

University of Oum El Bouaghi

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Faculty of exact sciences, nature sciences and life

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Department of nature sciences and life

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Program name: Bachelor's degree in applied microbiology

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- **Level: Master**

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- **Domain: natural sciences life and nature**

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- **Field: biological sciences**

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- **Specialty: applied microbiology**

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1. Program Description:

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Microbiology is considered a developing science at the heart of many applications resulting from the biological revolution. It has a significant economic impact and is considered a strategic discipline in research and development policies.

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it is a discipline that has many applications in the food and bio-product industries, nutrition, health and the environment. The societal challenges related to the control of microorganisms in the food, water, environment, cosmetics and health sectors require the training of competent managers in the field of microbiology.

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2. Entry Requirements

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Students holding a license in Biology with an orientation in Microbiology, Students must acquire a specific mastery of the strategies, approaches and methods to be implemented, validated or under development, to allow the prevention of health accidents. or exploit the properties of microorganisms.

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3. Program Units and modules

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Semester 1

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fundamental teaching units

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UF1 Microorganisms and health	30
Subject 1: Medical bacteriology	31
Subject2: Medical virology	32
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UF2	34
Subject 1: Microbiology of fermentations	35
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Methodology teaching units	37
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MU1	39
Subject 1: Food microbiology	40
Subject 2: Reading practicals	41
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DISCOVERY UNITS	43
Subject 1: General microbiology techniques	44
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TRANSVERSAL UNITS	46
Subject 1: Communication	47
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Semester 2:	50
fundamental teaching unit	51
UF1	52
Subject 1: Microbial interaction	53
UF2	54
Subject 2: enzymatic technology	55
methodology teaching units	56
MU1	57
Subject 1: Biochemical Purification Processes	58

Subject 2: reading practicals	59
EU D1	60
Subject 1: Bioinformatics	61
transversal teaching units	62
UET1	63
subject1 : legislation	64
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SEMESTER3	66
fundamental teaching units	67
UF1	68
Subject 1: Environmental Biotechnology	69
UF2	70
Subject 1: Control of industrial microbiology products	71
UF3	72
subject1: plasticity of the microbial genome	73
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methodology teaching units	75
MU1	76
Subject 1. Genetic engineering applied to microbial biotechnology	77
UM2	78
Subject 1 Analysis of experimental data in biology	79
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discovery teaching units	81
UD1	82
Subject 1 Bibliographic research and analysis of articles	83
UT1	84
Subject 1: Scientific and technical English	85
Subject 2: Entrepreneurship and project management	86
Semester 4:	87

Internship in a company sanctioned by a thesis discussion.	88
1. Other	89
The deepening of knowledge of micro-organisms in view of their importance for biotechnology and medicine;	90
-the understanding and control of their activities when they are harmful (microbiological examination of samples and biological fluids, antibiotic therapy, etc.),	91
- the use and improvement of their properties when they are beneficial (yeasts, yogurt, antibiotics, etc.).	92
- Industrial applications of microorganisms (fermentation, production of enzymes, amino acids, vitamins, food supplements, bioremediation, biotransformation, production of pesticides, biofuel); -	93
The development of new health food products (probiotics);	94
- Factors involved in "micro-organism-animal host" interactions, - The role of micro-organisms in ecosystems; - Symbiotic associations between micro-organisms and plants; - The place of micro-organisms in the development of biogeochemical cycles; - Optimization of treatment of pollution by microbiological means.	95
The theoretical and practical lessons provided will allow the training of Microbiologists directly operational in the analysis and quality control laboratories (water, food, health, etc.) or in the production sectors (medicines, dairy products and derivatives). , yeasts,...	96
The training aims to train executives with multidisciplinary skills in applied microbiology. It allows students to acquire different skills required in different fields: -Agro-food industries	97
-Biological and pharmaceutical industries-Hygiene laboratories and veterinary services (laboratories for control and repression of fraud)-Research and development laboratories-Water treatment industries, Students could also pursue higher education: PhD.	98
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