

# ACADEMIC LICENSE

<b>Establishment</b>	<b>Faculty</b>	<b>Department</b>
<b>Djilali Bounaama University of Khemis Miliana</b>	<b>Faculty of Natural and Life Sciences and Earth Sciences</b>	<b>Biology</b>

<b>Field</b>	<b>Branch</b>	<b>Specialty</b>
<b>Natural and Life Sciences</b>	<b>Biological Sciences</b>	<b><i>MICROBIOLOGY</i></b>

### First Semester

Teaching units	Subjects		Credits	Coefficients	Hourly volume weekly			HVW (15 weeks)	Other *	Mode of evaluation			
	Code	Title			Course	DW	PW			CC*	Exam		
<b>U E Fundamental Code: UEF 1. 1 Credits: 18 Coefficients: 9</b>	F 1.1.1	General and organic chemistry	6	3	1H30	1H30	1H30	67H30	82H30	X	40%	X	60%
	F 1.1.2	Cellular biology	8	4	1H30	1H30	3H00	90H00	110H00	X	40%	X	60%
	F 1.1.3	Mathematics Statistics	4	2	1H30	1H30	-	45H00	55H00	X	40%	X	60%
<b>U E Methodology Code: UEM 1.1 Credits: 9 Coefficients: 5</b>	M 1.1.1	Geology	5	3	1H30	1H30	1H00	60H00	65H00	X	40%	X	60%
	M 1.1.2	Communication and Expression Techniques 1 (in French)	4	2	1H30	1H30	-	45H00	55H00	X	40%	X	60%
<b>U E Discovery Code : UED 1.1 Credits: 2 Coefficients: 2</b>	D 1.1.1	Working Methods and Terminology 1	2	2	1H30	1H30		45H00	5H00	X	40%	X	60%
<b>U E Transversal Code: UET 1.1 Credits: 1 Coefficients: 1</b>	T 1.1.1	Universal History of Biological Sciences	1	1	1H30	-	-	22H30	2H30	-	-	X	100
<b>Total Semester 1</b>			<b>30</b>	<b>17</b>	<b>10h30</b>	<b>9h00</b>	<b>5h30</b>	<b>375h00</b>	<b>375h00</b>				

Other\* = Additional work in semester consultation; CC\* = Continuous control.

**Common base « Natural and Life Sciences » domain**

**Second Semester**

Teaching units	Subjects		Credits	Coefficients	Hourly volume weekly			HVW (15 weeks)	Other *	Mode of evaluation			
	Code	Title			Course	DW	PW			CC*	Exam		
<b>U E Fundamental</b> Code: UEF 2. 1 Credits:18 Coefficients: 9	F 2.1.1	Thermodynamics and solution chemistry	6	3	1H30	1H30	1H30	67H30	82H30	X	40%	X	60%
	F 2.1.2	Plant Biology	6	3	1H30	-	3H00	67H30	82H30	X	40%	X	60%
	F 2.1.3	Animal Biology	6	3	1H30	-	3H00	67H30	82H30	X	40%	X	60%
<b>U E Methodology</b> Code: UEM 2.1 Credits: 9 Coefficients: 5	M 2.1.1	Physics	5	3	1H30	1H30	1H00	60H00	65H00	X	40%	X	60%
	M 2.1.2	Communication and Expression Techniques 2 (in English)	4	2	1H30	1H30	-	45H00	55H00	X	40%	X	60%
<b>U E Discovery</b> Code : UED 2.1 Credits: 2 Coefficients: 2	D 2.1.1	Life Sciences and Socio-Economic Impact	2	2	1H30	1H30	-	45H00	5H00	X	40%	X	60%
<b>U E Transversal</b> Code: UET 2.1 Credits: 1 Coefficients: 1	T 2.1.1	Working Methods and Terminology 2	1	1	1H30	-	-	22H30	2H30	-	-	X	100%
<b>Total Semester 2</b>			<b>30</b>	<b>17</b>	<b>10h30</b>	<b>6h00</b>	<b>8h30</b>	<b>375h00</b>	<b>375h00</b>				

Other\* = Additional work in semester consultation; CC\* = Continuous control.

