Discovery U</b>					
Environmental regulations and law	22,5	1,5	00	0	2,5
Industrial Property and Security	22,5	1,5	00	0	2,5

## Semestre 2 :

Teaching units	<i>Study hours per week</i>				
	14-16 weeks.	courses	tutorials	practical courses	other
<b>Fundamental U</b>					
<b>UEF1</b>					
Basic notions of physics and energy (electrical, nuclear and renewable)	45	1.5	1.5	0	55
Management of special industrial waste	45	1.5	1.5	0	55
<b>UEF2</b>					
Pollution analysis	56.25	1.5	1.5	0.75	68,75
Groundwater contamination and treatment systems	33.75	1.5	0.75	0	41,25
Environmental impact study	33.75	1.5	0.75	0	41,25
<b>Methodology U</b>					
Statistical tools	45	1.5	0.75	0.75	55
Experimental planning methodology	33.75	1.5	0.75	0	41,25
<b>Transversal U</b>					
Legislation	22.5	1.5	0	0	2,5
English	22.5	1.5	0	0	2,5
<b>Discovery U</b>					
Environmental economics	33.75	1.5	0.75	0	41,25

### Semestre 3 :

Teaching units	14-16 weeks.	<i>Study hours per week</i>			
		courses	tutorials	practical courses	other
<b>Fundamental U</b>					
<b>UEF1</b>					
Characterization and treatment of liquid discharges	33.75	1.5	0.75	0	41,25
Identification and treatment of solid waste	45	1.5	1.5	0	55
Characterization and treatment of gaseous pollution	45	1.5	1.5	0	55
<b>UEF2</b>					
Contamination and involvement of biological mechanisms	33.75	1.5	0.75	0	41,25
Biological treatments of rejects	33.75	1.5	0.75	0	41,25
Water, Health and Environment	45	1.5	1.5	1	55
<b>Methodology U</b>					
Impact of human activities on plants	45	1.5	1,5	0	55
Impact of human activities on animals and humans	33.75	1.5	0.75	0	41,25
<b>Transversal U</b>					
Entrepreneurship	45	1.5	1,5	0	55



## **Evaluation method**

Final exam: 60%

Continuous control: 40%,

**CC assessment mode:** Questions, scientific outings, presentations, homework, etc.

**Education language/ FRENCH**