University of Oum El Bouaghi

Faculty of of exact sciences and natural and life sciences

Department of natural and life sciences

Program name: Master degree in molecular and cellular genetics of organism

- **Level: Master .**
- **Domain: natural and life sciences**
- **Field: biological sciences**
- **Specialty: molecular and cellular genetics of organism**

1. Program Description:

Molecular and cellular biology brings together the essential basic knowledge of molecular and cellular genetics. The main objective of this training consists of the study of cellular mechanisms as well as the study of the gene, genome, the regulation of gene expression and molecular techniques and methodologies are also exposed due to technological advances in the more generalized access to a certain number of them. In order to meet the multiple needs both in terms of fundamental and applied research and in terms of training, it has become necessary to undertake to develop research in molecular biology applied to the study of genetic and metabolic

pathologies. With a view to short-term development and in order to offer students diversified and up-to-date training, we are proposing the opening of a master's degree in Molecular and Cellular Biology. Furthermore, this training is based on a strong potential of teachers specialized in these areas.

Obtaining a Master's degree specializing in "Molecular and Cellular Biology" provides access to the preparation of a University doctorate. - Preparation for careers in higher education. - Careers as researchers and teacher-researchers specializing in biological research. - The training must also enable the acquisition of the prerequisites for access to competitive examinations opened by the ministry in the corps of engineers and research technicians in university and university hospital laboratories, or to executive positions in national research organizations.

2. Entry Requirements

This training requires basic knowledge acquired in chemistry, structural biochemistry and cell biology.

-Understand the concepts and approaches of classical and modern genetics.

- Understand how to use computer tools

3. Program Units and modules

Semester 1:

- Fundamental EU

UEF1(O/P)

Subject 1 Molecular biology

Subject 2 Cellular and molecular physiology

UEF2(O/P)

Subject 1 Gene and regulation

- EU methodology

UEM1(O/P)

Subject 1 Cell culture

Subject 2 Immunogenetics

- Discovery EU

UED1(O/P)

Subject 1 Pharmacogenetics

- Transversal EU

UET1(O/P)

Subject 1 Communication

Semester 2:

- Fundamental EU

UEF1(O/P)

Subject 1 Genomics and Bioinformatics

Subject 2 Genetic engineering

UEF2(O/P)

Subject 1 Molecular and cellular aspect of development

- EU methodology

UEM1(O/P)

Subject 1 Population genetics

Subject 2 Biostatistics

- Discovery EU

UED1(O/P)

Subject 1 Gene and cell therapy

- Transversal EU

UET1(O/P)

Subject 1 Entrepreneurship

Semester 3:

- Fundamental EU

UEF1(O/P)

Human genetics

Cytogenetic

UEF2(O/P)
Oncogenetics

- EU methodology

UEM1(O/P)
Recombinant DNA technique
Analysis of experimental data in biology

- Discovery EU

UED1(O/P)
Article analysis

- Transversal EU

UET1(O/P)
Legislation

.4Regional and national employability potential of graduates

Research in university, university hospital or specialized private laboratories Higher education (in the various Algerian universities)