**Annex of the second year Bachelor's degree program**  
**Natural and life sciences field      « Biological Sciences » field**

**Third Semester 3**

Teaching units	Subjects	Credits	Coefficients	Hourly volume weekly			HVW (15 weeks)	Other *	Mode of evaluation			
	Title			Course	DW	PW			CC*	Exam		
<b>U E Fundamental</b> Code: UEF 2.1.1 Credits: 6 Coefficients: 3	Zoology	6	3	3H00	-	1H30	67H30	82H30	X	40%	X	60%
<b>U E Fundamental</b> Code: UEF 2.1.2 Credits: 12 Coefficients: 6	Biochemistry	6	3	3H00	1H30	-	67H30	82H30	X	40%	X	60%
	Genetics	6	3	3H00	1H30	-	67H30	82H30	X	40%	X	60%
<b>U E Methodology</b> Code: UEM 2.1.1 Credits: 4 Coefficients: 2	Communication and Expression Techniques (in English)	4	2	1H30	1H30	-	45H00	55H00	X	40%	X	60%
<b>U E Methodology</b> Code: UEM 2.1.2 Credits: 5 Coefficients: 3	Biophysics	5	3	1H30	1H30	1H00	60H00	65H00	X	40%	X	60%
<b>U E Discovery</b> Code : UED 2.1 Credits: 2 Coefficients: 2	Environment and Sustainable Development	2	2	1H30	1H30	-	45H00	5H00	X	40%	X	60%
<b>U E Transversal</b> Code: UET 2.1 Credits: 1 Coefficients: 1	University Ethics and Deontology	1	1	1H30	-	-	22H30	2H30	-	-	X	100%
<b>Total Semester 3</b>		<b>30</b>	<b>17</b>	<b>15h00</b>	<b>7h30</b>	<b>2h30</b>	<b>375h00</b>	<b>375h00</b>				

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**Annex of the second year Bachelor's degree program**  
**Natural and life sciences field      « Biological Sciences » field**

**Fourth semester**

Teaching units	Subjects	Credits	Coefficients	Hourly volume weekly			HVW (15 weeks)	Other *	Mode of evaluation			
	Title			Course	DW	PW			CC*		Exam	
<b>U E Fundamental</b> Code: UEF 2.2.1 Credits: 6 Coefficients: 3	Botany	6	3	3H00	-	1H30	67H30	82H30	X	40%	X	60%
<b>U E Fundamental</b> Code: UEF 2.2.2 Credits: 12 Coefficients: 6	Microbiology	8	4	3H00	1H30	1H30	90H00	110H00	X	40%	X	60%
	Immunology	4	2	1H30	1H30	-	45H00	55H00	X	40%	X	60%
<b>U E Methodology</b> Code: UEM 2.2.1 Credits: 4 Coefficients: 2	Scientific methodology and techniques for studying life	4	2	1H30	-	1H30	45H00	55H00	X	40%	X	60%
<b>U E Methodology</b> Code: UEM 2.2.2 Credits: 5 Coefficients : 3	Biostatistics	5	3	1H30	1H30	1H00	60H00	65H00	X	40%	X	60%
<b>U E Discovery</b> Code: UED 2.2.1 Credits: 2 Coefficients: 2	General ecology	2	2	1H30	1H30	-	45H00	5H00	X	40%	X	60%
<b>U E Transversal</b> Code: UET 2.2.1 Credits: 1 Coefficients: 1	Computer tools	1	1	1H30	-	-	22H30	2H30	-	-	X	100%
<b>Total Semester 4</b>		<b>30</b>	<b>17</b>	<b>13h30</b>	<b>6h00</b>	<b>5h30</b>	<b>375h00</b>	<b>375h00</b>				

Other\* = Additional work in semester consultation; CC\* = Continuous control.

**Annex of the teaching program of the third year  
Licence « Microbiology »**

**Fifth Semester :**

Teaching units	HVW	V.H weekly				Coeff	Crédits	Mode of evaluation	
	15 sem	C	TD	TP	Others			Continuous (40%)	Exam (60%)
<b>U E Fundamental</b>									
<b>UEF 1 (O/P)</b>									
<u>Matter1</u> : Systematics of prokaryotes (Bacteria and Archaea)	67H30	3H00	-	1H 30	82H30	3	6	X	X
<u>Matter 2</u> : <u>Mycology-Algology-Virology</u>	45H	1H30	-	1H 30	55H	2	4	X	X
<b>UEF 2 (O/P)</b>									
<u>Matter1</u> : Microbial biochemistry	45H	1H 30		1H 30	55H	2	4	X	X
<u>Matter 2</u> : Molecular biology and genetic engineering	45H	1H 30	1H 30	-	55H	2	4	X	X
<b>UE Methodology</b>									
<u>Matter 1</u> : Microbial genetics	60H	3H		1H	65H	3	5	X	X
<u>Matter 2</u> : Hygiene and safety	45H	1H30		1H30	55H	2	4	X	X
<b>U E Discovery</b>									
<u>Matter 1</u> : Pharmacology	45H	1H30	1H30		5H	2	2	X	X
<b>U E Transversal</b>									
<u>Scientific English</u>	22H30	1H30			2H30	1	1	X	X
<b>Total Semester 5</b>	<b>375H</b>	<b>15H</b>	<b>1H30</b>	<b>8H30</b>	<b>375H</b>	<b>17</b>	<b>30</b>	X	X

**Annex of the teaching program of the third year Licence "Microbiology"  
Sixth Semester :**

Teaching units	HWV	H.V weekly				Coeff	Crédits	Mode of evaluation	
	15 sem	Cours	TD	TP	Others			Continuous (40%)	Exam (60%)
<b>U E Fundamental</b>									
<b>UEF 3.2.1(O/P) : Applied Microbiology</b>									
<b>Matière1 :</b> Industrial Microbiology	67H30	3H00	-	1H 30	82H30	3	6	X	X
<b>Matière2:</b> Environmental microbiology	67H30	3H00	-	1H 30	82H30	3	6	X	X
<b>Matière3 :</b> Food microbiology	67H30	3H00	-	1H30	82H30	3	6	X	X
<b>UE méthodologie</b>									
<b>UEM1(O/P)</b>									
<b>Matter 1:</b> Microbiological control techniques	45H00	1H30	-	1H30	55H00	2	4	X	X
<b>Matter 2</b> Biochemical Analysis Techniques	60H00	1H30	1H30	1H00	65H00	3	5	X	X
<b>U E Discovery</b>									
<b>UED1(O/P)</b>									
<b>Matter 1:</b> Toxicology	45H00	1H30	1H30	-	05H00	2	2	X	X
<b>U E Transversal</b>									
<b>UET1(O/P):</b>									
<b>Matter 1:</b> Documentation techniques	22H30	1H30	-	-	02H30	1	1	X	X
<b>Total Semestre 6</b>	<b>375H</b>	<b>15H</b>	<b>03H</b>	<b>07H</b>	<b>375H</b>	<b>17</b>	<b>30</b>	X	X

**5- Global summary of the training : (the global HV separated in courses,  
TD, for the 06 semesters of teaching, for the different types of UT: 1st SNL,  
L2 Biology and L3 Microbiology.**

<b>HV</b>	<b>UT</b>	<b>UF</b>	<b>UM</b>	<b>UD</b>	<b>UT</b>	<b>Total</b>
<b>COURSE</b>		630H	292H30	135	135	1192H30
<b>DW</b>		202h30	180h	90h		472h30
<b>PW</b>						585h
<b>Other Personal Work</b>		1485h	720h	30h	15h	2250h
<b>Memory</b>		/	/	/	/	/
<b>Total</b>		2700h	1350h	300h	150h	4500h
<b>Credits</b>		108	54	12	6	180
<b>% In Credits For Each Tu</b>		60	30	6.67	3.33	100%